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

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 2

#### Data Set

Amateur Observation Network Data on  
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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.

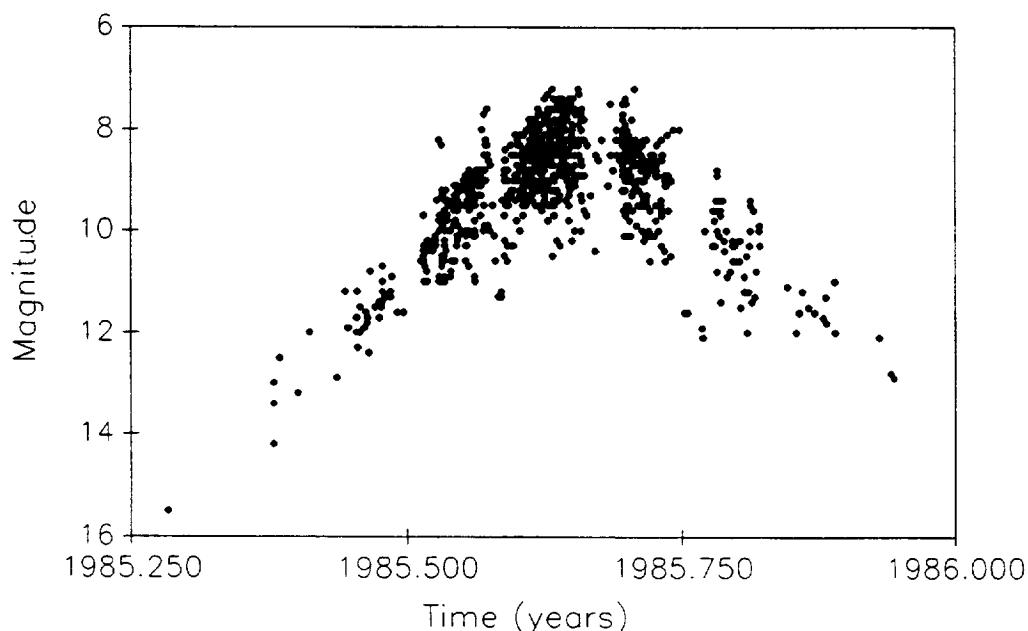


Figure 1. (a) The light curve of Comet Giacobini-Zinner, using the brightest total magnitude estimate (if more than one was made) by each observer on every night an observation was made. No aperture corrections have been applied. Breaks in the curve fall around full moon.

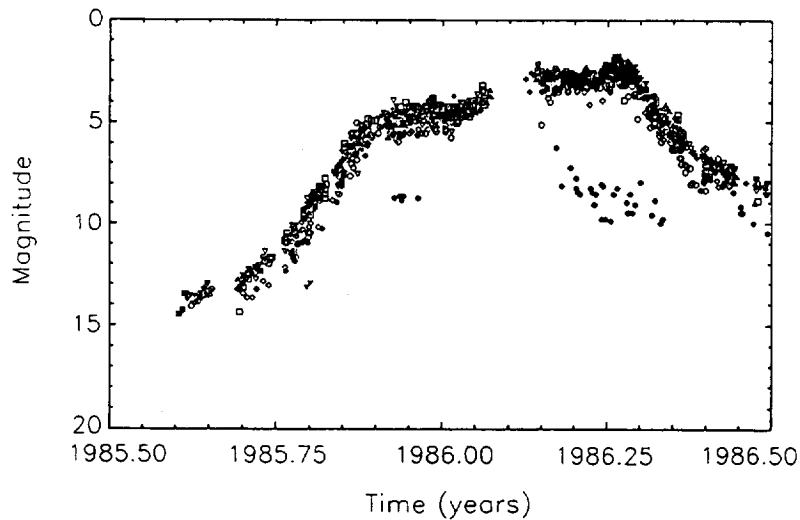


Figure 1. (b) The light curve of Comet Halley using the brightest magnitude estimate (if more than one was made) by observers J. Bortle, R. Bouma, D. W. E. Green, A. Hale, A. Jones, R. Keen, G. Keitch, C. S. Morris, W. Morrison, A. Pearce, D. Seargent, and J. Shanklin on every night an observation was 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.

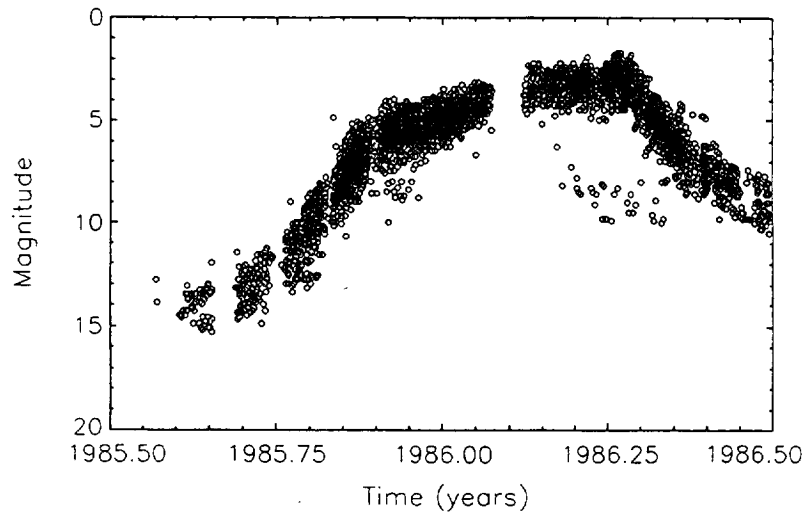


Figure 1. (c) The light curve of Comet Halley using the brightest magnitude estimate (if more than one was made) by all observers on every night an observation was made. Some "nuclear" magnitudes ( $m_2$ ) have been included, falling well below the total magnitude light curves. No aperture corrections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

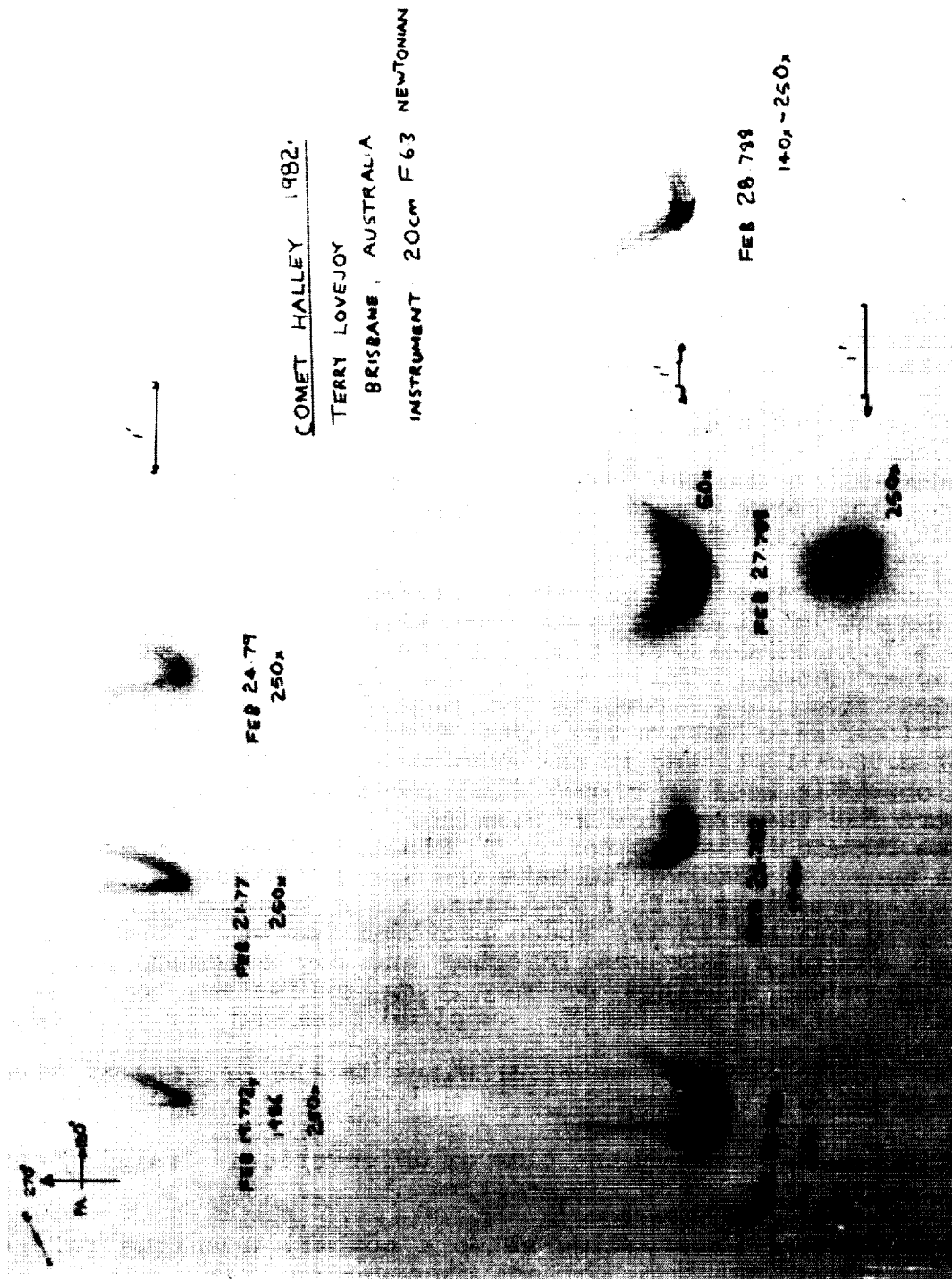


Figure 2. Terry Lovejoy supplied this collection of drawings of Comet Halley (AON#s 830847, 830850, 830855, 830857, 830860, 830863, and 830868).

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*

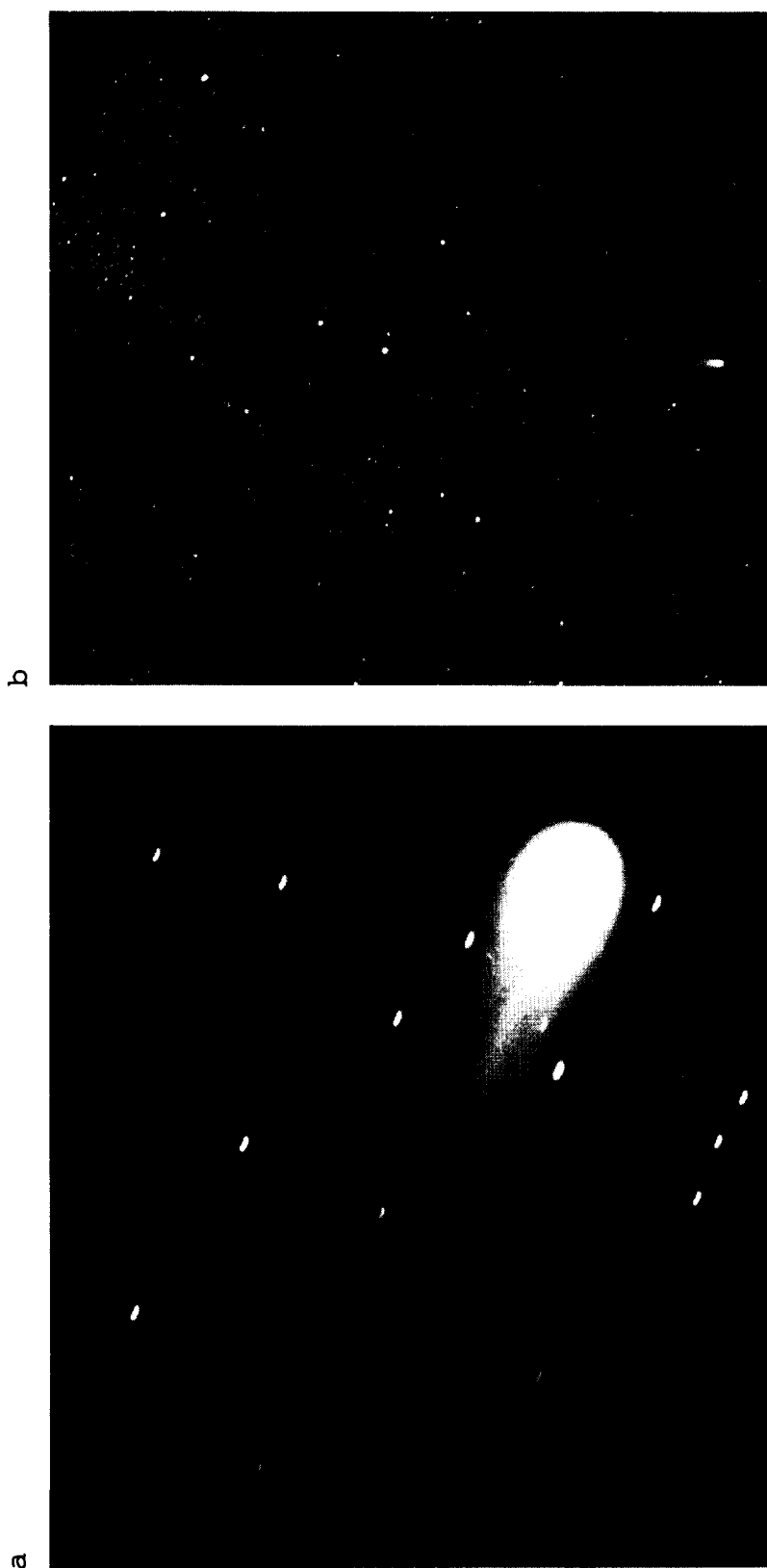


Figure 3. (a) Michael Crist obtained this photograph of Comet Halley's coma and tail root on 11 January 1986 (AON# 850760). (b) Stephen Edberg captured Comet Halley's tail extending towards the Milky Way in this photograph on 20 March 1986 (AON# 851187).

*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

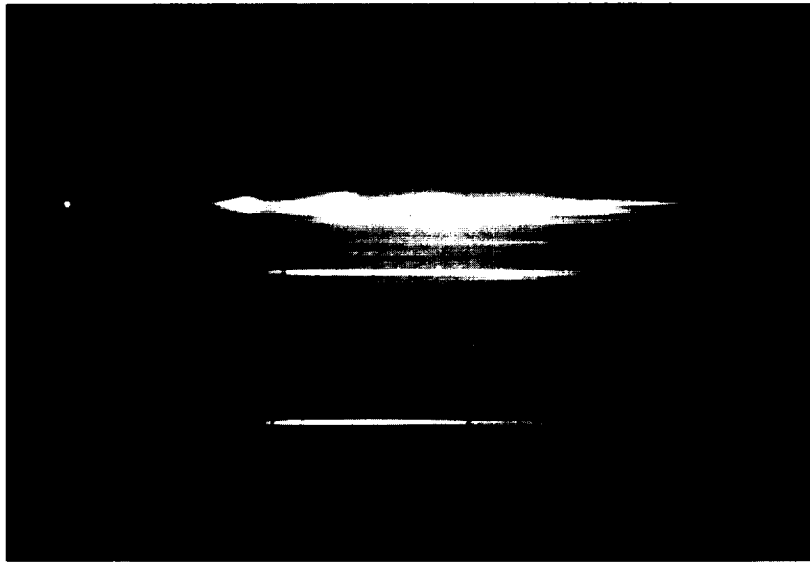
Amateur astronomers apparently generated the only low dispersion spectra of Comet Halley (Figure 4). Reports of spectroscopic observations were made on a form closely matching the photographic report form. (Both the photography report form and the spectroscopy report form were each similarly revised 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 <u>G</u> rating or the apex angle of a <u>P</u> rism. The second letter indicates the specific configuration used: <u>N</u> on-objective, <u>O</u> bjective, or <u>S</u> litless.
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=	.ttttt	/ TIME OF MIDDLE OF OBSERVATION (UT)
DATE-REL= 'dd/mm/yy'		/ DATE OF PUBLIC RELEASE
DISCIPLN= 'AMATEUR'		/ IEW DISCIPLINE
LONG-OBS= 'ddd/mm/ss'		/ EAST LONGITUDE OF OBSERVING SITE
LAT-OBS= 'ddd/mm/ss'		/ LATITUDE OF OBSERVING SITE
SYSTEM = '8nnnttii'		/ 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 =	ff.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 ROWS
PCOUNT =	0	/ NO RANDOM PARAMETERS
GCOUNT =	1	/ ONLY ONE GROUP
TIELDS =	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 CROMME-
TBCOL4 =	10	/ STARTING COLUMN LIN ARCHIVE OR
TFORM4 = 'A7'		/ FORMAT INT'L. COMET QTRLY.
TNULL4 = ''		/ MISSING VALUE FOR EXPLANATION)
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)
TBCOL10 = 'E5.2' / 42 / STARTING COLUMN
TFORM10 = 'DEGREE' / FORMAT
TUNIT10 = 'DEGREE' / UNIT
TNULL10 = '-9.00' / MISSING VALUE

TTYPE11 = 'P.A. OF TAIL 2' / POSITION ANGLE OF TAIL (2ND TAIL, IF SEEN)
TBCOL11 = 'I3' / 48 / STARTING COLUMN
TFORM11 = 'DEGREE' / FORMAT
TUNIT11 = 'DEGREE' / UNIT
TNULL11 = '-99' / MISSING VALUE

TTYPE12 = 'LENGTH OF TAIL 3' / TAIL LENGTH (3RD TAIL, IF SEEN)
TBCOL12 = 'E5.2' / 52 / STARTING COLUMN
TFORM12 = 'DEGREE' / FORMAT
TUNIT12 = 'DEGREE' / UNIT
TNULL12 = '-9.00' / MISSING VALUE

TTYPE13 = 'P.A. OF TAIL 3' / POSITION ANGLE OF TAIL (3RD TAIL, IF SEEN)
TBCOL13 = 'I3' / 58 / STARTING COLUMN
TFORM13 = 'DEGREE' / FORMAT
TUNIT13 = 'DEGREE' / UNIT
TNULL13 = '-99' / MISSING VALUE

TTYPE14 = 'LIMITING MAG.' / MAGNITUDE OF FAINTEST STAR VISIBLE TO NAKED EYE
TBCOL14 = 'E4.1' / 62 / STARTING COLUMN
TFORM14 = 'DEGREE' / FORMAT
TNULL14 = '-9.0' / MISSING VALUE

TTYPE15 = 'SKY INTERFERENCE' / LIGHT INTERFERING WITH OBSERVATION
TBCOL15 = 'A4' / 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)
TBCOL16 = 'A1' / 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 = 'hhh...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)
TEMPENUL= '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 ORDER
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 = 'mmmm...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	+37/59/00	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	160	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	-26/49/26		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				
	2	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
Bezrodniy, 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	151/00/00	-34/00/00		1 deg	26
	6	134/00/00	-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	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	355/52/15	+40/17/12	575	1 arcsec	14
	3	356/16/00	+40/19/00	1	1 deg	14
	4	355/55/00	+40/17/00	1	1 deg	14
	5	356/54/39	+40/31/24	929	1 arcsec	14
	6	355/52/00	+40/38/00	1	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	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	006/01/00	+43/58/00	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	242/01/00	+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
Csomas, 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				
Darvann, 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, K.	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	287/15/00	+07/20/00	3300	1 arcmin	33
	6	286/07/00	+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	286/13/06	+41/23/59	296	1 arcsec	16
	2	286/20/00	+41/20/00	52	1 arcsec	16
	3	300/34/00	+13/07/30	1	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				
Dzhultae, 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	+34/30/30	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		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	150/40/39	-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, E.	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	241/17/06	+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	243/17/54	+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	253/15/42	+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, B.	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
Heys Jr., R. B.	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
Broch, 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	172/38/00	-43/30/00		5 deg	48
	8	170/30/00	-44/02/00		5 deg	48
	9	169/58/00	-44/28/00		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	018/00/00	-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
Laird, 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. B.	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	-31/18/00	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	013/15/30	+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	011/40/00	+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	312/36/18	-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	152/30/00	-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
Nassar, 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				
Niebores, 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
Nowak, 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	1100	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
Pioccinini, 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	391	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
Schneiders, 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	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	1 deg	82
Swart, E. T.	1	005/29/54	+51/28/06	17	0.1 arcmin	46
Swavely, M. E.	1	282/05/00	+40/45/00	34	1 arcmin	16
	2	282/12/00	+40/42/00	1	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	1 deg	8
	3	139/00/00	+36/00/00	10	1 deg	8
	4	139/00/00	+36/00/00	10	1 deg	8
	5	observing site unknown				
	6	observing site unknown				
	7	139/31/00	+35/51/00	5	1 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	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	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
Travník, 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
Vaclík, 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	010/36/00	+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	011/15/00	+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	+44/30/00	9	1 arcmin	7
	9	011/51/00	+44/25/00	13	1 arcmin	7
	10	015/01/00	+37/07/00	695	1 arcmin	7
	11	015/07/00	+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, B.	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	139/21/00	+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	+28/59/16	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	1	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	+28/26/53	2400	1.6 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	+35/29/00	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
Yen, 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	1	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	5	deg	31
Zanette, D.	1	289/00/00	-41/00/00	1	deg	27
Zanotta, M. V.	1	009/00/00	+46/00/00	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	2	deg	7
	5	009/03/00	+45/48/00	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	255/03/00	+42/05/00	1400	1 arcmin	16
Zanut, S.	1	012/47/24	+45/57/00	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	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 Maldives 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	
38 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 Maldives 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 Halley



DATE: 23 JAN 1985

DATE: 23 JAN 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
23.347	810001	19.6	M	SA51		0			0.61	C	18	549		Y	2	O'Meara,S.J	A

NOTE A Time of observation spanned 23.340-23.354. Nuclear magnitude. Palomar charts also used. Coma diameter 5 arc sec. 14000 feet. Used oxygen. Position confirmed with CCD on 88 inch. (Observer gave limit as  $\leq 20.4$ , SA51. See observer's account in Sky and Telescope, 1985 April, pages 376-377. Ed.)

DATE: 24 JAN 1985

DATE: 24 JAN 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
24.266	810002		M	SA51		0			0.61	C	18	549		Y	2	O'Meara, S.J	A

NOTE A Time of observation spanned 23.240-23.292. Magnitude: can only say about same as 850123. Palomar charts also used. Coma seen but not measured. (See observer's account in Sky and Telescope, 1985 April, pages 376-377. Ed.)



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
13.000	810003	15.5	M	SA					0.46	R	15	250				O'Meara, S.J	A

NOTE A Questionable.

DATE: 21 JUL 1985

DATE: 21 JUL 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
21.13	810004	>13.6		SU TAU					0.35	N	5.5	160	5.5Z	Y	1	Fleet,R.W	A

NOTE A Magnitude limit is of faintest star visible at altitude of approx. 30 degrees, with limited time available. No attempt was made to locate naked eye stars close to the comet position. Times given are just before start of twilight when faintest stars were usually recorded. Comet not seen.

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	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
22.13	810005	>14.0		SU TAU					0.35	N	5.5	160	5.5Z	Y	1	Fleet,R.W	A

NOTE A Magnitude limit is of faintest star visible at altitude of approx. 30 degrees, with limited time available. No attempt was made to locate naked eye stars close to the comet position. Times given are just before start of twilight when faintest stars were usually recorded. Comet not seen.

DATE: 23 JUL 1985

DATE: 23 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
23.13	810006	>13.9		SU TAU					0.35	N	5.5	160	5.5Z	Y	1	Fleet,R.W	A

NOTE A Magnitude limit is of faintest star visible at altitude of approx. 30 degrees, with limited time available. No attempt was made to locate naked eye stars close to the comet position. Times given are just before start of twilight when faintest stars were usually recorded. Comet not seen.

DATE: 24 JUL 1985

DATE: 24 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
24.13	810007	>13.8		SU TAU					0.35	N	5.5	160	5.5Z	Y	1	Fleet, R.W	A

NOTE A Magnitude limit is of faintest star visible at altitude of approx. 30 degrees, with limited time available. No attempt was made to locate naked eye stars close to the comet position. Times given are just before start of twilight when faintest stars were usually recorded. Comet not seen.

DATE: 25 JUL 1985

DATE: 25 JUL 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
25.13	810008	>14.1		SU TAU					0.35	N	5.5	160	5.5Z	Y	1	Fleet,R.W	A

NOTE A Magnitude limit is of faintest star visible at altitude of approx. 30 degrees, with limited time available. No attempt was made to locate naked eye stars close to the comet position. Times given are just before start of twilight when faintest stars were usually recorded. Comet not seen.

DATE: 26 JUL 1985

DATE: 26 JUL 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
26.13	810009	>14.3		SU TAU					0.35	N	5.5	160	5.5Z	Y	1	Fleet,R.W	A

NOTE A Magnitude limit is of faintest star visible at altitude of approx. 30 degrees, with limited time available. No attempt was made to locate naked eye stars close to the comet position. Times given are just before start of twilight when faintest stars were usually recorded. Comet not seen.

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
27.13	810010	>14.3		SU TAU					0.35	N	5.5	160	5.5Z	Y	1	Fleet,R.W	A
27.48	810011	15.0:	S	SU TAU					0.61	C	16	375		Y	4	Edberg,S.J	B
27.48	810012	15.0:	S	SU TAU	0.2	1			0.610	C	16.0	390	5.0	Y	1	Morris,C.S	C

NOTE A Magnitude limit is of faintest star visible at altitude of approx. 30 degrees, with limited time available. No attempt was made to locate naked eye stars close to the comet position. Times given are just before start of twilight when faintest stars were usually recorded. Comet not seen.

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

NOTE C Approximate coma diameter = 0.17'.



DATE: 28 JUL 1985

DATE: 28 JUL 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
28.11	810013	14.5:		SU TAU	0.5	2			0.355	SC	11	200			1	Verdenet,M	A
28.13	810014	>14.6		SU TAU					0.35	N	5.5	160	5.5Z	Y	1	Fleet,R.W	B
28.48	810015	15.0:	S	SU TAU					0.61	C	16	375		Y	4	Edberg,S.J	C
28.48	810016	15.0:	S	SU TAU	0.2	1			0.610	C	16.0	390	5.0	Y	1	Morris,C.S	D
28.91	810017	12.8	S		0.3	1			0.41	N	4.2	135	6.8	Y	1	Clark,M.L	E

NOTE A Magnitude uncertain. Bright sky.

NOTE B Magnitude limit is of faintest star visible at altitude of approx. 30 degrees, with limited time available. No attempt was made to locate naked eye stars close to the comet position. Times given are just before start of twilight when faintest stars were usually recorded. Comet not seen.

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

NOTE D Approximate coma diameter = 0.17'.

NOTE E Averted vision only.

SUB-NETWORK: DRAWING

Date(UT)	ACON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
28.115	830001		0.356	SC	11	200			1	Verdenet,M	A

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 29 JUL 1985

DATE: 29 JUL 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
29.13	810018	>14.5		SU TAU					0.35	N	5.5	160	5.5Z	Y	1	Fleet,R.W	A
29.313	810019	13.9	S	SU TAU	0.5	3			0.254	N	5.6	120	6.0Z	Y	1	Knight,S	B

NOTE A Magnitude limit is of faintest star visible at altitude of approx. 30 degrees, with limited time available. No attempt was made to locate naked eye stars close to the comet position. Times given are just before start of twilight when faintest stars were usually recorded. Comet not seen.

NOTE B Slightly elongated coma.

DATE: 30 JUL 1985

DATE: 30 JUL 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
30.11	810020	14.5:		SU TAU	0.5	3			0.355	SC	11	200			1	Verdenet,M	A
30.13	810021	>14.5		SU TAU					0.35	N	5.5	160	5.5Z	Y	1	Fleet,R.W	B

NOTE A Magnitude uncertain. Better sky.

NOTE B Magnitude limit is of faintest star visible at altitude of approx. 30 degrees, with limited time available. No attempt was made to locate naked eye stars close to the comet position. Times given are just before start of twilight when faintest stars were usually recorded. Zodiacal light interfered after moonset. Comet not seen.

SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)
30.109	830002		0.356	SC	11	200	15		1	Verdenet,M

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
8.41	810022	13.5:	B		0.3	1			0.335	N	4.5	216	4.5	Y		Kronk,G	A

NOTE A Coma diameter approximate. Exceptionally clear.

DATE: 10 AUG 1985

DATE: 10 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
10.48	810023	14.5	S	SU TAU		2			0.61	C	16	390	7	Y	9	Hale,A	A
10.48	810024	14.5	S	SU TAU	0.3	2			0.610	C	16.0	390	5.5	Y	1	Morris,C.S	B

NOTE A Joint observation with C.S. Morris and S.J. Edberg.

NOTE B A stellar condensation (m2 = 16 or fainter), offset toward the northeast, was glimpsed. Coma diameter = 0.30'.

DATE: 11 AUG 1985

DATE: 11 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
11.47	810025	14.6	S	SU TAU		1		0.61	C	16	375		Y	4	Edberg,S.J	A
11.48	810026	14.5	S	SU TAU	0.2	2		0.610	C	16.0	390	5.5	Y	1	Morris,C.S	B

NOTE A Comet sufficiently stellar for direct in-focus comparison. Observing with C. Morris and A. Hale.

NOTE B Stellar condensation not seen. Coma diameter = 0.25'

DATE: 12 AUG 1985

DATE: 12 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
12.48	810027	14.3	S	SU TAU		2			0.61	C	16	390	7	Y	9	Hale,A	A
12.48	810028	14.3	S	SU TAU	0.4	2			0.610	C	16.0	390	6.0	Y	1	Morris,C.S	B

NOTE A Joint observation with C.S. Morris.

NOTE B Hint of a faint condensation. Coma diameter = 0.42'.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.130	850001	0.225	1.7	0.140	9.1 x 6.1	15.00	Kodak 2415		N		10/P	1	Koch,B	A
12.160	850002	0.225	1.7	0.140	9.1 x 6.1	20.00	Kodak 2415		N		11/P	1	Koch,B	A

NOTE A Photograph made by J. Stahlhut and B. Koch. W92 filter used.

DATE: 13 AUG 1985

DATE: 13 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
13.10	810029	14	:	SU TAU	0.5				0.406	N	5.6	164	5.5	Y	4	Bouma,R.J	A
13.10	810030	>14.0		CZ ORI					0.35	N	5.5	160	5.2	Y	1	Fleet,R.W	B
13.10	810031	14	:	S SU TAU	0.5	2			0.406	N	5.6	126	5.5	Y	4	Bus,E.P	C
13.733	810032	14.5	M		1				0.3	N	6	100	6.0	Y	1	Ichikawa,K	D
13.744	810033	14.5	M		0.6				0.3	N	6	100	6.0	Y	1	Ichikawa,K	
13.896	810034	13.5	S	SU TAU	0.4	2			0.41	N	4.2	165	6.4	Y		Pearce,A	

NOTE A Positive observation, confirmed by photograph recently. Coma diameter approximate.

NOTE B Before moonrise. Comet not seen.

NOTE C Positive observation, drawing compared with photograph recently. Coma diameter approximate.

NOTE D Coma diameter is upper limit.



DATE: 14 AUG 1985

DATE: 14 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
14.12	810035	>14.6		CZ ORI					0.35	N	5.5	160	5.2	Y	1	Fleet,R.W	A
14.12	810036	14.3	S	SU TAU	0.5	3			0.400	N	5	170	6.5	Y	2	Merlin,J.-C	
14.736	810037	14.3	M		1.2				0.3	N	6	100	6.5	Y	1	Ichikawa,K	
14.86	810038	13.1	S	SU TAUC	0.4	2			0.41	N	4.2	135	6.7	Y	1	Clark,M.I	B

NOTE A Comet not seen.

NOTE B Very difficult.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
14.099	830003	0.11	0.40	N	5	170,254	75		2	Merlin,J.-C	A
14.115	830004	0.22	0.356	SC	11	400	30		1	Verdenet,M	

NOTE A Magnitude 15.2; coma diameter 27". Stars down to mag. 16-16.5.

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
15.11	810039	13.5	S	SUT					0.33	N	5	125	5.0		1	Shanklin, J.D	
15.11	810040	13.7	S	SU TAU	0.3	2			0.406	N	5.6	164	6 Z	Y	4	Bus, E.P	
15.12	810041	13.8	S	SU TAU	0.3	2			0.406	N	5.6	164	5.5Z	Y	4	Bouma, R.J	
15.12	810042	>14.7		CZ ORI					0.35	N	5.5	160	5.2	Y	1	Fleet, R.W	A

NOTE A Comet not seen.

SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
15.094	830005	0.23	0.356	SC	11	400			1	Verdenet, M	A

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 16 AUG 1985

DATE: 16 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
16.098	850003	2.032	5	0.508	1.0 x 0.7	5.00	Kodak Tri-X	400/27	N	C	001/P	1	Arbour,R	A
16.108	850004	2.032	5	0.508	1.0 x 0.7	10.00	Kodak Tri-X	400/27	N	C	002/P	1	Arbour,R	A
16.124	850005	2.032	5	0.508	1.0 x 0.7	5.00	Kodak Tri-X	400/27	N	C	003/P	1	Arbour,R	A
16.130	850006	2.032	5	0.508	1.0 x 0.7	6.33	Kodak Tri-X	400/27	N	C	004/P	1	Arbour,R	A
16.156	850007	0.225	1.7	0.140	9.1 x 6.1	20.00	Kodak 2415		N		16/P	1	Koch,B	B

NOTE A (On original report form observer gave photo method as negative projection, which contradicts values he supplied for instrument focal length and EFL. Ed.)

NOTE B Photograph made by J. Stahlhut and B. Koch. W92 filter used.

DATE: 17 AUG 1985

DATE: 17 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	
17.08	810043	14.2	S	SU TAU	0.5	3			0.400	N	5	170	6.5	Y	2	Merlin,J.-C		
17.11	810044	13.5	S	SU TAU	0.3	2			0.406	N	5.6	102	6	2	Y	4	Bus,E.P	
17.12	810045	13.6	S	SU TAU		1			0.406	N	5.6	102	5.52	Y	4	Bouma,R.J		
17.12	810046	>14.7		CZ ORI					0.35	N	5.5	160	5.3	Y	1	Fleet,R.W	A	
17.34	810047	14.1	S	SU TAU	0.5	5			0.610	N	4	270				Bortle,J.E		
17.358	810048	15.0:	B	SU TAU					0.445	N	4.5	167	6.0	Y	3	Morrison,W		
17.734	810049	14.2	M		0.5				0.3	N	6	100	6.5	Y	3	Ichikawa,K		

NOTE A Comet not seen.

SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)
17.099	830006		0.356	SC	11	200,400	75		1	Verdenet,M

DATE: 18 AUG 1985

DATE: 18 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
18.12	810050	14.9		CZ ORI		9			0.35	N	5.5	160	5.3	Y	1	Fleet,R.W	A
18.48	810051	13.9	S	SU TAU					0.20	N	6	244	7	Y	1	Hale,A	B
18.4861	810052				0.3	5			0.61	N	5	381	6.2	Y	4	Cook,A.J	
18.4896	810053	14.3	S	SU TAU	0.3	3			0.32	N	4.8	170	6.2	Y	4	Cook,A.J	
18.49	810054	14.0	S	SU TAU	0.3				0.256	N	4.5	156	7.0	Y	8	Morris,C.S	C

NOTE A Recorded as a suspect at limit.

NOTE B Comet extremely faint and at the limit of visibility. Candidate suspected on August 18.49 and confirmed on August 19.49.

NOTE C Coma diameter = 0.30'.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
18.486	850008	0.216	5.5	0.392	9.5 x 6.4	10.00	Kodak Tri-X	400/	Y	S	000/P	1	Hall,B

DATE: 19 AUG 1985

DATE: 19 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	
19.11	810055	13.5	S	SU TAU	0.3	2			0.406	N	5.6	126	6	Z	Y	4	Bus, E.P	
19.11	810056	14	:		0.3	7			0.406	N	5.6	164	6		Y	3	van LOO, F.R	A
19.12	810057	13.6	S	SU TAU	0.4	1			0.406	N	5.6	164	6	Z	Y	4	Bouma, R.J	
19.12	810058	>14.8		CZ ORI					0.35	N	5.5	160	5.1		Y	1	Fleet, R.W	B
19.49	810059	13.9	S	SU TAU					0.20	N	6	244	7		Y	1	Hale, A	C

NOTE A Coma diameter approximate.

NOTE B Comet not seen.

NOTE C Comet extremely faint and at the limit of visibility. Candidate suspected on August 18.49 and confirmed on August 19.49.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
19.137	850009	3.000		0.355	0.7 x 0.5	50.00	Kodak 2415		Y	S	32/T	2	Genebriera, J	
19.137	850010	3.000		0.355	0.7 x 0.5	50.00	Kodak 2415		Y	S	000/T	2	Genebriera, J	A

NOTE A (Observer's image identifier is W/N. Ed.)

DATE: 20 AUG 1985

DATE: 20 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
20.12	810060	>14.8		CZ ORI					0.35	N	5.5	160	5.3	Y	1	Fleet,R.W	A

NOTE A Comet not seen.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
20.131	850011	3.000		0.355	0.7 x 0.5	50.00	Kodak 2415		Y	S	35/T	2	Genebriera,J

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	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
21.063	810061	14.4:		U ORI					0.203	SC	6				4	Linder,J	A
21.11	810062	14.9		CZ ORI		9			0.35	N	5.5	160	5.3	Y	1	Fleet,R.W	B
21.49	810063	13.9	S	SU TAU	0.5	3			0.256	N	4.5	156	7.0	Y	8	Morris,C.S	C
21.85	810064	13.3	S	SU TAUC	0.3	2			0.41	N	4.2	135	6.8	Y	1	Clark,M.L	D
21.896	810065	13.7	S	SU TAU	0.3	2			0.41	N	4.2	165	6.3	Y		Pearce,A	

NOTE A Photograph derived magnitude. Kodak 103a-E 0230 UT-0255 UT. Photographic magnitude estimate using the diameter of stars in this field for estimate the brightness of the comet. [sic] Photograph made using C8 with Telecompressor at 1:6.04. Center of field approximately 6h 3.2, approximately +19 deg. 12'.

NOTE B Recorded as star at limit.

NOTE C Coma diameter = 0.52'.

NOTE D Very difficult. Averted vision only.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdag	ID/Typ	Site	Observer(s)
21.113	850012	1.222	6	0.203	1.7 x 1.1	25.00	Kodak 103a-E		N	S	1/P	4	Linder,J



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
22.12	810066	13.5	S	SU TAU	0.4	2			0.406	N	5.6	164	6 2	Y	4	Bouma, R.J	
22.12	810067	15.1		CZ ORI		9			0.35	N	5.5	160	5.5	Y	1	Fleet, R.W	A
22.365	810068	15.0	B	SU TAU	0.2				0.445	N	4.5	286	6.0	Y	3	Morrison, W	B
22.722	810069	14.0	M		0.8				0.3	N	6	100	5.5	Y	1	Ichikawa, K	
22.92	810070	15.2	B	PA	0.1	1			1.00	N	13	185				Churyumov, K	

NOTE A Movement seen in one hour.

NOTE B Coma diameter approximate.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
22.122	830007		0.356	SC	11	200	30		1	Verdenet, M	A

NOTE A (Three drawings supplied at 200x (0.20'/mm), 400x, and 400x. Ed.)

DATE: 23 AUG 1985

DATE: 23 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

Date(UT)	ADN#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
23.10	810071	14.6		CZ ORI		9			0.35	N	5.5	160	5.3	Y	1	Fleet,R.W	A
23.363	810072	15.0:	S	SU TAU	0.2				0.445	N	4.5	286	6.0	Y	3	Morrison,W	
23.389	810073	13.4	M	SU TAU		1			0.254	N	4.5	143	6.5	Y	4	DeYoung,J.A	
23.49	810074	13.5	S	SU TAU	1.0	2			0.256	N	4.5	156	7.0	Y	8	Morris,C.S	
23.726	810075	13.7	M		1.2				0.3	N	6	100	4.6	Y	1	Ichikawa,K	

NOTE A Recorded as star 1/2 mag brighter.

DATE: 24 AUG 1985

DATE: 24 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
24.09	810076	13.8	S	SU TAU	0.6	4			0.400	N	5	170	6.5	Y	2	Merlin,J.-C	
24.111	810077	14.8		CZ ORI	0.2	6			0.35	N	5.5	160	5.5	Y	1	Fleet,R.W	A
24.125	810078	13.0:				5			0.345	N	4.5	75	5.6	Y	1	Gomez,A	
24.13	810079	13.3	S	SU TAU	0.4	2			0.406	N	5.6	164	5.5Z	Y	4	Bouma,R.J	
24.13	810080	13.5	S	SU TAU	0.3	2			0.406	N	5.6	164	5.5Z	Y	4	Bus,E.P	
24.35	810081	13.6	S	SU TAU	0.5	4			0.500	N	5	241				Bortle,J.E	
24.49	810082	13.4	S	SU TAU	0.9	2			0.20	N	6	122	7	Y	1	Hale,A	
24.49	810083	13.4	S	SU TAU	1.0	3			0.256	N	4.5	156	7.0	Y	8	Morris,C.S	
24.587	810084	14.8	S		0.3	0			0.44	N	4.5	225	6.5	Y	4	Fabre,R	

NOTE A Central condensation magnitude only.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
24.104	830008		0.335	N	4.5	75		5.6	1	Ripero,J	A
24.120	830009		0.345	N	4.5	75	15	5.6	1	Gomez,A	B
24.127	830010	0.20	0.356	SC	11	200,400	35		1	Verdenet,M	

NOTE A Field: 0.6 deg. Faintest star visible through the telescope about 14.5. (Drawing data inferred from magnitude report form. Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B With a 2x Barlow lens, it appeared with a little "haze" around it. Pearly white color. 5 observers saw it.

DATE: 25 AUG 1985

DATE: 25 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
25.104	810085	14.8		CZ ORI	0.2	6			0.35	N	5.5	160	5.3	Y	1	Fleet,R.W	A
25.42	810086	13	B		0.3	1			0.335	N	4.5	216	4.5	Y		Kronk,C	B
25.45	810087	13.6	S	SU TAU	0.8	2			0.32	N	4	66	6.5	Y	1	Keen,R	
25.48	810088	13.2	S	SU TAU	0.9	3			0.256	N	4.5	156	7.0	Y	11	Morris,C.S	C
25.4868	810089	13.3	S	SU TAU	0.7	6			0.32	N	4.8	146	6.2	Y	4	Cook,A.J	D

NOTE A Central condensation magnitude only.

NOTE B Coma diameter approximate. Exceptionally clear.

NOTE C A faint condensation was glimpsed.

NOTE D m2 = 14.5.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
25.092	850013	2.032	5	0.508	1.0 x 0.7	10.00	Kodak Tri-X	400/27	N	C	005/P	1	Arbour,R	A
25.115	850014	2.032	5	0.508	1.0 x 0.7	10.00	Kodak Tri-X	400/27	N	C	006/P	1	Arbour,R	A
25.489	850015	2.79		0.279	0.7 x 0.5	12.00	Kodak 103a-O		N	S	1/N	1	Sanford,J	B

NOTE A Time is only approximate to the nearest minute. (On original report form observer gave photo method as negative projection, which contradicts values he supplied for instrument focal length and FEL. Ed.)

NOTE B Instrument is Celestron C11 Schmidt-Cassegrain. Little fuzzy object looks double - could see faint starlike point and dim fuzzy object in 22" f/8 before this exposure.

DATE: 26 AUG 1985

DATE: 26 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
26.097	810090	15.1		CZ ORI					0.35	N	5.5	160	5.1	Y	1	Fleet,R.W	A
26.100	810091	14.6		CZ ORI	0.3	6			0.35	N	5.5	160	5.1	Y	1	Fleet,R.W	B
26.12	810092	13.1	S	SU TAU	0.5	4			0.406	N	5.6	126	6.5Z	Y	4	Bouma,R.J	
26.12	810093	13.0	S	SU TAU	0.6	1			0.406	N	5.6	126	6.5Z	Y	4	Bus,E.P	C
26.13	810094	13.0	S	SU TAU					0.254	JB	6	90	6.5Z	Y	4	Bouma,R.J	
26.13	810095	13.0	S	SU TAU	0.6	2			0.254	JB	6	90	6.5Z	Y	4	Bus,E.P	

NOTE A Central condensation magnitude only.

NOTE B Averted vision total magnitude.

NOTE C Coma elongated.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)
26.109	830011	0.17	0.356	SC	11	200,400	75		1	Verdenet,M

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gang	Id/Typ	Site	Observer(s)
26.148	850016	0.803	2.1	0.350	2.6 x 1.7	12.00	Kodak 2415		Y	M	1/P	1	Guarro,J

DATE: 27 AUG 1985

DATE: 27 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
27.090	810096	14.8		CZ ORI	0.3	6			0.35	N	5.5	160	5.3	Y	1	Fleet,R.W	A
27.101	810097	15.1		CZ ORI					0.35	N	5.5	160	5.3	Y	1	Fleet,R.W	B
27.13	810098	13.4	S	SUT					0.33	N	5	125	5.7		1	Shanklin,J.D	
27.49	810099	13.5	S	SU TAU					0.20	N	6	244	7	Y	1	Hale,A	C
27.49	810100	13.4	S	SU TAU	0.8	4			0.256	N	4.5	156	7.0	Y	3	Morris,C.S	D
27.95	810101	15.3	S	E	0.5	1			1.02	N	13	185				Chernis,K	

NOTE A Averted vision total magnitude.

NOTE B Central condensation magnitude only.

NOTE C Comet next to 11th magnitude star, which possibly affected magnitude estimate.

NOTE D Comet close to 13th mag. star. North Polar Seq. also used. Coma diameter = 0.75'.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)
27.104	830012	0.17	0.356	SC	11	200,400	60		1	Vardenet,M

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
27.136	850017	0.803	2.1	0.350	2.6 x 1.7	17.00	Kodak 2415		Y	M	2/P	1	Guarro,J

DATE: 28 AUG 1985

DATE: 28 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

Date(UT)	AON#	ml	MM	Chart	Cowa size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
28.08	810102	13.4	S	SU TAU	0.5	3			0.400	N	5	170	6.5	Y	2	Merlin,J.-C	
28.122	810103	14.7		CZ ORI		9			0.35	N	5.5	160	5.2	Y	1	Fleet,R.W	A
28.142	810104	12		U ORI	0.5	3			0.36	SC	11	330	4	Y		Korth,S	
28.35	810105	13.3	S	SU TAU	0.5	5			0.500	N	5	241				Bortle,J.E	

NOTE A Star interfering.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)
28.115	830013	0.13	0.356	SC	11	400	30		1	Verdenet,M

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdag	Id/Typ	Site	Observer(s)	Notes
28.089	850018	1.800	4.5	0.400	1.1 x 0.8	15.00	Kodak 2415		Y	C	16/C	1	Ghione,G	A
28.113	850019	1.800	4.5	0.400	1.1 x 0.8	30.00	Kodak 2415		Y	C	17/C	1	Ghione,G	A

NOTE A (Observer's image identifier includes suffix "A". Ed.)

DATE: 7 SEP 1985

DATE: 7 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

Date(UT)	ACW#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
7.104	810106				0.3				0.250	N	6	187	5.9	Y	1	Guthier,O	A

NOTE A Comet stellar, magnitude 13.5-14.0. Magnitude estimation method "J" used.



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	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
10.101	810107	13.2	B	SA 74	0.2				0.250	N	6	187	5.7	Y	1	Guthier,O	A
10.986	810108	11.5	M	CZ		7			0.31	N	8	62	5.0	Y	1	Hajek,P	
10.99	810109	14.4	B	E	0.6	1			1.02	N	13	185				Chernis,K	

NOTE A Stellar.

DATE: 11 SEP 1985

DATE: 11 SEP 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
11.04	810110	14.7		CZ ORI		9			0.35	N	5.5	160	5.6	Y	1	Fleet,R.W	A
11.118	810111	13.2		SA 74					0.250	N	6	187	5.8	Y	1	Guthier,O	B
11.390	810112	13.3	S	SU TAU	0.4				0.445	N	4.5	167	6.3	Y	3	Morrison,W	
11.43	810113	12.8	S	SU TAU	2.0	1			0.32	N	4	66	6.0	Y	1	Keen,R	C
11.97	810114	14.6	B	E	0.7	1			1.02	N	13	475				Chernis,K	

NOTE A Motion noted over 2 hours.

NOTE B Stellar. Magnitude estimation method "J" used.

NOTE C Moon nearby.

SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)
11.010	830014		0.356	SC	11	200,400	30		1	Verdenet,M

DATE: 12 SEP 1985

DATE: 12 SEP 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
12.04	810115	12.8	S	SU TAU	0.4	3	0.01	270	0.400	N	5	170	6.0	Y	2	Merlin,J.-C	
12.04	810116	12.2	B	E	1.0	5			0.16	N	10	30				Mormil,V	
12.056	810117	14.4		CZ ORI		9			0.35	N	5.5	160	5.6	Y	1	Fleet,R.W	A
12.11	810118	13.5	S	CZ ORI	0.3				0.305	N	5	150	6.2	Y	2	Zanotta,M.V	B
12.156	810119	13.1	M	CZ ORI					0.298	N	5	269	5.5	Y	1	Stott,D	C
12.354	810120	13.6	S	CZ ORI	0.5	5			0.254	N	5.6	120	6.2	Y	1	Knight,S	D
12.36	810121	14.4	V	INES	0.1	5			0.203	N	6	116				Green,D.W.E	E
12.36	810122	13.2	S	SU TAU	0.4				0.317	N	6	170				Bortle,J.E	
12.36	810123	13.3	S	SU TAU	0.5	6			0.500	N	5	241				Bortle,J.E	
12.49	810124	13.2	M	SU TAU	0.7	5			0.256	N	4.5	156	6.5	Y	6	Morris,C.S	F
12.50	810125	13.2	S	SU TAU		4			0.20	N	6	122	6.5	Y	2	Hale,A	
12.615	810126	14.1	S	SU TAU	0.4	0			0.44	N	4.5	225	5.5	Y	1	Fabre,R	
12.97	810127	14.3	B	E		1			1.02	N	13	185				Chernis,K	

NOTE A Coma suspected.

NOTE B Very faint and diffuse. The observation was troubled by the proximity of a field star (magnitude about 13). Coma diameter approximate.

NOTE C Stellar.

NOTE D Stellar nucleus.

NOTE E Coma diameter approximate.

NOTE F North Polar Seq. also used. Coma diameter = 0.68'.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
12.045	830015	0.07	0.40	N	5	170,254	10	6.0	2	Merlin,J.-C	A
12.109	830016	0.27	0.400	N	5	100,222	15	5.5	2	Sarocchi,D	B

NOTE A Jet at approximately PA 180; jet at PA 241, then curved southward. Fan-shaped.

NOTE B The object is very faint and difficult to see but we can understand a shape like I have draw. [sic]

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)
12.081	850020	2.800	10	0.280	0.7 x 0.5	30.00	Kodak Tri-X	400/27	N		16/N	1	Darvann,T.A

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
13.05	810128	12.9				1			0.205	N	6	80	5.5	Y	1	Germann,R	
13.108	810129	14.1		CZ ORI					0.22	N	8	150	5.5	Y	1	Fleet,R.W	A
13.111	810130	14.1		CZ ORI		7			0.35	N	5.5	160	5.5	Y	1	Fleet,R.W	B
13.125	810131	13.5							0.250	N	6	187	5.8	Y	1	Guthrie,O	C
13.13	810132	13.2	S	SU TAU	0.5	6			0.250	N	10	250	6	Y	1	van Loo,P.R	
13.192	810133	12.5	S	CZ ORI	0.5	2			0.20	SC	10	77	6	Y	1	Ward,A	D
13.34	810134	12.8	S	SU TAU	0.9	6			0.500	N	5	157				Bortle,J.E	
13.34	810135	13.1	S	SU TAU	0.8				0.317	N	6	170				Bortle,J.E	
13.361	810136	13.7	S	CZ ORI	0.5	5			0.254	N	5.6	120	6.7	Y	1	Knight,S	E
13.365	810137	14.4	S	CZ ORI					0.254	N	5.6	115	6.7	Y	1	Knight,S	F
13.367	810138	13.3	S	SU TAU	0.5	3			0.445	N	4.5	167	6.6	Y	3	Morrison,W	
13.368	810139	14.0	S			1			0.41	N	4.5	100	6.8	Y	2	Ariail,R.B	
13.397	810140	13.7	B	SU TAU		4			0.508	N	4.5	155	5.8C	Y	9	Troiani,D.M	
13.479	810141	13.5	M			0			0.356	N	5	225		Y	1	Jeffrey,J	G
13.76	810142	13.1	S	AAVSO	0.6	3			0.20	N	5.6	123	6.0	Y	1	Nakamura,A	
13.77	810143	13.6	S		0.1	7			0.26	N	5	263	5.0	Y	1	Kanai,K	
13.94	810144	14.2	B	PA	0.5	1			1.00	N	13	185				Churyumov,K	
13.95	810145	12.9	B	PA		1			0.20	R	15	120				Churyumov,K	
13.99	810146	14.3	B	E	0.6	1			1.02	N	13	475				Chernis,X	

NOTE A At limit.

NOTE B 0.3' coma, averted vision.

NOTE C Magnitude estimation method "J" used.

NOTE D Very faint in 8 inch. Averted vision only. Estimate of coma diameter very approximate. Only seen for about 10 min., using averted vision.

NOTE E Stellar nucleus.

NOTE F Stellar nucleus magnitude.

NOTE G First sighting of Halley. Comet was south of the path shown in the September 1985 issue of Sky and Telescope Halley Notebook (page 222). Comet was faint, estimated magnitude 13.5. Coma was small, round, with no condensation at all seen. No tail seen. Limit 15.0.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
13.355	850021	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)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
14.11	810147	12.6	S	SU TAU	0.6	2			0.254	JB	6	117	6.5	Y	2	Bouma, R.J	
14.11	810148	12.2	S	SU TAU	1	2			0.254	JB	6	72	6.5	Y	2	Bus, E.P	A
14.125	810149	12.5:			1				0.256	N	5.6	85	5.5	Y	1	Gallego, J	B
14.292	810150	13.9:			1.3				0.445	N	4.5	222	5.5C	Y	1	Beach, G	C
14.3	810151	13.1	M		1	5			0.20	N	6	125				O'Meara, S.J	D
14.349	810152	14.0	S			1			0.41	N	4.5	100	6.9	Y	2	Ariail, R.B	
14.36	810153	12.9	S	SU TAU	0.9	6			0.500	N	5	157				Bortle, J.E	E
14.36	810154	13.0	S	SU TAU	0.6	5			0.317	N	6	170				Bortle, J.E	
14.36	810155	13.2	S	INES	0.5	3			0.203	N	6	116				Green, D.W.E	A
14.378	810156	13.5	S	SU TAU	0.4	2			0.445	N	4.5	167	6.3	Y	3	Morrison, W	
14.426	810157	13.8	B	SU TAU		4			0.438	N	4.5	178	5.8C	Y	9	Troiani, D.M	
14.45	810158	12.6	S	SU TAU	2.0	3			0.32	N	4	66	7.0	Y	1	Keen, R	
14.47	810159	12.8	M	SU TAU	0.6	6			0.406	N	4.5	183	7.0	Y	12	Morris, C.S	
14.479	810160	13.5	M			0			0.356	N	5	225		Y	1	Jeffrey, J	F
14.48	810161	13.0	S	SU TAU					0.20	N	6	244	6.5	Y	11	Hale, A	
14.49	810162	12.9	M	SU TAU	0.6	5			0.47	N	3.9	204	7.0	Y	12	Morris, C.S	
14.49	810163	12.9	M	SU TAU	0.6	6			0.256	N	4.5	156	7.0	Y	12	Morris, C.S	
14.583	810164	14.0	S		0.4	1			0.44	N	4.5	225	5.5	Y	1	Fabre, R	
14.691	810165	13.0:			0.5	5			0.20	N	6.3	140	6.8	Y	1	Lovejoy, T	
14.94	810166	14.3	B	PA					1.00	N	13	185				Churyumov, K	
14.95	810167	13.3	B	PA	1.0	3			0.20	R	15	120				Churyumov, K	
14.97	810168	14.0	B	E	0.7	3			1.02	N	13	475				Chernis, K	

NOTE A Coma diameter approximate.

NOTE B Very faint. Coma diameter approximate.

NOTE C Very faint - featureless. Magnitude uncertain.

NOTE D Eastward fan in inner coma.

NOTE E Almost stellar nuc. of 14.5.

NOTE F First sighting of Halley. Comet was south of the path shown in the September issue of Sky and Telescope Halley Notebook (page 222). Comet was faint, estimated magnitude 13.5. Coma was small, round, with no condensation at all seen. No tail seen. Limit 15.0.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
14.125	830017		0.256	N	5.6	85		5.5	1	Gallego, J	A
14.408	830018	0.2	0.356	SC	11	310	14	5.9	1	Cuthill, D.D	B

NOTE A Field 1 deg. Very stellar. In the vision's limit. [sic] (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

NOTE B First obs. of Halley. The coma is very round and slightly condensed at its center. Coma diam. is about 1.5' and a total vis. mag. of 12.5.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
14.304	850022	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak 2415		Y	S	217/P	1	Sabia, J.D	A
14.355	850023	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	S	2/P	1	Dilsizian, R	B

NOTE A Instrument is Schmidt camera.

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

DATE: 15 SEP 1985

DATE: 15 SEP 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)
15.02	810169	12.4	S	SU TAU	1.0	3	0.01	271	0.400	N	5	170	6.5	Y	2	Merlin,J.-C
15.36	810170	12.7	S	SU TAU	0.8	6			0.500	N	5	157				Bortle,J.E
15.36	810171	12.8	S	SU TAU	0.6	6			0.317	N	6	170				Bortle,J.E
15.365	810172	12.8	M	CZ ORI	1.3	1			0.254	N	4.5	163	6.5	Y	4	DeYoung,J.A
15.427	810173	12.1	S		2				0.406	N	4.5	520	5.8	Y	2	Glassett,W
15.5264	810174	12.7	S	U ORI	1.0	3			0.254	N	3.8	64	5.8		1	Machholz,D
15.97	810175	14.1	B	E		3			1.02	N	13	185				Charnis,K

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
15.017	830019	0.11	0.40	N	5	170	10	6.5	2	Merlin,J.-C	A
15.089	830020					200,400	15		1	Verdenet,M	B

NOTE A Jet at PA 209, diffuse, tail at PA 271. Bright central point mag. about 15. Central condensation diameter 10 to 15".  
 NOTE B (Drawings at 200x (0.17'/mm) and 400x submitted. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
15.339	850024	0.63	1.8	0.35	3.3 x 2.2	4.50	103a-F		N		4/P	2	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)	ACN#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
16.05	810176	12	:	B E	1.0	5			0.16	N	10	30				Mormil,V	
16.111	810177	14.5		CZ ORI					0.35	N	5.5	160	5.4	Y	1	Fleet,R.W	A
16.115	810178	13.7		M CZ ORI		5			0.35	N	5.5	160	5.4	Y	1	Fleet,R.W	B
16.35	810179	12.6		S SU TAU	0.9	6			0.500	N	5	157				Bortle,J.E	C
16.35	810180	12.7		S SU TAU	0.6	2			0.317	N	6	170				Bortle,J.E	
16.364	810181	13.7		S SU TAU	0.5				0.445	N	4.5	167	6.3	Y	3	Morrison,W	D
16.42	810182	12.5		B	0.7	2			0.335	N	4.5	216	5.0	Y		Kronk,G	
16.49	810183	12.8		M SU TAU	0.6	6			0.256	N	4.5	156	7.0	Y	11	Morris,C.S	E
16.5139	810184	13.2		S SU TAU	1.5	6			0.32	N	4.8	146	6.5	Y	2	Cook,A.J	F
16.94	810185	14.1		B PA					1.00	N	13	185				Churyumov,K	
16.95	810186	12.9		B PA		3			0.20	R	15	120				Churyumov,K	
16.97	810187	14.0		B E		3			1.02	N	13	185				Chernis,K	

NOTE A Central condensation magnitude only.

NOTE B 0.25' coma; averted vision.

NOTE C Stellar/almost stellar nuc. of 14.5.

NOTE D CZ Ori also used for comparison stars.

NOTE E A stellar condensation was noted (mag. = 13.7). Coma diameter = 0.61'.

NOTE F 20 mph wind.

DATE: 17 SEP 1985

DATE: 17 SEP 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
17.05	810188	12	B	E	2				0.16	N	10	30				Mormil,V	A
17.05	810189	13.1	S	CZ ORI	1.8	3			0.305	N	5	94	6.4	Y	3	Zanotta,M.V	B
17.090	810190	13.5	M	CZ ORI		5			0.35	N	5.5	160	5.6	Y	1	Fleet,R.W	C
17.115	810191	14.2		CZ ORI					0.35	N	5.5	160	5.6	Y	1	Fleet,R.W	D
17.3	810192	13.0	M		1.2	5	270		0.20	N	6	125				O'Meara,S.J	E
17.33	810193	12.8	S	LNES	1.2	3			0.203	N	6	116				Green,D.W.E	F
17.354	810194	13.6	S	CZ ORI	1.0	4			0.254	N	5.6	120	6.7	Y	1	Knight,S	G
17.354	810195	14.4		CZ ORI					0.254	N	5.6	120	6.7	Y	1	Knight,S	A
17.37	810196	12.5	M	LNES	1.2	3			0.203	N	6	116				Green,D.W.E	B
17.37	810197	12.5	S	SU TAU	0.8	5			0.500	N	5	157				Bortle,J.E	A
17.37	810198	12.6	S	LNES	1.2	3			0.203	N	6	116				Green,D.W.E	A
17.37	810199	12.6	S	SU TAU	0.6	3			0.317	N	6	170				Bortle,J.E	
17.49	810200	12.5	S	SU TAU					0.20	N	6	122	7	Y	28	Hale,A	
17.50	810201	12.3	M	SU TAU	0.8	5			0.256	N	4.5	156	7.0	Y	6	Morris,C.S	I
17.5201	810202	12.5	S	U ORI	1.0	2			0.254	N	3.8	64	6.2		1	Machholz,D	
17.95	810203	14.0	B	PA	0.2	6			1.00	N	13	185				Churyumov,K	
17.96	810204	13.9	B	PA	0.1	5			1.00	N	13	185				Churyumov,K	

NOTE A Coma diameter approximate.

NOTE B Disk-like central condensation. Probable coma extension on PA = 350 deg.

NOTE C 0.4' coma, averted vision.

NOTE D Central condensation magnitude only.

NOTE E Thin, tail length approximately 15 arc sec.

NOTE F Stellar nucleus.

NOTE G Stellar nucleus magnitude.

NOTE H Almost stellar nuc. of 14th mag.

NOTE I Coma was slightly elongated toward PA 200:. At 45x, the comet appeared almost stellar - only the condensation was visible.  
Coma diameter = 0.75'.



DATE: 18 SEP 1985

DATE: 18 SEP 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
18.069	810205	14.4		CZ ORI					0.35	N	5.5	160	5.6	Y	1	Fleet,R.W	A
18.073	810206	13.4	M	CZ ORI	0.2	6			0.35	N	5.5	160	5.6	Y	1	Fleet,R.W	B
18.08	810207	12.5	S	SU TAU	0.5	1			0.203	C	10	80	6	Y	3	Comello,G	C
18.097	810208	13.8		CZ ORI					0.22	N	8	150	5.6	Y	1	Fleet,R.W	D
18.10	810209	12.4	S	SU TAU	0.8	1			0.254	JB	6	90	6.5	Y	2	Bouma,R.J	
18.13	810210	13.0	S	CZ ORI	2.0	2			0.305	N	5	60	6.7	Y	2	Zanotta,M.V	E
18.43	810211	12.3	B		0.9	2			0.335	N	4.5	216	4.5	Y		Kronk,G	

NOTE A Central condensation magnitude only.

NOTE B 0.3' coma, averted vision.

NOTE C Coma diameter approximate.

NOTE D Central condensation only.

NOTE E Perfect sky. 300x: small (nearly star-like) central condensation of magnitude = 14.5, smaller than on 17th.

SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
18.087	830021	0.16	0.400	N	5	100,222	50	5.4	2	Sarocchi,D	A
18.115	830022	0.18					30		1	Verdenet,M	

NOTE A Diameter >20".

DATE: 19 SEP 1985

DATE: 19 SEP 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
19.052	810212	13.6	M	CZ ORI	0.2	6			0.35	N	5.5	160	5.8	Y	1	Fleet,R.W	A
19.056	810213	14.3		CZ ORI					0.35	N	5.5	160	5.8	Y	1	Fleet,R.W	B
19.069	810214	13.5	M	CZ ORI		6			0.22	N	8	150	5.8	Y	1	Fleet,R.W	C
19.09	810215	12.4	S	SU TAU	0.4	8			0.150	R	8	150	6	C	Y	1	Aerts,L
19.12	810216	12.5	S	CZ ORI	1	7			0.250	N	10	147	6	Y	1	van Loo,F.R	
19.127	810217	13.3		SA 74					0.250	N	6	187	5.8	Y	1	Guthier,O	
19.383	810218	13.7	S	SU TAU	0.6	2			0.445	N	4.5	167	6.3	Y	3	Morrison,W	
19.44	810219	12.5	S	SU TAU	2.0	2			0.32	N	4	66	6.5	Y	1	Keen,R	
19.573	810220	13.9	S		0.4	1			0.44	N	4.5	225	5.5	Y	1	Fabre,R	
19.89	810221	13.8	B	PA	0.1	5			1.00	N	13	185				Churyumov,I	
19.92	810222	12.5	B	PA					0.20	R	15	120				Churyumov,I	
19.95	810223	13.7	B	PA					1.00	N	13	185				Churyumov,I	

NOTE A 0.6' coma, averted vision.

NOTE B Central condensation magnitude only.

NOTE C 0.4' coma, averted vision.

NOTE D Magnitude estimation method "J" used.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
19.075	830023		0.400	N	5	100,166,222	35	5.3	2	Sarocchi,D	A
19.390	830024		0.406	N	4.8	217	14	6.6	1	Troiani,D.M	B

NOTE A Seem to see a faint tail but long. It across the star at its east. [sic]

NOTE B Transparency (1-5): 5. DC = 4.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
19.467	850025	1.524	6	0.254	1.4 x 0.9	45.00	Kodak 2415		Y	O	67/C	1	Snyder,L.F	
19.497	850026	2.306	5	0.45	0.9 x 0.6	22.00	Kodak Tri-X		N	M	2/S	1	Webb,R	A

NOTE A Inner coma and starlike central condensation visible on all original negatives. Film pushed processed slightly. (Observer indicated C-type guiding as well as M. Ed.)

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
20.049	810224	13.6	M	CZ ORI	0.3	6			0.35	N	5.5	160	5.8	Y	1	Fleet,R.W	A
20.052	810225	14.2		CZ ORI					0.35	N	5.5	160	5.8	Y	1	Fleet,R.W	B
20.076	810226	13.0	S	SU TAU	0.4	6			0.205	N	4.5	126	6.0	Y	1	Hasubick,W	
20.111	810227	13.6	M	CZ ORI					0.22	N	8	150	5.7	Y	1	Fleet,R.W	
20.47	810228	12.4	M	SU TAU	0.8	4			0.256	N	4.5	156	6.5	Y	6	Morris,C.S	C
20.75	810229	12.8	S	AAVSO	1.1	2			0.20	N	5.6	89	6.5	Y	1	Nakamura,A	
20.89	810230	13.8	B	PA	0.3	3			1.00	N	13	185				Churyumov,K	
20.94	810231	13.9	B	PA					1.00	N	13	185				Churyumov,K	
20.97	810232	12.7	B	PA					0.20	R	15	120				Churyumov,K	

NOTE A 0.6' coma, averted vision.

NOTE B Central condensation magnitude only.

NOTE C Coma diameter = 0.75'.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
20.083	830025		0.356	SC	11	200,400			1	Verdenet,M	A
20.403	830026		0.406	N	4.8	217	22	6.6	1	Troiani,D.M	B

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Drawings at 200x (0.18'/mm) and 400x submitted. Ed.)

NOTE B Condensation of coma = 4. No tail.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
20.118	850027	0.420	1.7	0.250	4.9 x 3.3	40.00	Kodak 2415		N	S	1/P	1	Bruhni,W	A

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

DATE: 21 SEP 1985

DATE: 21 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
21.059	810233	13.6	M	CZ ORI	0.3	6			0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	A
21.066	810234	13.5	M	CZ ORI	0.3	5			0.35	N	5.5	160	5.8	Y	1	Fleet,R.W	A
21.076	810235	13.6	M	CZ ORI					0.22	N	8	150	5.8	Y	1	Fleet,R.W	B
21.08	810236	11.9	S	SU TAU	1.2	3	0.02	270	0.400	N	5	170	6.5	Y	2	Merlin,J.-C	
21.37	810237	12.3	S	LNES	0.8	1			0.229	R	12	261				Green,D.W.E	C
21.394	810238	13.4	B	SU TAU		4			0.254	N	6	147	6.6	Y	1	Troiani,D.M	
21.45	810239	12.2	S	SU TAU					0.20	N	6	122	6	Y	30	Hale,A	
21.50	810240	12.2	M	SU TAU	0.8	4			0.256	N	4.5	156	6.5	Y	6	Morris,C.S	D
21.5021	810241	12.2	S	U ORI	1.2	3			0.254	N	3.8	64	6.0		1	Machholz,D	
21.51	810242	12.8	S	SU TAU		8			0.256	N	4.5	45	6.5	Y	6	Morris,C.S	
21.51	810243	12.5	M	SU TAU	0.4	7			0.256	N	4.5	67	6.5	Y	6	Morris,C.S	E
21.51	810244	12.3	S	SU TAU	0.5	3			0.256	N	4.5	222	6.5	Y	6	Morris,C.S	
21.52	810245	12.3	M	SU TAU	0.6	6			0.256	N	4.5	111	6.5	Y	6	Morris,C.S	
21.70	810246	13.3	S	CZ ORI					0.317	N	5	104		Y		Jones,A	

NOTE A 0.5' coma, averted vision.

NOTE B 0.4' coma, averted vision.

NOTE C Coma diameter approximate.

NOTE D Coma diameter = 0.75'.

NOTE E Coma diameter = 0.38'.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
21.068	830027	0.09	0.40	N	5	170	15	6.5	2	Merlin,J.-C	A

NOTE A Tail at PA 269, diffuse extension westward. Slight condensation diameter about 25".

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
21.135	850028	0.803	2.1	0.350	2.6 x 1.7	8.00	Kodak 103a-F		N		3/P	1	Guarro,J	
21.317	850029	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak 2415		Y	S	223/P	1	Sabia,J.D	A
21.477	850030	0.605	1.7		3.4 x 2.3	24.00	Ektachr. Pro	200/	N	S	1/P	1	Levy,A	B

NOTE A Instrument is Schmidt camera.

NOTE B Weather conditions: some clouds and fog. Venus was high on the horizon and very bright for longer exposures, also almost dawn. Photographic magnitude: 12.50.

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
22.04	810247	11.6	S	SU TAU	1.5	3	0.03	270	0.400	N	5	81	6.5	Y	2	Merlin,J.-C	
22.080	810248	12.7	M	CZ ORI	0.5	5			0.35	N	5.5	100	5.9	Y	1	Fleet,R.W	A
22.083	810249	12.7	M	CZ ORI	0.4	5			0.35	N	5.5	160	5.9	Y	1	Fleet,R.W	B
22.097	810250	12.7	M	CZ ORI	0.3	4			0.22	N	8	90	5.9	Y	1	Fleet,R.W	C
22.14	810251	12.9	B	SU TAU	1.0	2			0.203	SC	10	80	6.3	Y	2	Granslo,B.H	
22.28	810252				1.3	5			0.406	N	5	80	6	Y	1	Simmons,K	
22.28	810253				1.6	4			0.406	N	5	80	6.0	Y	1	Simmons,W	
22.4236	810254	12.5	M	SU TAU	1.2	6			0.32	N	4.8	146	6.6	Y	3	Cook,A.J	D
22.47	810255	12.2	M	SU TAU	0.9	4			0.256	N	4.5	156	6.5	Y	6	Morris,C.S	
22.4958	810256	12.2	S	U ORI	1.2	2			0.254	N	3.8	32	6.0		1	Machholz,D	E
22.500	810257	13.7	S		0.5	3			0.33	N	4.5	175	6.5	Y	4	Fabre,R	
22.50	810258	12.3	M	SU TAU	0.8	4			0.125	SC	10.0	122	6.5	Y	6	Morris,C.S	F
22.587	810259	12.5	S		1.5	2			0.15	N	6	100	6.2	Y	1	Krisciunas,K	G
22.87	810260	13.6	B	PA					1.00	N	13	185				Churyumov,K	
22.91	810261	13.0	B	PA					0.20	R	15	120				Churyumov,K	
22.94	810262	13.8	B	PA					1.00	N	13	185				Churyumov,K	

NOTE A 1.3' coma, averted vision.

NOTE B 1.0' coma, averted vision.

NOTE C 0.8' coma, averted vision.

NOTE D m2 = 13.5.

NOTE E In a 16" f/5 reflector at about 120x the comet appeared more condensed (DC = 7) and larger (about 2.0').

NOTE F Coma diameter = 0.76".

NOTE G Magnitude accuracy +/-0.5.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
22.038	830028	0.05	0.40	N	5	81,254	10	6.5	2	Merlin,J.-C	A
22.115	830029	0.08	0.356	SC	11	200			1	Verdenet,M	B

NOTE A Jet at PA 93, jet at PA 155, pretty large and diffuse; jet at PA 281. Tail at PA 257: axis of diffuse feature.

NOTE B (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
22.024	850031	1.820	5.2	0.350	1.1 x 0.8	10.00	3M CRT-4		Y	M	1/C	2	Cimatti,A	
22.125	850032	1.820	5.2	0.350	1.1 x 0.8	30.00	Kodak 103a-F		N	M	1/C	2	Cimatti,A	A

NOTE A Large format film used.

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)	Notes
23.083	810263	12.6	M	CZ ORI	0.5	6			0.35	N	5.5	100	5.9	Y	1	Fleet,R.W	A
23.090	810264	12.8	M	CZ ORI	0.6	6			0.35	N	5.5	160	5.9	Y	1	Fleet,R.W	B
23.101	810265	12.8	M	CZ ORI	0.3	6			0.22	N	8	150	5.9	Y	1	Fleet,R.W	C
23.139	810266	13.5		SA 74	0.5				0.250	N	6	187	5.8	Y	1	Guthier,O	D
23.42	810267	12.1	M	SU TAU	0.9	4			0.256	N	4.5	156	6.5	Y	6	Morris,C.S	
23.528	810268	13.5	S		0.8	3			0.44	N	4.5	225	5.5	Y	1	Fabre,R	
23.86	810269	12.4	S	CN ORI	0.7	3			0.317	N	5	149	6.0	Y		Pearce,A	E

NOTE A 1.5' coma, averted vision.

NOTE B 1.0' coma, averted vision.

NOTE C 0.9' coma, averted vision.

NOTE D Diffuse! Magnitude estimation method "J" used.

NOTE E My observation of comet P/Halley used some comparison stars from the field of the 2 Cam star CN Ori. The magnitudes are photovisual. 1. Mag. 12.2 RA 5h 52m 40s, -5 deg 33.0 arc min. 2. Mag. 12.6 RA 5h 47m 15s, -5 deg 31.5 arc min.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
23.152	850033	0.803	2.1	0.350	2.6 x 1.7	7.50	Kodak 103a-F		N		4/P	1	Guarro,J	
23.156	850034	3.910	11	0.350	0.5 x 0.4	60.00	Fujichrome	400/	Y	S	15/T	3	Genebriera,J	
23.170	850035	0.803	2.1	0.350	2.6 x 1.7	7.00	Kodak 103a-F		N		5/P	1	Guarro,J	
23.722	850036	1.9	6	0.318	1.1 x 0.7	40.00	Ilford HP5		N		1/P	1	Barclay,J	A

NOTE A (Photographer rated film at ISO 5000. Ed.)

DATE: 24 SEP 1985

DATE: 24 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
24.05	810270	11.5:	B	E	2.0				0.16	N	10	30				Mormil,V	
24.05	810271														1	Verdenet,M	A
24.06	810272	11.6	S	SU TAU	1.0	3			0.400	N	5	170	6.0	Y	2	Merlin,J.-C	
24.076	810273	12.5:			1	7			0.13	R	10	50		Y	1	Morrisby,A	B
24.104	810274	14.9		CZ ORI	0.3	5			0.35	N	5.5	160	5.8	Y	1	Fleet,R.W	C
24.16	810275	12.2	S	SU TAU	1	7			0.250	N	10	147	5.5T	Y	1	van Loo,F.R	

NOTE A Mixed with a bright star which seems nebulous.

NOTE B Coma diameter uncertain. Seeing and transparency good.

NOTE C Nucleus magnitude. 0.5' coma, averted vision; stars interfere.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
24.052	830030	0.09	0.356	SC	11	400			1	Verdenet,M	A
24.087	830031	0.03	0.40	N	5	170,407	10	6.0	2	Merlin,J.-C	B

NOTE A (Duration not indicated. Time of observation is assumed to be approximate start time. Ed.)

NOTE B Jet at PA 36, jet at PA 304, jet at PA 356; (all) 3 jets pretty faint. Star mag. 12.5 nearly occulted by nucleus at 0100 UT; at about 11" south of nucleus at 0200 UT.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
24.719	850037	1.9	6	0.318	1.1 x 0.7	30.00	Ilford HP5		N		2/P	1	Barclay,J	A

NOTE A (Photographer rated film at ISO 5000. Ed.)

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	810276	11.5	B	E	2.0			0.16	N	10	30				Mormil,V	
25.083	810277	12.5	M	CZ ORI	0.4	6		0.35	N	5.5	160	5.8	Y	1	Fleet,R.W	A
25.087	810278	14.0		CZ ORI				0.35	N	5.5	160	5.8	Y	1	Fleet,R.W	B
25.101	810279	12.6	M	CZ ORI	0.5	6		0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	C
25.11	810280	12.6	S	SU TAU	1.3	4		0.305	N	5	94	6.2	Y	2	Zanotta,M.V	D
25.37	810281	11.7	S	SU TAU	1.5	5		0.317	N	6	88				Bortle,J.E	E
25.37	810282				1.2	6		0.500	N	5	96				Bortle,J.E	F
25.381	810283	12.9	S	SU TAU	0.6	4		0.445	N	4.5	167	6.7	Y	3	Morrison,W	G
25.4555	810284	12.0	S	U ORI	1.2	4		0.254	N	3.8	64	5.8			Machholz,D	
25.74	810285	12.3	M		1			0.16	N	6.3	80	6	Y	1	Mitsuma,S	
25.77	810286	12.6	S		0.5	1		0.16	N	6.3	95	5.5	Y	2	Hiraga,M	
25.81	810287	12.7	B		0.5	6		0.26	N	5	146	5.0T	Y	1	Kanai,K	
25.81	810288	12.7	S		0.5	6		0.26	N	5	146	5.0T	Y	1	Kanai,K	

NOTE A 1.1' coma, averted vision.

NOTE B Central condensation magnitude only.

NOTE C 1.5' coma, averted vision.

NOTE D Haze sky.

NOTE E Near stellar nuc. of about 13th mag.

NOTE F Cond. (0.3') mag. 13.0, nuc. about 14.5.

NOTE G CZ Ori also used for comparison stars.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
25.115	830032		0.356	SC	11	400			1	Verdenet,M	A

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
25.125	850038	0.760	4	0.19	2.7 x 1.8	15.00	Kodak 2415		Y	S	9/N	1	Mikuz,H



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)	Notes
26.097	810289	12.4	M	CZ ORI	0.5	6			0.35	N	5.5	100	5.4	Y	1	Fleet,R.W	A
26.10	810290	11.8	S	SU TAU	1.2	2			0.254	JB	6	73	6.5	Y	2	Bouma,R.J	
26.104	810291	12.3	M	CZ ORI	0.5	6			0.35	N	5.5	160	5.4	Y	1	Fleet,R.W	B
26.108	810292	14.3		CZ ORI					0.35	N	5.5	160	5.4	Y	1	Fleet,R.W	C
26.11	810293	11.7	S	SU TAU	1	3			0.203	C	10	80	6	Y	3	Comello,G	D
26.122	810294	13.0	S		1	2			0.250	N	6	55	6.0	N	1	Lunde,R	E
26.125	810295	13.0		SA 74	0.7				0.250	N	6	187	5.9	Y	1	Guthier,O	F
26.13	810296	12.4			0.5	3			0.203	SC	10	160	5.7	Y	1	Luthen,H	
26.3	810297	12.0	M		1.5	6	0.01	314	0.23	R	12	240				O'Meara,S.J	G
26.33	810298	11.9	S	INES	1.6	4			0.229	R	12	261				Green,D.W.E	D
26.49	810299	11.8	M	SU TAU	1.1	4			0.256	N	4.5	156	6.0	Y	6	Morris,C.S	
26.49	810300	11.4	M	SU TAU	2.1	3			0.256	N	4.5	67	6.0	Y	6	Morris,C.S	H
26.618	810301	13.4	S		1	4			0.44	N	4.5	225	5.5	Y	1	Fabre,R	
26.81	810302	12.5			2	2			0.31	N	5.7	55	5.0	Y	2	Suzuki,K	

NOTE A 1.5' coma, averted vision.

NOTE B 1.2' coma, averted vision.

NOTE C Central condensation magnitude only.

NOTE D Coma diameter approximate.

NOTE E Coma diameter is upper limit.

NOTE F Diffuse. Magnitude estimation method "J" used.

NOTE G Jets in PA 40, 15 arc sec., and PA 130, 10 arc sec. Tail length approximately 20 arc sec.

NOTE H Coma is elongated toward the west.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
26.156	810033		0.356	SC	11	400			1	Verdenet,M	A

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
26.147	850039	1.400		0.28	1.5 x 1.0	10.00	Kodak Tri-X	400/27	N		19/N	1	Darvann,T.A	A
26.509	850040	2.306	5	0.45	0.9 x 0.6	35.00	Kodak Tri-X		N	M	3/S	1	Webb,R	B

NOTE A (Instrument FL of 2.800 and separately specified effective FL of approximately 1.400 don't match. Ed.)

NOTE B Inner coma and starlike central condensation visible on all original negatives. Film pushed processed slightly. (Observer indicated C-type guiding as well as M. Ed.)

DATE: 27 SEP 1985

DATE: 27 SEP 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
27.121	810303	12.7	B		0.5	4			0.400	C	15	120	6.0	Y	3	Zische,E	
27.146	810304	12.8	B	SA 74	0.9	2			0.250	N	6	187	6.0	Y	1	Guthier,O	A
27.15	810305	11.3	S	SU TAU	1.6	2			0.100	N	9	23	6.5	Y	1	van de Weg,R.L.W	B
27.42	810306	11.7	B		1.0	2			0.335	N	4.5	216	5.0	Y		Kronk,G	

NOTE A Diffuse central condensation.

NOTE B According to DCS reference stars: 11.3; according to IHW: 11.5.

SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
27.156	830034		0.356	SC	11	200,400			1	Vardenet,M	A

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Drawings supplied at 200x and 400x. 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)	Notes	
28.35	810307	12.0	S	LNES	1.0	5			0.229	R	12	261				Green, D.W.E	A	
28.389	810308	13.1	S	SU TAU	0.4				0.445	N	4.5	167	5	M	N	3	Morrison, W	B

NOTE A Coma diameter approximate.

NOTE B CZ Ori also used for comparison stars. Coma diameter approximate. Full moon prevents dark adaption.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)
28.141	830035	0.10	0.36	SC	11	330	7	4	1	Korth, S

DATE: 29 SEP 1985

DATE: 29 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
29.167	810309	11.6	M	AAVSO					0.23	R	12	120				O'Nears, S.J	A
29.34	810310	11.7	S	LNES	1.7	4			0.229	R	12	261				Green, D.W.E	B
29.38	810311	11.8	M	LNES	1.7	4			0.229	R	12	261				Green, D.W.E	B

NOTE A Nuclear mag. 13.9.

NOTE B Coma diameter approximate.

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)	Notes
30.194	810312	11.8	M	AAVSO					0.23	R	12	120				O'Meara, S.J	
30.36	810313	11.7	S	LNES	1.3	3			0.229	R	12	261				Green, D.W.E	A

NOTE A Coma diameter approximate.

DATE: 1 OCT 1985

DATE: 1 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
1.177	810314	12.5:		U ORI	0.5				0.36	SC	11	330	4 M	Y		Korth,S	A

NOTE A Bright moon disturbed observations.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
1.175	830036	0.10	0.36	SC	11	330	5 4	1	Korth,S		A

NOTE A Bright moon made the observation very difficult.

DATE: 5 OCT 1985

DATE: 5 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Llm	DA	Site	Observer(s)	Notes
5.167	810315	12.1	M	CZ ORI					0.298	N	5	65	5.7	Y	1	Stott,D	A

NOTE A Stellar.

DATE: 6 OCT 1985

DATE: 6 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	
6.36	810316	11.9:	S	LNES	1.1	5			0.229	R	12	261				Green,D.W.E	A	
6.74	810317	12.3	M		1.1	1			0.16	N	6.3	80	5	M	Y	1	Mitsuma,S	

NOTE A Coma diameter approximate.



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
7.36	810318	10.9	S	LNES	1.5	5			0.229	R	12	261				Green,D.W.E	A
7.363	810319	12.2	S	SU TAU	0.7	4			0.445	N	4.5	167	5.7M	N	3	Morrison,W	B
7.39	810320	11.0	S	SU TAU	1.1				0.317	N	6	88				Bortle,J.E	C
7.39	810321	10.8	M	SU TAU	1.6	4			0.256	N	4.5	67	5.5M	Y	6	Morris,C.S	
7.39	810322	11.4	M	SU TAU					0.256	N	4.5	156	5.5M	Y	6	Morris,C.S	
7.646	810323	13	S						0.10	N	10	111	5.0C	Y	1	Kato,T	D
7.67	810324	12.4	S	CZ ORI					0.317	N	5	86		Y		Jones,A	
7.86	810325	10.9	S	SU TAUC	1.5	5			0.41	N	4.2	86	6.1	Y	2	Clark,M.L	
7.962	810326	11.9	M	CZ ORI	0.4	6			0.35	N	5.5	100	5.4	Y	1	Fleet,R.W	E

NOTE A Coma diameter approximate.

NOTE B CZ Ori also used for comparison stars. Moon 16 deg. from comet.

NOTE C Moonlight.

NOTE D Central condensation magnitude.

NOTE E 1.3' coma, averted vision.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
7.184	830037	1.18	0.229	R	10	100	60	5.5	1	Nowak,G.T	A
7.927	830038		0.356	SC	11	200,400			1	Verdenet,M	B

NOTE A The comet had a star like nucleus and a ghostly coma developing around it. There was no tail or jets seen. Motion was detected in 1 (one) hour. Nucleus size was 4 seconds of arc, coma was 18 seconds of arc. Coma was also seen in 6" f/5.2 Newtonian reflector at 50x.

NOTE B (Duration not indicated. Time of observation is assumed to be start time. Drawings at 200x (0.25'/mm) and 400x submitted. Ed.)

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
8.35	810327	11.0	S	SU TAU	1.2	5			0.317	N	6	88				Bortle, J.E	A
8.37	810328	10.5	M	LNES	1.5	6			0.229	R	12	261				Green, D.W.E	B
8.37	810329	10.7	S	LNES	1.5	6			0.229	R	12	261				Green, D.W.E	B
8.48	810330	11.4	M	SU TAU		5			0.20	N	6	122	6			Hale, A	
8.625	810331	12	S		1				0.20	SC	10	80	5.0C	Y	26	Kato, T	
8.63	810332	12.5			2	1			0.31	N	5.7	55	4.0M	Y	2	Suzuki, X	
8.64	810333	12.5			2	3			0.23	N	4.4	40	6.0	Y	1	Washi, S	C
8.75	810334	12.3	S	AAVSO	1.3	5			0.20	N	5.6	89	5.5M	Y	5	Nakamura, A	
8.924	810335	11.8	S		0.8	3			0.20	SC	10	111	5.5	Y	1	Bremseth, P.-J	D
8.976	810336	12.6		CZ ORI					0.35	N	5.5	100	5.7	Y	1	Fleet, R.W	E
8.979	810337	12.1	M	CZ ORI	0.8	6			0.35	N	5.5	100	5.7	Y	1	Fleet, R.W	F
8.983	810338	13.0		CZ ORI					0.35	N	5.5	160	5.7	Y	1	Fleet, R.W	G
8.986	810339	12.2	M	CZ ORI	0.6	6			0.35	N	5.5	160	5.7	Y	1	Fleet, R.W	H
8.990	810340	11.3	S	SU TAU	1.5	3			0.152	N	5	44	5.8	Y	2	Moeller, M	I

NOTE A Moonlight.

NOTE B Coma diameter approximate.

NOTE C Instrument is Wright-Schmidt. (Observer indicated "Y" method. Ed.)

NOTE D Central condensation mag. 12.5.

NOTE E Central condensation magnitude, stellar.

NOTE F 2.0' coma, averted vision.

NOTE G Nucleus magnitude.

NOTE H 1.6' coma, averted vision.

NOTE I Moon.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
8.318	830039	0.13	0.44	N	4.5	80,222,333	15	4.2	1	Falvo, S.A	A
8.368	830040	0.22	0.356	SC	11		121	5.7	1	Cuthill, D.D	B
8.401	830041	0.13	0.44	N	4.5	80,222,333	15	4.2	1	Falvo, S.A	C
8.922	830042	0.23	0.20	SC	10	111	25	5.5	3	Bremseth, P.-J	D

NOTE A Comet approx. 13 mag. using AAVSO SU Tau star field comparison chart. The visual appearance of this comet was that of a soft patch of light, with a spherical shape. No central condensation was noted at this time.

NOTE B 2" e.p. 40' field. Coma diameter has increased to at least 4'. Coma is still symmetrical. Inner coma is much stronger, but without anything I would call "stellar" in appearance.

NOTE C Note orbital motion since first drawing was made 2 hours ago.

NOTE D With averted vision, I could see the small central condensation. The small cloud of coma was weak.

DATE: 9 OCT 1985

DATE: 9 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
9.007	810341	12.1	M	CZ ORI	0.4	5			0.22	N	8	90	5.7	Y	1	Fleet,R.W	A
9.083	810342	12.5:				1			0.13	R	10	50		Y	1	Morrisby,A	
9.090	810343	11.9:	S	U ORI	0.8	2			0.203	SC	10	80	4	Y	1	Tanti,T	B
9.155	810344	11.0	B		2.0	4			0.200	N	7.2	36	5.0M	Y	1	Lipski,P	C
9.260	810345	11.4:	S	CZ ORI	1	0			0.25	N	5.6	56	6 M	Y	1	Jordan,J	D
9.62	810346	12.0			2	1			0.31	N	5.7	55	5.0	Y	2	Suzuki,K	
9.969	810347	11.4	S		0.7	3			0.20	SC	10	111	6.0	Y	1	Bremseth,P.-J	E
9.986	810348	11.5	M	CZ ORI	0.8	6			0.35	N	5.5	100	5.4	Y	1	Fleet,R.W	F
9.990	810349	12.3							0.35	N	5.5	100	5.4	Y	1	Fleet,R.W	G
9.992	810350	11.0	S	U ORI		0			0.25	N	6	120		Y	1	Gainsford,M.J	

NOTE A 1.8' coma, averted vision.

NOTE B Seeing good, transparency good. Wind. Moon.

NOTE C Small nucleus.

NOTE D Observation made during and shortly after moonrise, thus making estimate somewhat uncertain.

NOTE E No centr. condens.

NOTE F 1.9' coma, averted vision, between clouds.

NOTE G Central condensation magnitude.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
9.404	830043		0.203	SC	10	81			1	Lohvinenko,T.W	A
9.969	830044	0.23	0.20	SC	10	111	10 6		3	Bremseth,P.-J	B

NOTE A Close examination of this dim object shows no visible features and it is hard to say whether or not the comet's fuzzy coma is really visible. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B No central condensation was observed this time. Funny, when the seeing was so good. (?) [sic]

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
9.331	850041	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 Stellar guiding was used because of the small angular movement of the comet with respect to time.

DATE: 10 OCT 1985

DATE: 10 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
10.062	810351	9.0	S	SAO					0.31	N	5	80				Giampaolo,G	
10.090	810352	11.5	S	U ORI	1.3	4			0.203	SC	10	80	4	Y	1	Tanti,T	A
10.15	810353	11.7	S	SU TAU	1	5			0.250	N	5.6	80	6	M	Y	1	van Loo,F.R
10.23	810354	10.6	S		1.1				0.203	N	7	54	4.5	Y	1	Harrington,P	
10.38	810355	10.7	S	SU TAU	1.8	5			0.317	N	6	68				Bortle,J.E	B
10.5368	810356	11.4	S	U ORI	2.0	5			0.254	N	3.8	64	5.4		3	Machholz,D	
10.71	810357	10.6	S	SU TAU	2				0.152	N	5	76	6.2	Y	1	Seargent,D	
10.73	810358	10.7	S	Y TAU	1.0	7			0.20	N	6.3	50	6.8	Y	1	Lovejoy,T	C
10.81	810359	11.5	S		1.5	3			0.317	N	5	63	6.0	Y		Pearce,A	
10.94	810360	11.0	S	SU TAU	3.0	3	0.01	273	0.400	N	5	81	6.5	Y	2	Merlin,J.-C	
10.983	810361	11.3	M	CZ ORI	1.1	6			0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	D

NOTE A Seeing excellent, transparency excellent. Moon.

NOTE B Almost stellar nucleus.

NOTE C Glare from close star.

NOTE D 2.7' coma, averted vision.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
10.932	830045	0.05	0.40	N	5	81,254	15	6.5	2	Merlin,J.-C	A
10.948	830046	0.14	0.356	SC	11	200,400			1	Verdenet,M	B

NOTE A Jet at PA 8, narrow, straight and quite bright; jet at PA 59, more diffuse; jet at PA 191, very diffuse feature; jet at PA 337, fountain like feature. Central point mag. about 15. Large fan westward.

NOTE B (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
10.337	850042	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak 2415		Y	S	2/P	1	Dilsizian,R	A
10.944	850043	0.420	1.7	0.250	4.9 x 3.3	40.00	Kodak 2415		N	S	2/P	1	Bruhlin,W	B

NOTE A Stellar guiding was used because of the small angular movement of the comet with respect to time.

NOTE B (Observer's image identifier is II. Ed.)

DATE: 11 OCT 1985

DATE: 11 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
11.010	810362	10.9	S	U ORI	1.6	2			0.25	N	6	120	4.9	Y	1	Gainsford,M.J	
11.020	810363	10.7	S	Y TAU	2.5	3			0.08	B		15	6.6	Y	4	Haver,R	
11.021	810364	13.1	S	CZ ORI					0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	A
11.042	810365	11.6	M	CZ ORI	1.0	6			0.35	N	5.5	160	5.8	Y	1	Fleet,R.W	B
11.045	810366	13.4	M	CZ ORI					0.35	N	5.5	160	5.8	Y	1	Fleet,R.W	A
11.049	810367	11.3	M	CZ ORI	1.0	7			0.22	N	8	90	5.8	Y	1	Fleet,R.W	C
11.052	810368	11.6	M	CZ ORI					0.15	N	4	50	5.8	Y	1	Fleet,R.W	D
11.087	810369	11.2	S	U ORI	1.3	5			0.203	SC	10	80	5.5	Y	1	Tanti,T	E
11.297	810370	11.5	S	SU TAU	1.8	3			0.15	R	5	62	6.7	Y	3	Morrison,W	F
11.342	810371	11.6	S	SU TAU	1.4	5			0.445	N	4.5	80	6.7	Y	3	Morrison,W	F
11.35	810372	10.9	M	SU TAU		4			0.20	N	6	122	6	Y	3	Hale,A	
11.35	810373	10.9	M	SU TAU		4			0.20	N	6	61	6	Y	3	Hale,A	
11.417	810374	11.0	M	U ORI		2			0.356	N	5	225		Y	1	Jeffrey,J	G
11.43	810375	10.3	M	SU TAU	2.8	4			0.256	N	4.5	67	6.5	Y	6	Morris,C.S	H
11.46	810376	10.1	S	NPS	4	3			0.080	B		20	6.5	Y	6	Morris,C.S	
11.4951	810377	11.2	S	U ORI	2.0	5			0.254	N	3.8	64	6.0	Y	1	Machholz,D	
11.78	810378	11.7	S		1.2	2			0.317	N	5	63	6.0	Y		Pearce,A	
11.91	810379	11.2	S		2.5	6			0.254	N	4.5	71	6.7	Y	3	Zanotta,M.V	I
11.983	810380	13.0		CZ ORI					0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	J
11.997	810381	11.1	M	CZ ORI	0.9	6			0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	C

NOTE A Nucleus magnitude.

NOTE B 2.1' coma, averted vision.

NOTE C 2.4' coma, averted vision.

NOTE D 0.2' coma, averted vision.

NOTE E Seeing good, transparency excellent.

NOTE F CZ Ori also used for comparison stars.

NOTE G Coma still very diffuse and faint in the outer areas, inner coma now shows a definite greater brightness. No tail or other features seen. Drawing made. Limit 14.5.

NOTE H Comet had 1' central condensation.

NOTE I The comet was low in the east sky, and haze affected the estimate.

NOTE J Central condensation magnitude, stellar.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
11.917	830047	0.14	0.356	SC	11	200			1	Verdenet,M	A
11.974	830048	0.05	0.40	N	5	81,254	15	6.5	2	Merlin,J.-C	B

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Jet at PA 48; jet at PA 84; jet at PA 222. Hood at PA 306, PA given = axis of the parabolic hood. General structure extremely similar to what was seen on 1985 Oct. 10, except that the diffuse fan is now rather southward.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
11.780	850044	0.300	1.5		6.9 x 4.6	20.00	Kodak 2415		Y	S	1/P	2	Nassr,J.L	A
11.946	850045	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y		101/P		Jager,M	B

NOTE A First photographic recovery of the comet from the Philippines.

NOTE B Coma 4 to 5 arc min.; no tail; magnitude 10.5. Instrument is Schmidt camera.

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
12.00	810382	10.8	S	SU TAU	3.0	4	0.03	270	0.400	N	5	81	6.5	Y	2	Merlin,J.-C	
12.00	810383	10.2	B	E					0.15	N						Korneev,V	
12.01	810384	10.3	S	SU TAU	3.0	2			0.150	N	5	25	6.5	Y	2	Merlin,J.-C	
12.02	810385	11.3		VAS 133		3			0.205	N	6	80	5.5	Y	1	Germann,R	
12.021	810386	11.0	B						0.256	N	5.6	88		Y	1	Cardiel,N	
12.04	810387	10.4	S	SU TAU	2.5	3			0.156	N	5	36	6.5	Y	2	Bouma,R.J	
12.04	810388	10.4	S	SU TAU	2.5	3			0.156	N	5	36	6.5	Y	2	Bus,E.P	
12.04	810389	10.7	S	SU TAU	3	2			0.203	C	10	80	6	Y	3	Comello,G	
12.042	810390	10.5	B			2			0.153	N	6	94		Y	1	Cardiel,N	A
12.045	810391	10.5	B			3			0.114	N	3.7	47		Y	1	Gomez,A	B
12.056	810392	10.5			0.5				0.256	N	5.6	88		Y	3	Gomez,T.L	C
12.063	810393	10.3			3		0.07		0.35	N	5.5	100	5.8	Y	1	Pedraz,S	D
12.069	810394	11.3	M	CZ ORI	1.0	6			0.19			38		Y	1	Fleet,R.W	E
12.073	810395	10.5	S	SU TAU	3	3			0.202	SC	10	169	5.2C	Y	1	Kammerer,A	F
12.075	810396	11.4	S	U ORI	0.5	4			0.15	N	4	50	5.8	Y	1	Fleet,R.W	G
12.076	810397	11.9	M	CZ ORI		7			0.203	SC	10	80	5.7	Y	1	Luthen,H	
12.076	810398	11.4	S	U ORI	1	4			0.256	N	5.6	200		Y	1	Gallego,J	H
12.078	810399	10.5	B		3				0.100	N	9	23	6.5	Y	1	van de Weg,R.L.W	
12.08	810400	10.6	S	SU TAU	3	2			0.22	N	8	90	5.8	Y	1	Fleet,R.W	I
12.083	810401	11.5	M	CZ ORI	0.9	6			0.150	N	5	127		Y	3	Rodriguez C.,J.A	
12.083	810402	10.4	B						0.203	SC	10	80	5	Y	1	Tanti,T	J
12.094	810403	11.2	S	U ORI	1.4	4			0.310	JB	6	72	6 C	Y	1	Feijth,H	
12.11	810404	11.1	S	SU TAU	4	3			0.203	SC	10	80	6.3	Y	2	Granslo,B.H	
12.14	810405	11.5	B	SU TAU	1.2	3			0.25	N	6	120	4.9	Y	1	Gainsford,M.J	
12.191	810406	11.9	S	SU TAU	1.6	2			0.445	N	4.5	222	6.2C	Y	1	Beach,G	K
12.208	810407	12.5			2.5	0			0.203	N	7	135				Green,D.W.E	A
12.26	810408	10.3	M	LWES	3.3	5			0.203	N	7	135				Green,D.W.E	A
12.26	810409	10.5	S	LWES	3.3	5			0.080	B		20				Green,D.W.E	A
12.31	810410	10.3	S	LWES	3.3	2			0.203	N	7	55				Green,D.W.E	A
12.33	810411	10.2	M	LWES	3.3	6			0.203	N	7	55				Green,D.W.E	A
12.33	810412	10.4	S	LWES	3.3	6			0.44	N	4.5	333	5.2	Y	1	Falvo,S.A	L
12.333	810413	12.3	M	60	0.2	4			0.15	R	5	62	6.7	Y	3	Morrison,W	M
12.354	810414	11.5	S	SU TAU	2.1	2			0.317	N	6	68				Bortle,J.E	N
12.37	810415	10.3	S	SU TAU	3.2	6			0.256	N	4.5	67	7.0	Y	1	Morris,C.S	O
12.49	810416	10.3	M	SU TAU	2.8	5			0.256	N	4.5	156	7.0	Y	1	Morris,C.S	O
12.50	810417	11.4	M	SU TAU	1.2	5			0.610	C	16.0	264	7.0	Y	1	Morris,C.S	P
12.50	810418								0.152	N	8.0	76	5.6	Y	3	Machholz,D	
12.5354	810419	11.1	S	U ORI	1.5	2			0.31	N	5.7	55	4.5	Y	2	Suzuki,K	Q
12.66	810420	12			2	1			0.317	N	5	86		Y		Jones,A	
12.68	810421	11.9	S	CZ ORI	1	3			0.318	N	8	150		Y	1	Tregaskis,T.B	R
12.774	810422	13		59, 60	0.5	3			1.00	N	13	185				Churyumov,K	
12.96	810423	12.3	B	PA	0.5	4			0.400	N	5	81	6.5	Y	2	Merlin,J.-C	S
12.98	810424	10.7	S	SU TAU	3.0	3	0.02	14	0.150	N	5	25	6.5	Y	2	Merlin,J.-C	
12.98	810425	10.2	S	SU TAU	3.0	2			0.20	R	15	120				Churyumov,K	
12.98	810426	11.2	B	PA	1.0	3			0.406	N	4.5	138	6.0	Y	5	Linder,J	
12.9836	810427				1.0	5			0.08	B		15	6.7	Y	4	Haver,R	
12.985	810428	10.6	S	Y TAU	2.0	3			0.26	N	6	218	4.0C	Y	1	Hurst,G.M	T
12.985	810429	11.7	S	SU TAU	0.6	3											

NOTE A Coma diameter approximate.

NOTE B Drawing 2. Coma diameter approximate.

NOTE C Very faint. Coma diameter approximate. Drawing 2.

NOTE D Tail length approximate.

NOTE E 2.7' coma, averted vision.

NOTE F Excellent weather conditions. Instrument is flat-field Schmidt. Faintest star on sequence 12.8.

NOTE G 0.7' coma, averted vision.

NOTE H Condensed.

NOTE I 2.4' coma, averted vision.

NOTE J Seeing good, transparency good.

NOTE K Easy to see. Brighter. Magnitude uncertain.

NOTE L Comet has brightened approx. full magnitude. Noted when looking directly at coma, a small central condensation. Averted vision did not show any condensation, just a soft glow.

NOTE M CZ Ori also used for comparison stars.

NOTE N Nearly stellar nuc. of 13.0.

NOTE O North Polar Seq. also used.

NOTE P Comet was distinctly elongated toward PA 240 and had a bright non-stellar condensation.

NOTE Q Cloud.

NOTE R M.M. estimated - object almost at limit - no known comparison stars nearby. Clear - dawn breaking. Observing comet directly over glow of Melbourne to the north. Faintest star seen in instrument approximately 14.

NOTE S Streamer (not tail).

NOTE T Circular, diffuse glow, very small, no elongation seen. Slightly condensed. Star-like object just east of comet and of magnitude 13.5-14 glimpsed at limit of vision. No star later found on Stellarum and track line on S and T chart obscures. Presumed a star but may just have been a nuclear spot?? Comet field low.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
12.021	830049		0.256	N	5.6	88			1	Cardiel,N	A
12.042	830050		0.153	N	5				1	Cardiel,N	B
12.045	830051		0.203	N	6	94			1	Gomez,A	C
12.063	830052		0.256	N	5.6	88			3	Pedraz,S	D
12.076	830053	0.09	0.83	R	19.7	270	10		3	Soc. Astro. de France E	
12.078	830054		0.256	N	5.6	88			3	Gallego,J	F
12.094	830055	0.09	0.83	R	19.7	270	12		3	Soc. Astro. de France G	
12.122	830056		0.15	N	5	127	11		3	Rodriguez C.,J.A	
12.123	830057		0.335	N	4.5	150	5		2	Ripero,J	H
12.340	830058	0.09	0.44	N	4.5	222,333	20	5.2	1	Falvo,S.A	I
12.969	830059	0.22	0.356	SC	11	200	150		1	Verdenet,M	
12.990	830060	0.07	0.40	N	5	81,254	10	6.5	2	Merlin,J.-C	J

NOTE A Field 45 arc min. (Duration not indicated. Time of observation is assumed to be mid time. Drawing data inferred from magnitude report form. Ed.)

NOTE B Field 14 arc min. (Duration not indicated. Time of observation is assumed to be mid time. Drawing data inferred from magnitude report form. Ed.)

NOTE C (Duration not indicated. Time of observation is assumed to be roughly mid time. Drawing data inferred from magnitude report form. Ed.)

NOTE D Field: 45'. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

NOTE E Dimensions of the comet's nebulosity: 55"x38". Drawing made by J. Claude Thorel.

NOTE F Field 20'. Condensed nucleus. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

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from magnitude report form. Ed.)

NOTE G Dimensions of the comet's nebulosity: 55"x38". Drawing made by Yvonne Ensargueix.

NOTE H Field: 0.4 deg. The comet was clearly visible as a tiny nebulous patch, brightest in the center.

NOTE I It is rare that I can see a 5th mag. star with the naked eye from my site.

NOTE J Jet at PA 34, diffuse extension superimposed; jet at PA 189, quite large; jet at PA 261, narrower than other jets, possibly tailward; jet at PA 296.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.022	850046	0.760	4	0.19	2.7 x 1.8	11.00	Kodak 2415		Y	S	33/N	1	Mikuz,H	
12.058	850047	0.500	6.3	0.080	4.1 x 2.7	15.00	ORWO NP 27	400/27	N		218/P	1	Richert,M	A
12.080	850048	1.400	5.6	0.260	1.5 x 1.0	20.00	Ilford HP5	400/27	N	O	5/C	1	Paolinetti,R	B
12.108	850049	0.500	6.3	0.080	4.1 x 2.7	11.00	ORWO NP 27	400/27	N		222/P	1	Richert,M	C
12.115	850050	0.300	4.0		6.9 x 4.6	30.00	Kodak 2415		Y	S	2/P	1	Portela,A	
12.161	850051	1.750	5	0.350	1.2 x 0.8	34.80	Kodak 2415		Y	M	1/P	1	Mobberley,M	
12.259	850052	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak 2415		Y	S	225/P	1	Sabia,J.D	
12.302	850053	0.63	1.8	0.35	3.3 x 2.2	4.50	103a-F		N		01/P	2	Ferrin,I	D
12.315	850054	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak 2415		Y	S	1/P	1	Dilsizian,R	
12.328	850055	0.63	1.8	0.35	3.3 x 2.2	12.50	103a-F		N		001/P	2	Ferrin,I	E

NOTE A City lights interfered with the observation. (Observer's image identifier is 82 18. Ed.)

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

NOTE C City lights interfered with the observation. (Observer's image identifier is 82 22. Ed.)

NOTE D Red filter used. (Observer's image identifier is 1A. Ed.) Instrument is Schmidt camera.

NOTE E Blue filter used. (Observer's image identifier is 1B. Ed.) Instrument is Schmidt camera.

DATE: 13 OCT 1985

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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	810430	12.4	B	PA					1.00	N	13	185				Churyumov,K		
13.004	810431	11.1	S	SU TAU	2	4			0.152	N	5	44	6.1	Y	2	Moeller,M		
13.01	810432	11.2	M	CZ ORI	1.1	6			0.35	N	5.5	100	5.7	Y	1	Fleet,R.W	A	
13.01	810433	12.8		CZ ORI					0.35	N	5.5	100	5.7	Y	1	Fleet,R.W	B	
13.014	810434	11.5	S	SU TAU	0.8	3			0.26	N	6	145	4.5	Y	1	Hurst,G.M	C	
13.02	810435	11.1	S	CY AQR	0.5	2			0.203	SC	10	77	6.0	Y	1	Maraziti,A	D	
13.02	810436	11.3	M	CZ ORI	0.6	6			0.22	N	8	90	5.7	Y	1	Fleet,R.W	E	
13.02	810437	12.7		CZ ORI					0.22	N	6	55	5.0	Y	1	Hurst,G.M	F	
13.021	810438	11.2	S	SU TAU	0.8	3			0.26	N	6	55	5.0	Y	1	Hurst,G.M	G	
13.024	810439	>10.0	S	SAOC					0.08	B		15	5.0	Y	1	Hurst,G.M	H	
13.03	810440	11.1			2	5			0.140		1.7		6.0		1	Kraling,W	I	
13.042	810441	10.9	S		0.2	4		270	0.41	N	4.5	180	5.9	Y	3	Parisio,R		
13.05	810442	10.1	S	SU TAU	2.8	3			0.156	N	5	29	6.5	Y	6	Bouma,R.J		
13.069	810443	11.9		CZ ORI		8			0.075	R	16	50	5.7	Y	1	Fleet,R.W	J	
13.08	810444	10.3	S	SU TAU	2.5	3			0.254	JB	6	72	6	C	Y	5	Bus,E.P	K
13.08	810445	10.8	S	SU TAU	2.6	6			0.250	N	5.6	56	6	Y	1	van Loo,F.R		
13.0853	810446	11.4	S	U ORI	1.0	4			0.203	SC	10	100	6.0	Y	5	Linder,J		
13.097	810447	10.8	S	U ORI	2.0	4			0.203	SC	10	80	4	Y	1	Tanti,T	L	
13.10	810448	11.5	S	SU TAU	1	3			0.150	R	8	150	5.5C	Y	1	Aerts,L		
13.10	810449	10.8	S		3.6	5			0.305	N	5	60	6.7	Y	2	Zanotta,M.V	M	
13.115	810450	11.9	S	SU TAU	1.3	3		30	0.25	N	6	120	5.0	Y	1	Gainsford,M.J	N	
13.118	810451	10.7	S	Y TAU C	2.1	2			0.203	SC	10	51	6.2	Y	1	Meozzi,D		
13.12	810452	11.7	S	SUT					0.20	R	12	120	6.3		1	Shanklin,J.D		
13.12	810453	10.6	S	SU TAU	5	2			0.203	C	10	80	6.5	Y	5	Comello,G	O	
13.12	810454	10.7	S						0.080	B		20	6.7	Y	2	Zanotta,M.V		
13.13	810455	10.5	S	SU TAU	2.3	6			0.254	N	5.6	70	6.5	Y	1	Kuipers,G		
13.13	810456	10.5	S	SU TAU	2.3	6			0.254	N	5.6	70	6.5	Y	1	Kroon,B		
13.13	810457	10.3	S	SU TAU	3	3	0.08	250	0.100	N	9	23	6.6	Y	1	van de Weg,R.L.W		
13.153	810458	11.4	B	SA 74	1.1	5			0.250	N	6	75	5.8	Y	1	Guthrie,O	P	
13.159	810459	10.6	B	SUTAU59	1.8	3			0.330	N	4.5	59	6.5	Y	1	Castino,R		
13.17	810460	10.6	S	SU TAU	2	4			0.250	N	5.6	80	6.5	Y	1	van Loo,F.R	O	
13.20	810461	10.0	S		2.5	2			0.203	N	7	54	6.0	Y	1	Harrington,P		
13.23	810462	10.5	B	CZ ORI	1.5	3	0.04	285	0.20	SC	10	77	5.5	Y	1	Ward,A	Q	
13.364	810463	10.3	B		4	7			0.20	SC	10	77	6.0	Y	1	Hodonsky,K	R	
13.39	810464	10.1	S	NPS	4	2			0.080	B		20	6.5	Y	1	Morris,C.S		
13.40	810465	10.1	M	SU TAU	3.7	3			0.256	N	4.5	45	6.5	Y	1	Morris,C.S	S	
13.4160	810466	11.0	M	SU TAU	3.2	6			0.32	N	4.8	59	6.6	Y	3	Cook,A.J		
13.42	810467	10.1	M	SU TAU	2.5	3			0.256	N	4.5	67	6.5	Y	1	Morris,C.S	S	
13.43	810468	10.5	M	SU TAU	1.4	6			0.256	N	4.5	111	6.5	Y	1	Morris,C.S	S	
13.44	810469	10.7	M	SU TAU	0.9	7			0.256	N	4.5	156	6.5	Y	1	Morris,C.S	S	
13.448	810470	10.8	S		3				1.524	C	16	443	5.2	Y	3	Glassett,W	T	
13.50	810471	10.6	M	SU TAU					0.20	N	6	61	6.5	Y	2	Hale,A		
13.604	810472	12.7	S		1	4			0.33	N	4.5	175	6.0	Y	2	Fabre,R		
13.67	810473	11.1	S	CZ ORI	1	4			0.317	N	5	86		Y		Jones,A		
13.73	810474	12.5	M	60	1	0.5	4		0.150	N	6	102	5.5	Y	4	Watanabe,N		
13.86	810475	12.2	B	PA					1.00	N	13	185				Churyumov,K		
13.87	810476	11.5	B	PA					0.20	R	15	120				Churyumov,K		
13.88	810477	12.4	B	PA					1.00	N	13	185				Churyumov,K		
13.90	810478	11.2	B	PA	3.0	3			0.20	R	15	120				Churyumov,K		
13.94	810479	11.4	B	PA					0.20	R	15	120				Churyumov,K		
13.955	810480	10.1	S	SU TAU	3	3			0.19		4	38		Y	1	Mikuz,H	U	
13.972	810481	12.0	S	SU TAU					0.25	N	6	120	4.5	Y	1	Gainsford,M.J	V	
13.972	810482				1.2				0.25	N	6	60	4.5	Y	1	Gainsford,M.J	V	
13.976	810483	12.8		CZ ORI					0.35	N	5.5	100	5.7	Y	1	Fleet,R.W	B	
13.979	810484	11.0	M	CZ ORI	1.1	6			0.35	N	5.5	100	5.7	Y	1	Fleet,R.W	W	

NOTE A 2.2' coma, averted vision.

NOTE B Central condensation magnitude.

NOTE C Noticeably condensed, DC 3-4. Circular, with brighter area to diameter 0.6' and a faint halo, to total 0.8'.

NOTE D Very diffuse spherical coma. GEOS chart used.

NOTE E 1.7' coma, averted vision.

NOTE F Central condensation magnitude.

NOTE G Circular, quite condensed glow, DC 3.

NOTE H Comet not seen.

NOTE I Coma diameter approximate. Tri-X film used in camera for this estimate.

NOTE J Magnitude includes faint star.

NOTE K Star in Halley's coma.

NOTE L Seeing good, transparency good/fair.

NOTE M Perfect sky. At 150x I saw a strong and well-defined central condensation (disk-like) whose diameter was = 0.3'.

NOTE N Tail length = ? elong. PA uncertain.

NOTE O Coma diameter approximate.

NOTE P Coma!

NOTE Q Fine sighting, good visibility.

NOTE R No tail seen.

NOTE S North Polar Seq. also used.

NOTE T Bright nucleus.

NOTE U Excellent conditions. Instrument is flat-field Schmidt. Faintest star on sequence 12.8.

NOTE V Misty.

NOTE W 2.8' coma, averted vision.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
13.005	830061	0.15	0.26	N	6	218,145, 55	57	4.0	1	Hurst,G.M	A
13.045	830062		0.203	SC	10	150	10		1	Velasco,E	B
13.173	830063	0.05	0.83	R	19.7	320	10		3	Soc. Astro. de France	C
13.181	830064	0.07	0.83	R	19.7	320	10		3	Soc. Astro. de France	D
13.188	830065	0.04	0.83	R	19.7	320	9		3	Soc. Astro. de France	E
13.198	830066	0.05	0.83	R	19.7	320	3		3	Soc. Astro. de France	F
13.203	830067	0.07	0.83	R	19.7	320	7		3	Soc. Astro. de France	G
13.208	830068	0.05	0.83	R	19.7	320	6		3	Soc. Astro. de France	H
13.243	830069	0.18	0.254	N	5.6	53, 60,120	10	6.4	3	Knisely,D	I
13.917	830070	0.18	0.356	SC	11	200			1	Verdenet,M	I

NOTE A Estimated coma size 0.6'. Circular, diffuse glow, very small, no elongation seen. Slightly condensed, DC 3. Star like object possibly just east of comet and of magnitude 13.5-14 glimpsed at limit of vision. No star later found on Stellarium and track line on S and T chart obscures. Presumed a star but may just have been a nuclear spot??

NOTE B More fainter than predicted. Observation made with J. Rabanal, owner of the telescope. Observation made by brothers Pedro and Enrique Velasco.

NOTE C Light pollution near Paris. No features. Drawing made by J. Phillippe Garsztko.



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NOTE D Dimensions of the comet's nebulosity: 40"x28". Atmospheric and luminous pollution above Paris (east to south). Drawing made by J. Claude Thorel.  
 NOTE E Light pollution near Paris. Drawing made by Phillippe Venant.  
 NOTE F No features. Drawing made by J. Philippe Garstka.  
 NOTE G Dimensions of the comet's nebulosity: 40"x28". Atmosphere and luminous pollution above Paris (east to south). Drawing made by J. Claude Thorel.  
 NOTE H Same size as NGC 3077 in Ursa Major but slightly fainter. Brightness drops off more rapidly from center outward than in NGC 3077. 11th magn. star near west edge of coma, other star in south part of coma. No definite nucleus seen. Not quite circular coma. E-W elongation? Magnification of 160x also used.  
 NOTE I (Duration not indicated. Time of observation is assumed to be start time. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
13.172	850056	0.803	2.1	0.350	2.6 x 1.7	10.00	Kodak 103a-F		N		6/P	1	Guarro,J	
13.189	850057	0.803	2.1	0.350	2.6 x 1.7	10.00	Kodak 103a-F		N		7/P	1	Guarro,J	
13.526	850058	2.306	5	0.45	0.9 x 0.6	26.00	Kodak Tri-X		N	M	4/S	1	Webb,R	A

NOTE A Inner coma and starlike central condensation visible on all original negatives. Film push processed slightly. (Observer indicated C-type guiding as well as M. Ed.)

DATE: 14 OCT 1985

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## 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	
14.024	810485	10.8	S	SU TAU	1	4			0.203	SC	10	80	4.2	Y	1	Foulkes,M	A	
14.049	810486	10.7	M	CZ ORI	1.0	6			0.22	N	8	90	5.7	Y	1	Fleet,R.W	B	
14.05	810487	10.2	S	SU TAU	3.5	3	0.08	270	0.100	N	9	23	6.7	Y	1	van de Weg,R.L.W	C	
14.063	810488	11.2	M	Y TAU	1.2	2			0.205	N	7.5	125	5.6	Y	1	Falorni,M	D	
14.073	810489	10.9	M	CZ ORI	0.8	5			0.15	N	4	50	5.7	Y	1	Fleet,R.W	D	
14.083	810490	12.0		CZ ORI		3			0.075	R	16	50	5.7	Y	1	Fleet,R.W		
14.12	810491	11.5	S	SU TAU	1	3			0.150	R	8	150	6	C	Y	1	Aerts,L	
14.12	810492	10.1	S	SU TAU	2.5	6			0.250	N	5.6	56	6.5	Y	1	van Loo,F.R		
14.13	810493	10.6	S		3.6	4			0.305	N	5	60	6.2	Y	2	Zanotta,M.V	E	
14.14	810494	11.5	M	AA	3.5	3			0.106	R	5.7	24				Keszthelyi,S		
14.274	810495	10.6	S	CZ ORI	2	0			0.25	N	5.6	56	6	Y	1	Jordan,J	F	
14.382	810496	10.0	B	Y TAU		5			0.254	N	6	147	6.6	Y	1	Troiani,D.M		
14.4229	810497	10.7	S	U ORI	2.0	4			0.152	N	8.0	76	5.8		3	Machholz,D		
14.514	810498	10.8	B	U ORI	2	4			0.15	N	6	100	6.0	Y	1	Krisciunas,K		
14.625	810499	12.3	S		1	5			0.44	N	4.5	225	5.5	Y	1	Fabre,R		
14.65	810500	11.1	S	CZ ORI	1	6			0.317	N	5	86		Y		Jones,A		
14.70	810501	11.5	M						0.16	N	6.3	80	4.5	Y	1	Mitsuma,S		
14.79	810502	11.0	S		1.5	4			0.317	N	5	63	5.9	Y		Pearce,A		
14.88	810503	12.4	B	PA					1.00	N	13	185				Churyumov,K		
14.89	810504	11.2	B	PA	2.0	3			0.20	R	15	120				Churyumov,K		
14.92	810505	12.3	B	PA					1.00	N	13	185				Churyumov,K		
14.94	810506	11.0	B	AAVSO					0.20	R	15	120				Churyumov,K		
14.97	810507	12.2	B	PA					1.00	N	13	185				Churyumov,K		

NOTE A Slight haze.

NOTE B 3.1' coma, averted vision.

NOTE C Possible extension in PA = 300 deg.?

NOTE D 2.4' coma, averted vision.

NOTE E 120x: strong central condensation, whose diameter was = 0.5' At 187x I saw a difficult and faint star-like nuclear region.

NOTE F Sky conditions were excellent, although a light cloud cover occasionally interrupted observation. This is the best view I have had of the comet so far this month.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
14.148	830071	1	0.106	R	5.7	24, 48, 60	27	6.7	1	Keszthelyi,S	
14.175	830072	0.04	0.83	R	19.7	800	7	5.9	3	Soc. Astro. de France	A
14.190	830073	0.1	0.298	N	5	65,179	8	5.5	1	Stott,D	B
14.360	830074	0.22	0.203	R	13	110			1	Phillips,J	C

NOTE A Streamer at PA 176, 24" long; ion tail at PA 220, 35" long; streamer at PA 270, 22" long. Drawing made by Serge Thebault.

NOTE B Coma approximately 0.3' in diameter. Spherical in shape.

NOTE C City lights. Exceedingly faint smudge of bluish light. Very difficult. Possible stellar nucleus glimpsed. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
14.173	850059	1.750	5	0.350	1.2 x 0.8	38.00	Kodak 2415		Y	M	2/P	1	Mobberley,M	
14.639	850060	1.760	5.8	0.303	1.2 x 0.8	13.00	Kodak 2415		Y		1/P	1	Niijima,T	A

NOTE A (Observer's image identifier is 851014-6. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

DATE: 15 OCT 1985

DATE: 15 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
15.049	810508	12.5	B		2				0.203	SC	10	160		N	3	Velasco,E	A
15.052	810509	11.2	M	CZ ORI	1.0	6			0.35	N	5.5	100	5.6	Y	1	Fleet,R.W	B
15.069	810510	11.3	M	CZ ORI	0.9	6			0.22	N	8	90	5.6	Y	1	Fleet,R.W	C
15.125	810511	10.7	S	Y TAU C	1.5	2			0.203	SC	10	51	5.6	Y	1	Meozzi,D	D
15.38	810512	10.4	M	SU TAU					0.20	N	6	61	6.5	Y	25	Bale,A	
15.3931	810513	10.5	S	U ORI	2.0	6			0.254	N	3.8	64	6.2		1	Machholz,D	
15.44	810514	10.4	M	SU TAU	4	5			0.32	N	4	66	7.0	Y	1	Keen,R	E
15.458	810515	10.8	M	U ORI	1.4	3			0.356	N	5	225		Y	1	Jeffrey,J	F
15.61	810516	11.0	B		1.5	6			0.15	N	8	43	6.0	N	1	Uda,K	
15.611	810517	12.7	S		3				0.10	N	10	80	5.0C	Y	1	Kato,T	G
15.64	810518	11.5			1	3			0.31	N	5.7	55	5.0	Y	2	Suzuki,K	
15.68	810519	11.6	M		1.8	2			0.16	N	6.3	80	6	Y	1	Mitsuma,S	
15.70	810520	11.1	M		2.3	2			0.16	N	6.3	31	6	Y	1	Mitsuma,S	
15.72	810521	11.1	S		1.2	6			0.26	N	5	105	5.0	Y	1	Kanai,K	
15.76	810522	10.8	S	AAVSO	2.5	4			0.20	N	5.6	89	6.0	Y	5	Nakamura,A	
15.88	810523	12.2	B	PA					1.00	N	13	185				Churyumov,K	
15.90	810524	11.0	B	AAVSO	1.0	5			0.20	R	15	120				Churyumov,K	
15.92	810525	12.2	B	PA					1.00	N	13	185				Churyumov,K	

NOTE A Observation made by Pedro Velasco and Enrique Velasco.

NOTE B 2.6' coma, averted vision.

NOTE C 2.1' coma, averted vision.

NOTE D High clouds.

NOTE E Mag 12 cond. at 130x.

NOTE F Limit 15.0.

NOTE G Central concentration magnitude.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
15.016	830075	0.25	0.356	SC	11	200	285		1	Vardenet,M	A
15.273	830076		0.254	N	5.6	53, 60,120	5	6.4	3	Knisely,D	B

NOTE A (Two drawings submitted. Ed.)

NOTE B Magnification of 160x also used. Overall appearance unchanged since 10/13/85 observation. Slight elongation east-west. Drawing not attempted.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
15.224	850061	0.803	2.1	0.350	2.6 x 1.7	12.00	Kodak 2415		Y	M	8/P	1	Guarro,J	
15.410	850062	0.305	2.5	0.122	6.8 x 4.5	4.00	Kodak Tri-X	400/	N	S	4/P	1	Minton,R.B	A

NOTE A Instrument is Aero-Ektar aerial camera lens. (Print submitted by observer is a composite of two 2 min. exposures separated by 6 min. Ed.)

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
16.007	810526	10.7	M	CZ ORI	1.0	6			0.22	N	8	90	5.7	Y	1	Fleet,R.W	A
16.021	810527	12.6		CZ ORI					0.35	N	5.5	100	5.7	Y	1	Fleet,R.W	B
16.028	810528	10.8	M	CZ ORI	1.2	6			0.35	N	5.5	100	5.7	Y	1	Fleet,R.W	C
16.045	810529	11.3	M	CZ ORI	0.3	6			0.15	N	4	50	5.7	Y	1	Fleet,R.W	D
16.059	810530	12.1		CZ ORI		9			0.075	R	16	50	5.7	Y	1	Fleet,R.W	
16.101	810531		S		1.6	4			0.203	SC	10	80		Y	1	Tanti,T	E
16.146	810532	11.2	B	SA 74	1.0	4			0.250	N	6	75	5.5	Y	1	Guthier,O	F
16.16	810533	10.3	S		3.1	5			0.305	N	5	60	6.4	Y	2	Zanotta,M.V	G
16.260	810534	10.6	S	CZ ORI	2	1			0.25	N	5.6	56	6	Y	1	Jordan,J	H
16.341	810535	10.1	B		4	7			0.20	SC	10	77	5.5	Y	1	Hodonsky,K	I
16.36	810536	10.3	M	SU TAU					0.20	N	6	61	6.5	Y	24	Hale,A	
16.42	810537	10.5	B		2.0	7			0.335	N	4.5	121	4.0	Y		Kronk,G	J
16.49	810538	10.0	S	SU TAU	3.1	4			0.256	N	4.5	45	6.5	Y	6	Morris,C.S	
16.65	810539	11.0	S	CZ ORI	2	5			0.317	N	5	86		Y		Jones,A	
16.97	810540	10.9		VAS 133	0.6	3			0.205	N	6	80	5.0	Y	1	Germann,R	

NOTE A 2.1' coma, averted vision.

NOTE B Central condensation magnitude.

NOTE C 2.5' coma, averted vision.

NOTE D 1.9' coma, averted vision.

NOTE E Seeing good, transparency fair/poor. Limit +2 to +4.5. Clouds.

NOTE F Central condensation.

NOTE G Much more bright than on 14/10/1985 (very likely the magnitude was 10.2). Extremely diffuse outer coma, with indefinite edges, strong central condensation whose diameter was ~ 0.8' (150x). Star-like nuclear region of magnitude approximately 13.0 (150x).

NOTE H Comet seen under excellent skies. Coma appeared round and uniform in brightness, although a slight degree of condensation surrounding nucleus may have been seen.

NOTE I No tail seen.

NOTE J Foggy.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
16.281	830077	2.0	0.30	R	15	225	90	5.0	2	Franch,J	A
16.917	830078	0.25	0.356	SC	11	200			1	Verdenet,M	B

NOTE A The comet appeared as a circular diffuse glow some 3' in extent with a starlike nucleus visible at times. Its estimated magnitude was 10.5. (Extreme ends of observer's start and end time ranges given. Ed.)

NOTE B (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
16.304	850063	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak 2415		Y	S	2/P	1	Dilsizian,R

DATE: 17 OCT 1985

DATE: 17 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
17.028	810541	10.6	M	CZ ORI	1.2	6			0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	A
17.031	810542	12.8		CZ ORI					0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	B
17.049	810543	10.9	M	CZ ORI	1.0	6			0.22	N	8	90	5.8	Y	1	Fleet,R.W	C
17.076	810544	11.1	M	CZ ORI	0.5	6			0.15	N	4	50	5.8	Y	1	Fleet,R.W	D
17.154	810545	11.0	M	AAVSO	0.5	2			0.063	R	13.3	52				Kosa-Kiss,A	
17.236	810546				1.9	4			0.152	N	6	73	7.0	Y	3	Knight,S	E
17.347	810547	10.5	S	CZ ORI	2	1			0.25	N	5.6	56	6	Y	1	Jordan,J	F
17.35	810548	9.4	M	LNES	1.6	6			0.229	R	12	261				Green,D.W.E	G
17.35	810549	9.5	S	LNES	1.6	6			0.229	R	12	261				Green,D.W.E	G
17.382	810550	10.9	M	SU TAU	1.0	5			0.61		13.5	110	5.0	Y	3	DeYoung,J.A	
17.39	810551	9.8	S	NPS	4.3	2			0.080	B		20	7.0	Y	6	Morris,C.S	
17.40	810552	9.6	S	SU TAU					0.080	B		20	7.0	Y	6	Morris,C.S	
17.4007	810553	9.9	S	NPS	3.7	4			0.256	N	4.5	45	7.0	Y	6	Morris,C.S	
17.401	810554	10.3	S	U ORI	2.0	5			0.254	N	3.8	64	6.2		1	Machholz,D	
17.41	810555	10.8	S		3				0.444	N	4.4	221	5.0	Y	1	Glassett,W	
17.41	810556	10.3	M	SU TAU					0.20	N	6	61	6.5	Y	2	Hale,A	
17.65	810557	10.9	S	CZ ORI	1.5	5			0.317	N	5	86		Y		Jones,A	
17.69	810558	9.3	S	SU TAU	4	5			0.152	N	5	76	6.2	Y	1	Seargent,D	
17.69	810559	9.4	S	SU TAU					0.152	N	5	29				Seargent,D	
17.917	810560	10.2	S		0.3	4		250	0.15	B		25	6.0	Y	3	Parisio,R	
17.986	810561	9.7	M	SU TAU	8	4			0.19		4	38		Y	1	Mikuz,H	H
17.997	810562	10.7	M	CZ ORI	1.5	6			0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	I

NOTE A 2.4' coma, averted vision.

NOTE B Central condensation magnitude.

NOTE C 2.2' coma, averted vision.

NOTE D 1.7' coma, averted vision.

NOTE E Stellar nucleus.

NOTE F Comet seen again under excellent skies, with intermittent light cloud cover.

NOTE G Coma diameter approximate.

NOTE H Excellent conditions. Instrument is flat-field Schmidt. Faintest star on sequence 12.8.

NOTE I 3.0' coma, averted vision.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
17.342	850064	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak 2415		Y	S	3/P	1	Dilsizian,R	
17.973	850065	0.225	1.7	0.140	9.1 x 6.1	5.00	Kodak 2415		Y	S	01/P	7	Linder,J	A
17.985	850066	0.225	1.7	0.140	9.1 x 6.1	5.00	Kodak 2415		Y	S	02/P	7	Linder,J	A

NOTE A Instrument is Schmidt camera.

DATE: 18 OCT 1985

DATE: 18 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
18.010	810563	10.9	M	CZ ORI	0.7	6			0.15	N	4	50	5.8	Y	1	Fleet,R.W	A
18.021	810564	10.0	S	U ORI	2.1	5			0.140	SN	3.6	25	6	Y	7	Linder,J	
18.03	810565	10.0	S		4.5	5			0.254	N	4.5	46	6.4	Y		Zanotta,M.V	B
18.031	810566	11.9		CZ ORI		6			0.075	R	16	50	5.8	Y	1	Fleet,R.W	C
18.031	810567	10.3	M	Y TAU	2.8	4			0.37	R	14.3	132	5.3	Y	2	Palorni,M	
18.038	810568	10.6	M	CZ ORI	1.4	6			0.22	N	8	90	5.8	Y	1	Fleet,R.W	A
18.04	810569	10.8	B	E					0.08	R						Nestarov,Yu	
18.05	810570	10.3	S		2.9	4			0.14		3.6	25	6.0	Y	1	Bottger,B	
18.053	810571	10.7	S	CZ ORI	2.0	6			0.20	SC	10	50	5.8	Y	2	Campos,J	D
18.06	810572	10.0:	S		5	3			0.080	B		20	6.4	Y		Zanotta,M.V	
18.090	810573	11.1		CZ ORI		8			0.08	B		11	5.8	Y	1	Fleet,R.W	
18.097	810574	10.2	S	Y TAU C	2.7	5			0.203	SC	10	51	6.3	Y	1	Meozzi,D	E
18.097	810575	10.4	S	Y TAU	2.6	5			0.203	SC	10	50	5.5	Y	1	Tanti,T	F
18.34	810576	9.4	S	SU TAU	7	3			0.080	B		20	6.5	Y	6	Morris,C.S	
18.35	810577	9.7:	S	Y TAU					0.080	B		20	6.5	Y	6	Morris,C.S	
18.35	810578	9.8	S	NPS					0.080	B		20	6.5	Y	6	Morris,C.S	
18.35	810579	9.8	S	ADL UBV					0.080	B		20	6.5	Y	6	Morris,C.S	G
18.36	810580	9.4	S	INES	2.2	6			0.229	R	12	261				Green,D.W.E	H
18.38	810581	9.4	S	INES	2.9	4			0.229	R	12	86				Green,D.W.E	H
18.473	810582	10.8	S		3				0.444	N	4.4	221	4.8	Y	1	Glassett,W	
18.500	810583	12.0	S		1	5			0.44	N	4.5	225	5.5	Y	1	Fabre,R	I
18.597	810584	10.9	M		1	6			0.20	SC	10	100	4.0C	Y	1	Kato,T	J
18.628	810585	12.8	S						0.20	SC	10	160	4.0C	Y	1	Kato,T	K
18.65	810586	10.9	S	CZ ORI	2	6			0.317	N	5	86		Y		Jones,A	
18.950	810587	10.4	S	SU TAU	2.5	5			0.152	N	5	44	6.0	Y	2	Moeller,M	L
18.95	810588				1.3	7			0.20	R	25	150				Rumyantsev,I	
18.993	810589	11.1	M	CZ ORI	1.8	6			0.35	N	5.5	100	5.7	Y	1	Fleet,R.W	M

NOTE A 2.4' coma, averted vision.

NOTE B Very diffuse outer coma, with indefinite edges. Strong central condensation; star-like nuclear region of magnitude approximately 12.0.

NOTE C 2.7' coma, averted vision.

NOTE D Round coma with central condensation.

NOTE E Bright nucleus.

NOTE F Seeing good, transparency excellent.

NOTE G Mv Sequence at RA 5h and Dec. 0.

NOTE H Coma diameter approximate.

NOTE I Used Sky &amp; Telescope chart.

NOTE J Condensation mag. = 13.2.

NOTE K Central condensation magnitude.

NOTE L Central condensation. 12 mag.

NOTE M 3.0' coma, averted vision.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
18.065	830079	0.26	0.400	N	5	100, 40,160	13	5.5	2	Sarocchi,D	A
18.175	830080	0.26	0.400	N	5	100,160	13	5.7	2	Sarocchi,D	

NOTE A Magnitude estimate about 11. DC 2.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
18.020	850067	0.760	4	0.19	2.7 x 1.8	10.00	Ilford HP5	400/27	N	S	78/N	1	Mikuz,H

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	
19.000	810590	12.5		CZ ORI					0.35	N	5.5	100	5.7	Y	1	Fleet,R.W	A	
19.000	810591	10.5	B		5	2			0.203	N	6	47	6.2	Y	5	Gomez,A	B	
19.010	810592	11.6	M	CZ ORI	0.4	5			0.15	N	4	50	5.7	Y	1	Fleet,R.W	C	
19.024	810593	10.9	M	CZ ORI	1.3	6			0.22	N	8	90	5.7	Y	1	Fleet,R.W	D	
19.026	810594	10.4	S	U ORI	1.5	5			0.203	SC	10	80	5.7	Y	1	Luthen,H		
19.03	810595	9.3	S	SU TAU	3.5	4			0.156	N	5	29	6.5	Y	2	Bouma,R.J		
19.03	810596	9.5	S	SU TAU	4	4			0.156	N	5	29	6.5	Y	2	Bus,E.P	E	
19.04	810597	13.2	V	SU TAU					0.156	N	5	45	6.5	Y	2	Bouma,R.J	F	
19.049	810598	11.9		CZ ORI		6			0.075	R	16	50	5.7	Y	1	Fleet,R.W	G	
19.05	810599	9.8	S	SU TAU	4	3			0.108	R	10	22	6	Y	3	Comello,G		
19.05	810600	10	B	E	3.0	5			0.16	N	10	30				Mormil,V		
19.06	810601	10.6	S	SU TAU	0.2	4			0.203	SC	10	77	5.9C	Y	2	Maraziti,A	H	
19.06	810602	10.5	S		2.4	3			0.20	N	6	49	5.5	Y	1	Jahn,J		
19.06	810603	10.3	S	SU TAU		3			0.258	N	5	50	6	C	Y	1	Feijth,H	
19.063	810604	10.8	S	CZ ORI	1.5	8			0.13	R	4	21	5.3	Y	2	Campos,J	I	
19.094	810605	10.6	S	Y TAU	2.5	4			0.203	SC	10	50	5	Y	1	Tanti,T	J	
19.288	810606	9.3	M	59		7			0.20	N	4.5	43	6.0C	Y	1	Hilburn,A.P	K	
19.354	810607	10.6	S		12				0.203	SC	10	80	4.5C	Y	1	Gronck,J.D	L	
19.4132	810608	10.3	S	U ORI	2.5	6			0.254	N	3.8	64	6.3	Y	4	Machholz,D		
19.48	810609	9.1	M	Y TAU	6.1	3			0.256	N	4.5	45	7.0	Y	6	Morris,C.S		
19.49	810610	9.1	M	Y TAU	7.7	1			0.080	B		20	7.0	Y	6	Morris,C.S		
19.51	810611	8.8	S	Y TAU	12	0			0.040	R		12	7.0	Y	6	Morris,C.S		
19.637	810612	11	M		1				0.10	N	10	111	5.0C	Y	1	Kato,T		
19.65	810613	12.0	M		0.8	4			0.20	N	5	36		Y	1	Curtis,D	M	
19.65	810614	11.0	S	CZ ORI	1.5	5			0.317	N	5	86		Y	1	Jones,A		
19.73	810615	11.3	M		1.5	3			0.16	N	6.3	80	6	Y	1	Mitsuma,S		
19.74	810616	9.5	S	Y TAU	3.0	6			0.20	N	6.3	50	6.5	Y	1	Lovejoy,T	N	
19.74	810617	10.7	M		2.4	2			0.16	N	6.3	31	6	Y	1	Mitsuma,S		
19.760	810618	11.4	S	59 YTAU	0.6	3			0.318	N	8	150		Y	1	Tregaskis,T.B		
19.85	810619	10.2	S	SU TAU	2	5	0.02	85	0.41	N	4.2	86	6.8	Y	3	Clark,M.L	O	
19.931	810620	10.5	S	SU TAU	2	4			0.152	N	5	44	5.6	Y	2	Moeller,M	Q	
19.94	810621	9.9	S	U ORI	3.0	4	0.03	284	0.400	N	5	81	6.5	Y	2	Merlin,J.-C		
19.95	810622	9.5	B	U ORI	4.0	2			0.150	N	5	75	6.5	Y	2	Merlin,J.-C		
19.97	810623	10.2	B	E	2.0	5			0.16	N	10	30				Mormil,V		
19.979	810624	10.6	S	SU TAU	2	5			0.203	SC	10	80	4.2	Y	1	Foulkes,M	R	
19.990	810625	10.5	S	SU TAU	2.7	4			0.26	N	6	55	5.0	Y	1	Hurst,G.M	S	

NOTE A Central condensation magnitude.

NOTE B Diffuse. Drawing 3. Coma diameter approximate and limit uncertain.

NOTE C 2.7' coma, averted vision.

NOTE D 2.4' coma, averted vision.

NOTE E Coma diameter approximate.

NOTE F Magnitude of "stellar" condensation. Diameter less than 0.1 arc min.

NOTE G 1.6' coma, averted vision.

NOTE H Diffuse, no nuclear condensation.

NOTE I Round coma with central condensation.

NOTE J Seeing good, transparency good. Clouds.

NOTE K Noted movement in one hour time.

NOTE L Recovery. Damp air - coma appeared to flare in mag.

NOTE M Semi urban sky.

NOTE N Coma asymmetric.

NOTE O Drifting cloud. Observing comet directly over glow of Melbourne to the north. Faintest star seen in instrument approximately 14.5.

NOTE P Short tail clearly visible.

NOTE Q Hazy.

NOTE R Cloud.

NOTE S Circular, bright, easy object to direct vision at low power (55x). Much larger than previously seen but inner brighter condensed area of 0.5' evident within a larger more diffuse ill-defined area reaching a diameter of 2.7', DC 4.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
19.000	830081		0.203	N	6	47			5	Gomez,A	A
19.307	830082		0.20	N	4.5	43			1	Hilburn,A.P	B
19.399	830083		0.203	SC	10	51	55	6.0	1	Lohvnenko,T.W	C
19.927	830084	0.17	0.356	SC	11	200			1	Verdenet,M	D
19.969	830085	0.06	0.40	N	5	81,254	10	6.5	2	Merlin,J.-C	E
19.988	830086	0.45	0.26	N	6	55,145	45	5.0	1	Hurst,G.M	F
19.990	830087	0.17	0.26	N	6	218	50	5.0	1	Hurst,G.M	G

NOTE A Much more "bright" than in the previous week, but yet very diffuse. Same DC = 2 and mag. = 10.5. (It's more faint than predicted...or, it seems.) (Duration not indicated. Time of observation is assumed to be roughly mid time. Drawing data inferred from magnitude report form. Ed.)

NOTE B No tail seen!

NOTE C Magnitude 11.2 (check star: AGK3+20 deg. 0417). (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E Jet at PA 51, short, straight and narrow; jet at PA 145, then curved westward and becoming diffuse. Tail at PA 284, about tailward, possibly two levels of brightness superimposed.

NOTE F Circular bright easy object to direct vision at low power (55x). Much larger than previously seen but inner brighter condensed area of 0.5' evident within a larger more diffuse ill-defined area reaching a diameter of 2.7', DC 4.

NOTE G At 218x, the outer regions of the coma were lost and the overall estimate of size was reduced to 1.8'. The inner condensed area of 0.5' was very bright. In fleeting moments of good seeing a star-like object, apparently displaced north following the centre of the coma's apparent centre, was seen. It was perhaps not quite stellar, possibly extending to 3-4 arc seconds diameter, magnitude 13.4.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
19.015	850068	1.800	4.5	0.400	1.1 x 0.8	16.00	Ilford HP 5	400/27	N	C	3/C	1	Ghione,G
19.138	850069	0.135	2.8		15.2 x 10.2	25.00	Kodak 2415		Y	S	1/P		Izquierdo,J

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	
20.000	810626	9.9	S	Y TAU	3.5	3			0.08	B		15	6.2	Y	3	Haver,R		
20.003	810627	10.6	S	SU TAU	2.7	4			0.26	N	6	145	5.0	Y	1	Hurst,G.M	A	
20.007	810628		S	SU TAU	1.8	5			0.26	N	6	218	5.0	Y	1	Hurst,G.M	B	
20.010	810629	9.7	S	SU TAU	3.0	4			0.08	B		15	5.0	Y	1	Hurst,G.M	C	
20.01	810630	10.6	S	SU TAU	2	6			0.320	N	7.2	100	6.5	Y	6	van Loo,F.R		
20.017	810631	10.5		AAVSO	1.5	4	0.03	250	0.36	SC	11	330	4.5	Y		Korth,S	D	
20.02	810632	10.7	S	SUT					0.20	R	12	40	6.0		1	Shanklin,J.D		
20.02	810633	10.5	S	SUT					0.08	B		20	6.0		1	Shanklin,J.D		
20.021	810634	11.0	M	CZ ORI	1.4	6			0.22	N	8	90	5.6	Y	1	Fleet,R.W	E	
20.021	810635	10.7	M	Y TAU	2.0	3			0.205	N	7.5	125	5.8	Y	1	Falorni,M		
20.031	810636	12.8	M	CZ ORI					0.35	N	5.5	100	5.6	Y	1	Fleet,R.W	F	
20.035	810637	10.8	M	CZ ORI	1.5	6			0.35	N	5.5	100	5.6	Y	1	Fleet,R.W	G	
20.05	810638	10.3	S	SU TAU	4	5			0.320	N		200	6	Y		Aerts,L	H	
20.053	810639	10.6	S	CZ ORI	2.0	7			0.13	R	4	21	5.6	Y	2	Campos,J	I	
20.066	810640	9.8	B		4				0.256	N	5.6	80	5.3	Y	1	Losada,R		
20.068	810641	11.1	B		1	4			0.150	C	15	56	6.0	Y	2	Zischa,E		
20.072	810642	9.7	S	Y TAU C	2.1	6			0.203	SC	10	51	6.2	Y	1	Meozzi,D		
20.083	810643	9.8	B		7				0.256	N	5.6	88		Y	3	Gallego,J		
20.09	810644	11.0	S	SU TAU	2.0	5			0.203	SC	10	50	6.0	N	1	Schmeer,P		
20.10	810645	10.8	B	SU TAU	2.5	4			0.203	SC	10	80	6.3	Y	2	Granslo,B.H		
20.10	810646	10.0	B	SU TAU	3	4			0.150	R	15	88	5	C	N	Geenen,J.J		
20.125	810647	10			5				0.256	N	5.6	88		Y	2	Pedraz,S		
20.132	810648	11.1	M	CZ ORI	0.8	4			0.298	N	5	65	5.8	Y	1	Stott,D		
20.142	810649	11.0	B		1	3			0.063	R	13	34	6.5	Y	1	Zischa,E		
20.146	810650	10.5	B	SA 74	1.5	4			0.250	N	6	75	5.0	Y	1	Guthrie,O	J	
20.16	810651	9.4	S		2.4	4			0.203	N	7	54	6.0	Y	1	Harrington,P		
20.16	810652	10.8	S	SU TAU	2	4			0.254	JB	6	76	5	C	Y	1	Wills,P	
20.17	810653	11.2	B	U ORI	2	3			0.318	N	5	62	6	Y	1	Simmons,K		
20.17	810654	11.0	B	U ORI	2.3	3			0.318	N	5	62	6.0	Y	1	Simmons,W		
20.18	810655	9.3	S	SU+YTAU	5	3	0.12	280	0.100	N	9	23	6.5	Y	1	van de Weg,R.L.W	K	
20.280	810656	> 8.4	B	59	5	4			0.203	R	13	85	4.6	Y	1	Fox,J.H		
20.284	810657	10.0	B	59		5			0.200	SC	10	127	5	Y	2	Gelinas,M.A		
20.30	810658	9.8	M	Y TAU					0.20	N	6	61	6	Y	2	Hale,A	L	
20.35	810659	9.2	S	LNES	2	7			0.229	R	12	261				Green,D.W.E	C	
20.3736	810660	10.3	S	U ORI	2.0	7			0.254	N	3.8	64	6.0		4	Machholz,D		
20.382	810661	10.4	M	59	0.5	5			0.44	N	4.5	222	4.2	Y	1	Falvo,S.A	M	
20.40	810662	9.1	Y	TAU	11	2			0.040	B		8	7.0	Y	1	Keen,R	N	
20.40	810663	9.5	M	Y TAU	17	5			0.32	N	4	40	7.0	Y	1	Keen,R		
20.424	810664	10.2	S	Y TAU	2.2	4			0.15	R	5	62	6.3	Y	3	Morrison,W	O	
20.45	810665	9.0	S	Y TAU	9	1			0.080	B		20	6.5	Y	6	Morris,C.S		
20.45	810666	9.1	S	NPS					0.080	B		20	6.5	Y	6	Morris,C.S		
20.45	810667	9.2	M	Y TAU	4.9	3			0.256	N	4.5	45	6.5	Y	6	Morris,C.S		
20.458	810668	10.5	M	U ORI		3			0.356	N	5	225		Y	1	Jeffrey,J	P	
20.65	810669	9.2	S	SU TAU					0.152	N	5	29	6.2	Y	1	Seargent,D		
20.65	810670	9.2	S	SU TAU					0.08	B		15				Seargent,D		
20.75	810671	10.1	S	AAVSO	3	4			0.20	N	5.6	89	6.5	Y	5	Nakamura,A		
20.75	810672	10.4	B	AAVSO					0.20	N	5.6	44		Y		Nakamura,A		
20.76	810673	10.3	M		3.0	4			0.16	N	6.3	31	5.5	Y	2	Hiraga,M		
20.930	810674	10.2	B		2.5	4			0.200	N	7.2	36	5.0M	Y	1	Lipski,P	Q	
20.93	810675	9.7	B	U ORI	2.5	4	0.03	230	0.400	N	5	81	6.0	Y	2	Merlin,J.-C		
20.948	810676	10.4	S	Y TAU	0.5	2			0.15	N	6.6	100	4.4M	N	1	Dal Santo,M		
20.969	810677	10.6	S	SU TAU	1.4	3			0.26	N	6	55	4.0	Y	1	Hurst,G.M		
20.993	810678	12.6	CZ	ORI					0.35	N	5.5	100	5.6	Y	1	Fleet,R.W	F	
20.997	810679	10.5	M	CZ ORI	1.4	6			0.35	N	5.5	100	5.6	Y	1	Fleet,R.W	R	

NOTE A Inner condensed area more clearly defined at 145x. Estimated to be 1/5 of overall coma diameter, = 0.5'.

NOTE B At 218x, the outer regions of the coma were lost and the overall estimate of size was reduced to 1.8'. The inner condensed area of 0.5' was very bright. In fleeting moments of good seeing a star-like object, apparently displaced north following the centre of the coma's apparent centre, was seen. It was perhaps not quite stellar, possibly extending to 3-4 arc seconds diameter, magnitude 13.4.

NOTE C Coma diameter approximate.

NOTE D Tail length uncertain, PA approximate.

NOTE E 2.7' coma, averted vision.

NOTE F Central condensation magnitude.

NOTE G 3.0' coma, averted vision.

NOTE H Coma asymmetric, U-shaped.

NOTE I Round coma with central condensation.

NOTE J Central condensation. Comet bright.

NOTE K Also visible in 12x60 mm binoculars.

NOTE L Magnitude estimate possibly affected by thin clouds and proximity to a fairly bright star.

NOTE M Comet brightened significantly to approx. 10.4 mag. The central condensation was obvious this observing run. Appearing as a small starlike point in center of coma.

NOTE N Modified Sidgwick method used.

NOTE O SU Tau and CZ Ori also used for comparison stars.

NOTE P Comet little change in appearance all month. Limit 15.0.

NOTE Q Small nucleus.

NOTE R 2.9' coma, averted vision.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
20.015	830088	0.10	0.36	SC	11	330	6	4.5	1	Korth,S	A
20.074	830089		0.250			100	7	6		Skorupa,W	B
20.083	830090		0.256	N	5.6	88			3	Gallego,J	C
20.108	830091		0.256	N	5.6	88			2	Cardiel,N	D
20.125	830092		0.256	N	5.6	88			2	Pedraz,S	E
20.162	830093	0.05	0.83	R	19.7	800	16	5.7	3	Soc. Astro. de France	F
20.185	830094	0.04	0.83	R	19.7		13	5.9	3	Soc. Astro. de France	G
20.280	830095	0.6	0.203	R	13	85	5	4.6	1	Fox,J.H	H
20.285	830096	0.27	0.200	SC	10	127	4	5	2	Gelinas,M.A	I
20.389	830097	0.09	0.44	N	4.5	222	20	4.2	1	Falvo,S.A	J
20.948	830098	0.22	0.356	SC	11	200			1	Verdenet,M	K
20.967	830099	0.3	0.26	N	6	55	35	4.0	1	Hurst,G.M	

NOTE A Tail? at about PA 250.

NOTE B Tiny core; brightening in forward H2 part; brightness ca. 10.5 mag. I still stress the good viewing conditions. Instrument is Ritchey-Chretien. (Translated by IHW staff. Ed.)

NOTE C Big and diffuse. Spherical aspect. [sic] (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

NOTE D Big but very diffuse. The night wasn't very good. Field 45 arc min. (Duration not indicated. Time of observation is assumed



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to be mid time. Drawing data inferred from magnitude report form. Ed.)  
NOTE E Field: 45'. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
NOTE F Jet at PA 73, 6" long; streamer at PA 189, 24" long; jet at PA 251, 5" long; jet at PA 323, 11" long. Drawing made by Alain Perez.  
NOTE G Jet at PA 74, 10" long; streamer at PA 198, 30" long; streamer at PA 262, 32" long. Drawing made by Serge Thebault.  
NOTE H Very similar to M1 except comet shows nuclear condensation and is more circular.  
NOTE I Lumicon Deep Sky filter used during part of the observation.  
NOTE J (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
NOTE K Very pale diffuse disk is circular, no tail seen. Also seen 145x and 218x but very unsteady and wavering image made further accurate observation impossible.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
20.122	850070	1.800		0.28	1.1 x 0.8	8.33	Kodak Tri-X	400/27	N		13/N	1	Darvann,T.A	A

NOTE A (Instrument FL of 2.800 and separately specified effective FL of approximately 1.800 don't match. Ed.)

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	
21.00	810680	13.0	V	SU TAU					0.254	JB	6	90	6.5	Y	7	Bouma,R.J	A	
21.00	810681	9.8	B	SU+YTAU					0.156	N	5	29	6.5	Y	6	Bus,E.P		
21.00	810682	9.2	S	Y TAU	45	3			0.156	N	5	29	6.5	Y	6	Bus,E.P	B	
21.00	810683	9.6	S	SU TAU	3	3			0.110	N	5	21	5.5C	Y	1	Feijth,H		
21.007	810684	10.5	M	CZ ORI	1.4	6			0.22	N	8	90	5.6	Y	1	Fleet,R.W	C	
21.007	810685	10.4	S	SU TAU	2	5			0.203	SC	10	50	5.1	Y	1	Foulkes,M		
21.01	810686	9.0	S	Y TAU	4	4			0.156	N	5	29	6.5	Y	7	Bouma,R.J		
21.021	810687	10.5	M	CZ ORI	1.0	6			0.15	N	4	50	5.6	Y	1	Fleet,R.W	D	
21.021	810688	8.6	S	SAO					0.31	N	5	62				Giampaolo,G		
21.038	810689	11.9	CZ ORI			6			0.075	R	16	50	5.6	Y	1	Fleet,R.W	E	
21.04	810690	9.8	S	SU TAU	2.5	6			0.254	N	5.6	70	6	C	Y	1	Kuipers,G	
21.04	810691	9.8	S	SU TAU	2.5	6			0.254	N	5.6	70	6	C	Y	1	Kroon,B	
21.056	810692	10.1	M	CZ ORI		8			0.08	B		11	5.6	Y	1	Fleet,R.W	F	
21.06	810693	9.5	S	Y TAU	6	3			0.203	C	10	65	6	Y	3	Comello,G	G	
21.083	810694	10.2	S	Y TAU	2.3	4			0.203	SC	10	50	5	Y	1	Tanti,T	H	
21.12	810695	10.2	S	SU TAU	4	5			0.150	R	8	68	5.5C	N	1	Aerts,L		
21.125	810696	9.9	B	SAO5A74	2.7	3			0.250	N	6	75	6.0	Y	1	Guthrie,O	I	
21.14	810697	9.4	S	Y TAU	6	4			0.250	N	5.6	56	6.5	Y	1	van Loo,F.R		
21.15	810698	10.5	S	SUT					0.20	R	12	40	5.5	Y	1	Shanklin,J.D		
21.155	810699	10.4	M	CZ ORI	1	4			0.080	B		20	5.8	Y	1	Stott,D		
21.16	810700	9.2	S	SU+YTAU	5	3	0.12	270	0.100	N	9	23	6.6	Y	1	van de Weg,R.L.W		
21.177	810701				2	2			0.089	R	5.5	18	5.4	N	1	Ventura,F		
21.235	810702				2.0	6			0.445	N	4.5	80	6.7	Y	3	Morrison,W		
21.34	810703	9.6	S	LNES	1.6	5			0.229	R	12	86				Green,D.W.E	G	
21.35	810704	9.3	M	LNES	1.5	6			0.229	R	12	261				Green,D.W.E	G	
21.35	810705	9.6	S	LNES	1.5	6			0.229	R	12	261				Green,D.W.E	G	
21.352	810706	10.0	S	Y TAU	3.2	4			0.15	R	5	62	6.7	Y	3	Morrison,W	J	
21.37	810707	9.1	M	LNES	2.5	6			0.229	R	12	86				Green,D.W.E	G	
21.37	810708	9.1	M	SU TAU	2.5	6			0.229	R	12	86				Green,D.W.E	G	
21.37	810709	9.3	S	LNES	2.5	6			0.229	R	12	86				Green,D.W.E	G	
21.37	810710	9.3	S	SU TAU	2.5	6			0.229	R	12	86				Green,D.W.E	G	
21.406	810711	10.0	S	Y TAURI	2.7	1			0.25	N	5.6	56	6	Y	1	Jordan,J	K	
21.47	810712	8.9	Y TAU	11	3				0.040	B		8	6.5	Y	1	Keen,R	L	
21.604	810713	11.5	M		1	6			0.44	N	4.5	225	5.5	Y	1	Fabre,R		
21.69	810714	9.1	S	SUTAU59					0.152	N	5	76				Seargent,D		
21.69	810715	9.1	S	SUTAU59	3	6			0.152	N	5	29	6.2	Y	1	Seargent,D		
21.760	810716	10.3	S	59 YTAU	0.9	1			0.152	N	8	64		Y	1	Tregaskis,T.B	M	
21.965	810717	9.6	S	Y TAU	3.5	4			0.08	B		15	6.2	Y	3	Haver,R	N	
21.965	810718	10.0	B		2.0				0.200	N	7.2	36	4.5M	Y	1	Lipski,P	O	
21.979	810719	10.0	S	59	1.5	2			0.09	M	11	56	5.0C	Y	1	Westlund,M	P	

NOTE A Magnitude of "stellar" condensation. Diameter less than 0.1 arc min.

NOTE B Coma diameter approximate. Halley also visible in 15x50 finder (refractor).

NOTE C 2.7' coma, averted vision.

NOTE D 2.4' coma, averted vision.

NOTE E 1.9' coma, averted vision.

NOTE F 1.2' coma, averted vision.

NOTE G Coma diameter approximate.

NOTE H Seeing good, transparency good/fair. Dev.

NOTE I Central condensation 0.7 arc min.

NOTE J SU Tau and CZ Ori also used for comparison stars.

NOTE K Sky conditions were good this morning, although not as dark as in previous observation due to increased sky glow.

NOTE L Modified Sidgwick method used.

NOTE M Slight haze dawn breaking. Observing comet directly over glow of Melbourne to the north. Faintest star seen in instrument 11.7.

NOTE N Perhaps lengthening. (Translated by IHN staff. Ed.)

NOTE O Round. Star occultation.

NOTE P Milky Way.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
21.033	830100	0.03	0.83	R	19.7	800	20		3	Soc. Astro. de France A	
21.061	830101	0.29	0.400	N	5	40,222	13	5.5	2	Sarocchi,D	B
21.065	830102	0.03	0.83	R	19.7	540	13		3	Soc. Astro. de France C	
21.077	830103	0.08	0.83	R	19.7	320	12		3	Soc. Astro. de France D	
21.086	830104	0.05	0.83	R	19.7	320	9		3	Soc. Astro. de France E	
21.174	830105	1	0.229	R	10	100	20	6.0	1	Nowak,G.T	F
21.176	830106	0.29	0.400	N	5	40, 71	21	5.6	2	Sarocchi,D	B
21.976	830107	1.6	0.090	M	11	56	10	5.0	1	Westlund,M	G

NOTE A Streamer at PA 118, 20" long; streamer at PA 195, 16" long. Drawing made by J. Philippe Garsztk.

NOTE B DC 3 (or 4?).

NOTE C Streamer at PA 135, 36" long; streamer at PA 185, 30" long. Drawing made by J. Claude Thorel.

NOTE D Jet at PA 135, 15" long. Drawing made by J. Philippe Garsztk.

NOTE E Streamer at PA 140, 36" long; condensation at PA 185, 30" long. Drawing made by J. Claude Thorel.

NOTE F Note jets coming out of nucleus.

NOTE G Background sky lights: Milky Way, city lights.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
21.075	850071	0.950	4.7	0.20	2.2 x 1.4	5.00	Kodak 2415		Y		1/P	1	Conrad,R	A
21.139	850072	1.750	5	0.350	1.2 x 0.8	36.52	Kodak 2415		Y	M	3/P	1	Mobberley,M	
21.893	850073	1.800		0.28	1.1 x 0.8	7.05	Kodak Tri-X	400/27	N		5/N	1	Darvann,T.A	B

NOTE A City lights interfered with the observation; Vienna, from room!

NOTE B (Observer's image identifier is 5A. Ed.) (Instrument FL of 2.800 and separately specified effective FL of approximately 1.800 don't match. Ed.)

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
22.00	810720	9.0	S	Y TAU	6				0.203	C	10	65	5.5C	Y	3	Comello,G	A
22.000	810721	10.4			1.5	5			0.254	N	7	116	5.5	Y	1	Sternwarte Hof	
22.003	810722	10.8	M	CZ ORI	1.5	6			0.22	N	8	90	5.6	Y	1	Fleet,R.W	B
22.01	810723	9.2	S	Y TAU	3	4			0.150	R	15	31	5 C	Y	1	Geenen,J.J	
22.03	810724	9.6	SU	TAU	3	2			0.102	R		60	4.5C	Y	1	van Asperen,B	
22.042	810725	10.1	AAVSO		2	5			0.36	SC	11	330	4	Y		Korth,S	C
22.042	810726	11.5			3.5	1			0.13	R	10	50		Y	1	Morrisby,A	D
22.043	810727	10.0	B		2.5	5			0.200	N	7.2	36	5.0M	Y	1	Lipski,P	E
22.065	810728	10.5	S	Y TAU	2.0	6			0.13	R	4	21	5.0	Y	1	Campos,J	F
22.066	810729	10.7	M	CZ ORI	1.2	5			0.15	N	4	50	5.7	Y	1	Fleet,R.W	G
22.073	810730	12.7	M	CZ ORI					0.22	N	8	90	5.7	Y	1	Fleet,R.W	H
22.076	810731	10.6	M	CZ ORI	1.5	6			0.22	N	8	90	5.7	Y	1	Fleet,R.W	B
22.083	810732	10.6	M	CZ ORI	1.7	6			0.35	N	5.5	100	5.7	Y	1	Fleet,R.W	I
22.118	810733	10.3	B	SA 74	2.9	4			0.250	N	6	75	6.0	Y	1	Guthier,O	
22.12	810734	9.1	S		4.5	5			0.254	N	4.5	46	6.2	Y	2	Zanotta,M.V	J
22.13	810735	9.4	S	Y TAU	5	5			0.250	N	5.6	56	6	Y	1	van Loo,F.R	
22.13	810736	10.3	B	SU TAU					0.250	N	5.6	56	6	Y	1	van Loo,F.R	
22.13	810737	10.8	B	SU TAU	3.5	4			0.115	N	8	45	6	Y	1	van Munster,T	A
22.14	810738	10.8	S	SU TAU	3.0	5			0.203	SC	10	50	6.0	N	1	Schmeer,P	
22.14	810739	10.6	S	SU TAU	2	5			0.254	JB	6	76	4.5C	Y	1	Wils,P	
22.15	810740	9.1	S		4.2	5			0.080	B		20	6.2	Y	2	Zanotta,M.V	
22.164	810741	10.7	B		1	3			0.063	R	13	34	6.0	Y	1	Zische,E	
22.17	810742	10.1	S	SU TAU	3	5			0.150	R	8	68	5 C	N	1	Aerts,L	
22.299	810743	9.7	M	Y TAU	6.0	7			0.254	N	5.6	120	6.3	Y	1	Knight,S	K
22.32	810744	8.4	S	SU TAU	7				0.050	B		10				Bortle,J.E	L
22.32	810745	8.6	S	SU TAU	8	2			0.080	B		20				Bortle,J.E	M
22.32	810746	9.0	S	SU TAU	3.4	6			0.317	N	6	68				Bortle,J.E	N
22.323	810747	10.5	S		16				0.203	SC	10	80	4.5C	Y	1	Gronex,J.D	O
22.34	810748	8.9	M	SU TAU	2.5	6			0.229	R	12	86				Green,D.W.E	A
22.34	810749	9.0	S	SU TAU	2.5	6			0.229	R	12	86				Green,D.W.E	A
22.35	810750	8.8	M	Y TAU	2.5	6			0.229	R	12	86				Green,D.W.E	A
22.35	810751	9.0	S	Y TAU	2.5	6			0.229	R	12	86				Green,D.W.E	A
22.375	810752	11.0	M	59	0.5	5			0.44	N	4.5	222	5.2	Y	1	Falvo,S.A	P
22.64	810753	10.0	B		4	3			0.16	N	4.8	24		Y	1	Maeda,S	
22.68	810754	10.0			3	4			0.31	N	5.7	55	5.0	Y	2	Suzuki,K	
22.69	810755	10.7	M		1.8	4			0.16	N	6.3	80	6	Y	1	Mitsuma,S	
22.70	810756	10.0	M		3.4	4			0.16	N	6.3	31	6	Y	1	Mitsuma,S	Q
22.729	810757	10.9	S	Y TAU					0.065	R	7.7	27	5.0	Y	1	Date,M	
22.75	810758	10.6	S		2.5	6			0.26	N	5	53	5.5	Y	1	Kasai,K	
22.76	810759	9.6	S	AAVSO	4.5	4			0.20	N	5.6	44	5.0	Y	2	Nakamura,A	
22.76	810760	10.0	B	AAVSO					0.20	N	5.6	44		Y		Nakamura,A	
22.78	810761	11.2	S	AAVSO	1.3	4			0.13	N	6.3	64	5.5	Y	1	Hayashi,A	
22.92	810762	10.1	B	AAVSO	3.7	4			0.12	R	5	35				Chernis,K	
22.947	810763	10.2	S	SU TAU	2	5			0.152	N	5	44	5.7	Y	2	Hoeller,M	R
22.95	810764	10.0	B	AAVSO	2.5	5			0.20	N	5	35				Tsvetkov,L	

NOTE A Coma diameter approximate.

NOTE B 2.7' coma, averted vision.

NOTE C Coma diameter uncertain.

NOTE D Coma maybe slightly elongated.

NOTE E Small nucleus. Magnification of 57 also used.

NOTE F Round coma with central condensation.

NOTE G 2.4' coma, averted vision.

NOTE H Central condensation magnitude.

NOTE I 2.9' coma, averted vision.

NOTE J Circular with strong well-defined central condensation (diameter = 1') brighter toward middle (190x). Extremely diffuse outer coma. 114x: star-like nuclear region of magnitude approximately 12.0, but difficult for the bright and strong central condensation

NOTE K Stellar nucleus.

NOTE L Just easily detected. [sic]

NOTE M Large, bright object.

NOTE N Cond. (0.1-0.2'), mag. 11.5.

NOTE O Exc. see.

NOTE P Comet seems to have dimmed noticeably. The nuclear condensation more prominent at low power (80x) but still visible at 222x. Coma diameter remains at larger value, even though it is not as bright, 0.48' arc. The "nucleus" is not as prominent this observing run.

NOTE Q Tail not seen.

NOTE R Condens. 11.8 mag. Moon.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
22.125	830108	0.28	0.356	SC	11	200			1	Verdenet,M	A
22.157	830109	0.05	0.83	R	19.7	800	10	5.1	3	Soc. Astro. de France	B
22.380	830110		0.44	N	4.5	222	15	5.2	1	Falvo,S.A	

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Jet at PA 35, 9" long; jet at PA 185, 14" long; jet at PA 60, 13" long. Drawing made by Alain Perez.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
22.346	850074	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak 2415		Y	S	4/P	1	Dilsizian,R	
22.422	850075	0.305	2.5	0.122	6.8 x 4.5	4.00	Kodak Tri-X	400/	N	S	45/P	1	Minton,R.B	A
22.451	850076	2.306	5	0.45	0.9 x 0.6	38.00	Kodak Tri-X		N	M	5/S	1	Webb,R	B
22.776	850077	0.850	3.4	0.25	2.4 x 1.6	10.00	Kodak 6415		Y	C	1/P	1	Kojima,T	C

NOTE A (Print submitted by observer is a composite of two 2 min. exposures separated by 6 min. Ed.)

NOTE B Inner coma and starlike central condensation visible on all original negatives. Film push processed slightly. (Observer indicated C-type guiding as well as M. Ed.)

NOTE C Instrument is Wright-Schmidt. Large format (120 size) film used.

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
23.000	810765	11	S	CZ		5			0.16	R		50	5.4	Y	1	Silhan,J	A
23.007	810766	10.5	S	SU TAU	1.4	3			0.25	N	6	120	4.4	Y	1	Gainsford,M.J	B
23.01	810767	8.8	S	Y TAU	5.5	4			0.156	N	5	24	6	Y	2	Bouma,R.J	
23.021	810768	10.5	M	CZ ORI	1.4	6			0.15	N	4	50	5.8	Y	1	Fleet,R.W	C
23.035	810769	10.7	M	CZ ORI	1.5				0.22	N	8	90	5.8	Y	1	Fleet,R.W	D
23.052	810770	10.4	M	CZ ORI	1.8	6			0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	C
23.083	810771	10.0	B		2.5	5			0.200	N	7.2	36	5.0M	Y	1	Lipski,P	E
23.097	810772	10.1	S	Y TAU	2.3	4			0.203	SC	10	50	5	Y	1	Tanti,T	F
23.10	810773	9.1	S		6	5			0.254	N	4.5	46	6.4	Y	2	Zanotta,M.V	G
23.11	810774	9.2	S		6	5			0.080	B		20	6.4	Y	2	Zanotta,M.V	
23.16	810775	8.9	S	Y TAU	6	3	0.15	260	0.100	N	9	23	6.6	Y	1	van de Weg,R.L.W	H
23.16	810776	9.4	B	Y TAU	6	3	0.15	260	0.100	N	9	23	6.6	Y	1	van de Weg,R.L.W	
23.27	810777	9.1	S	Y TAU					0.203	N	6	116				Green,D.W.E	
23.28	810778	8.8	M	Y TAU					0.203	N	6	116				Green,D.W.E	
23.35	810779	8.5	M	Y TAU	7.8	6			0.203	N	6	38				Green,D.W.E	I
23.35	810780	8.7	S	Y TAU	7.8	6			0.203	N	6	38				Green,D.W.E	I
23.354	810781	11.5	M	S9	0.5	6			0.44	N	4.5	222	5.2	Y	1	Falvo,S.A	J
23.36	810782	8.6	S	SU TAU	8	2			0.080	B		20				Bortle,J.E	
23.36	810783	8.7	S	Y TAU	7.8	3			0.080	B		20				Green,D.W.E	I
23.36	810784	9.0	S	SU TAU	4.0	7			0.317	M	6	68				Bortle,J.E	K
23.42	810785	8.8	S	Y TAU	7	2			0.080	B		20	6.5	Y	6	Morris,C.S	
23.42	810786	8.9	S	NPS					0.080	B		20	6.5	Y	6	Morris,C.S	
23.552	810787	11.3	M		1.1	6			0.44	N	4.5	90	5.5	Y	1	Fabre,R	
23.71	810788	10.0	S	S9	2	0			0.15	N	5.3	32	5.5	Y	1	Oka,A	
23.71	810789	9.3	S	S9	1.8	6			0.152	N	5	76	6.2	Y	1	Saargent,D	
23.71736	810790	10.5	B	S9	2.2	3			0.25	N	8	63	6.0	Y	2	Okumura,S	
23.76	810791	9.9	S	AAVSO	4	4			0.20	N	5.6	44	6.0	Y	5	Nakamura,A	
23.76	810792	10.3	B	AAVSO					0.20	N	5.6	44		Y		Nakamura,A	
23.79	810793	11.2	S	AAVSO	1.3	4			0.13	N	6.3	64	5.0	Y	1	Hayashi,A	
23.958	810794	10.7	M	AAVSO	1	2			0.063	R	13.3	52				Kosa-Kiss,A	

NOTE A Coma dia. 10/5.

NOTE B Misty.

NOTE C 3.0' coma, averted vision.

NOTE D 2.7' coma, averted vision.

NOTE E Small nucleus.

NOTE F Seeing good, transparency good. Clouds.

NOTE G Circular, at 114x central condensation and star-like nuclear region of magnitude approximately 12.0.

NOTE H Also visible in 12x60 mm binoculars.

NOTE I Coma diameter approximate.

NOTE J It seems even more unlikely, but the comet appears to have gotten still dimmer. Defocusing a stellar image to the coma size, demonstrated a brightness barely above background, which was duplicated nicely by an 11.5 mag. star. Nucleus appeared prominently, almost stellar, when in focus.

NOTE K Stellar nuc. of 13.3. Coma diameter = 4.0+ arc min.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)
23.161	830111	0.26	0.356	SC	11	200	15		1	Verdenet,M
23.365	830112		0.44	N	4.5	80,150,222	30	5.2	1	Falvo,S.A

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
23.349	850078	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak 2415		Y	S	5/P	1	Dilsizian,R

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	
24.010	810795	10.6	S	59	1.2	3			0.250	N	6	55	5.5	N	1	Lunde,R		
24.01	810796	9.7	S	Y TAU	3	3			0.150	R	15	110	4.5M	Y	1	Geenen,J.J		
24.05	810797	9.4	S	Y TAU		3			0.110	N	5	31	6	C	Y	1	Feijth,H	
24.052	810798	12.6		CZ ORI					0.15	N	4	50	5.6	Y	1	Fleet,R.W	A	
24.056	810799	10.7	M	CZ ORI	0.9	6			0.15	N	4	50	5.6	Y	1	Fleet,R.W	B	
24.059	810800	10.0	S	59	1.5	2			0.09	M	11	56	5.5	Y	2	Westlund,M	C	
24.06	810801	9.1	S	Y TAU	6	3			0.250	N	5.6	56	6	Y	1	van Loo,F.R		
24.06	810802	9.8	B	Y TAU					0.250	N	5.6	56	6	Y	1	van Loo,F.R		
24.062	810803	11.5:			4	3			0.13	R	10	50		Y	1	Morrisby,A	D	
24.069	810804	11 :		CZ					0.16	R		50	6.1	Y	1	Silhan,J	E	
24.08	810805	9.8	S	SU TAU	3				0.080	B		20	6.0	N	1	Schmeer,P		
24.080	810806	12.7		CZ ORI					0.22	N	8	90	5.7	Y	1	Fleet,R.W	A	
24.083	810807	10.6	M	CZ ORI	0.9	6			0.22	N	8	90	5.7	Y	1	Fleet,R.W	F	
24.0937	810808	10.0	S	Y TAU	4	6			0.11	R	11	36	5.8	Y	1	Znasik,M		
24.094	810809	10.7	M	CZ ORI	1.1				0.35	N	5.5	100	5.6	Y	1	Fleet,R.W	G	
24.10	810810	9.8	B	SU TAU	2.4	6			0.203	SC	10	50	5.5	N	1	Schmeer,P		
24.104	810811	10.1	S	Y TAU	2.3	4			0.203	SC	10	50	5.5	Y	1	Tanti,T	H	
24.11	810812	8.7	S	Y TAU	5	5			0.156	N	5	24	6.5	Y	2	Bouma,R.J	I	
24.125	810813	9.9	B	SAOSA74	2.7	4			0.250	N	6	75	5.5	Y	1	Guthier,O	J	
24.125	810814	9.6	S		2.5	2			0.089	R	5.5	18	5.5	N	1	Ventura,F		
24.16	810815	9.6	S	SU TAU	2.5	6			0.254	N	5.6	70	6	C	Y	1	Kuipers,G	
24.16	810816	9.6	S	SU TAU	2.5	6			0.254	N	5.6	70	6	C	Y	1	Kroon,B	
24.17	810817	10.1	S	SU TAU	5.5	5			0.150	R	8	68	6	C	Y	1	Aerts,L	I
24.17	810818		V	SU TAU					0.150	R	8	150	6	C	Y	1	Aerts,L	K
24.17	810819	9.0	S	Y TAU	6	3			0.100	B		14	6.5	Y	1	van Loo,F.R		
24.18	810820	8.8	S	Y TAU	5	3	0.12	270	0.100	N	9	23	6.7	Y	1	van de Weg,R.L.W		
24.18	810821	9.3	B	Y TAU	5	3	0.12	270	0.100	N	9	23	6.7	Y	1	van de Weg,R.L.W		
24.36	810822	8.8	S	Y TAU	5.8	3			0.203	N	6	38				Green,D.W.E	I	
24.36	810823	8.8	S	Y TAU	4.9	5			0.203	N	6	116				Green,D.W.E	I	
24.38	810824	8.8	M	Y TAU					0.203	N	6	38				Green,D.W.E		
24.38	810825	8.5	S	Y TAU	8.7	4			0.080	B		20				Green,D.W.E	I	
24.469	810826	8.4	B	59	5	4			0.203	R	13	85	4.9	Y	1	Fox,J.H	L	
24.745	810827	10.3	S		3.0	3			0.16	N	6.3	31	6	Y	1	Mitsuma,S	M	
24.76	810828	10.6	M		1.9	4			0.16	N	6.3	80	6	Y	1	Mitsuma,S		
24.78	810829	11.0	S	AAVS0	1.7	4			0.13	N	6.3	64	6.0	Y	1	Hayashi,A		
24.79	810830	10.8	S	AAVS0	2.8	5			0.13	N	6.3	44	6.0	Y	1	Hayashi,A		
24.938	810831	10.5	S		2	7			0.20	SC	10	111	5.5	Y	1	Bremseth,P.-J		
24.948	810832	10.0	S	Y TAU					0.15	N	6.6	100	4.4M		1	Dal Santo,M		
24.979	810833	10.0	S	SU TAU	2	5			0.203	SC	10	50	5.1		1	Foulkes,M	N	

NOTE A Central condensation magnitude.

NOTE B 2.3' coma, averted vision.

NOTE C Milky Way.

NOTE D No tail.

NOTE E Uncertain (faint star in coma).

NOTE F 2.4' coma, averted vision.

NOTE G 2.6' coma, averted vision.

NOTE H Seeing good, transparency excellent.

NOTE I Coma diameter approximate.

NOTE J Inner coma = 40 arc sec.

NOTE K Magnitude of "stellar" condensation 13.0:.

NOTE L ML comparison.

NOTE M Tail not seen.

NOTE N Moon up.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
24.054	830113	1.6	0.090	M	11	56	15	5.5	2	Westlund,M	A
24.137	830114	0.04	0.83	R	19.7	800	14	5.9	3	Soc. Astro. de France	B
24.151	830115	0.05	0.83	R	19.7	800	14	5.9	3	Soc. Astro. de France	C
24.467	830116	0.6	0.203	R	13	85	5	4.9	1	Fox,J.H	

NOTE A Background sky lights: Milky Way.

NOTE B Jet at PA 57, 14" long; streamer at PA 200, 30" long; ion tail at PA 255, 32" long; streamer at PA 300, 22" long; jet at PA 345, 10" long. Jet at PA 57 uncertain. Drawing made by Serge Thebault.

NOTE C Jet at PA 10, 9" long; jet at PA 62, 8" long; streamer at PA 188, 15" long; streamer at PA 240, 27" long; streamer at PA 297, 18" long. Drawing made by Alain Perez.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
24.076	850079	0.750	6.3		2.7 x 1.8	28.00	ORWO	400/27	N	C	1/N	1	Znasik,M	A

NOTE A Large format (11.8x8.6 cm) film used.

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)	Notes
25.050	810834	9.6	S	Y TAU	1.5		5		0.203	SC	10	81	4.5C	Y	1	Kammerer,A	
25.063	810835	10.2	M	CZ ORI	1.1	6			0.15	N	4	50	5.7	Y	5	Fleet,R.W	A
25.069	810836	12.6		CZ ORI					0.15	N	4	50	5.7	Y	5	Fleet,R.W	B
25.104	810837	9.5	B	59	2.0	4			0.10	B		14	6.0	Y	1	Hasubick,W	
25.12	810838	10.6		VAS 132	0.6	2			0.205	N	6	80	5.5	Y	1	Germann,R	
25.122	810839	9.4	S	Y TAU	3.7	3			0.07	B		20	5	Y	1	Tanti,T	C
25.145	810840	10.5	M	AAVSO	2	3			0.063	R	13.3	52				Kosa-Kiss,A	
25.15	810841	8.6	S	Y TAU	5	3			0.100	N	9	23	6.6	Y	1	van de Weg,R.L.W	
25.15	810842	9.3		SACC	4	4	0.08	270	0.355	SC	11	200			1	Verdenet,M	
25.18	810843	9.9	B	SU TAU	1.9	5			0.203	SC	10	50	5.5	N	1	Schmeer,P	
25.19	810844	10.1	S	SU TAU	5.5	5			0.150	R	8	34	5.5C	Y	1	Aerts,L	D
25.201	810845	10.3	M	CZ ORI	1	4			0.080	B		20	5.8	Y	1	Stott,D	
25.210	810846	10.8	B	CZ ORI	1.0	2			0.20	SC	10	77	5.5	Y	1	Ward,A	E
25.292	810847	9.8	S	Y TAU	1.5	6			0.30	R	15	225	5.0M	Y	2	Franch,J	F
25.369	810848	10.2	S	Y TAU	2.4	3			0.15	R	5	62	6.7	Y	3	Morrison,W	G
25.44	810849	9.3	B		3.0	7			0.335	N	4.5	84	5.5	Y		Kronk,G	H
25.47	810850	8.4		Y TAU	11	2			0.040	B		8	6.0	Y	1	Keen,R	I
25.49	810851	8.8	M	Y TAU	10	5			0.032	N	4	80	6.0	Y	1	Keen,R	
25.49	810852	8.7	S	Y TAU	8	2			0.080	B		20	6.0	Y	6	Morris,C.S	
25.49	810853	8.8	S	NPS					0.080	B		20	6.0	Y	6	Morris,C.S	
25.755	810854	11.6	M	59	3.2	5			0.1	N	10	56	4.0	Y	1	Ichikawa,K	

NOTE A 3.0' coma, averted vision.

NOTE B Central condensation magnitude.

NOTE C Seeing good, transparency good.

NOTE D Coma diameter approximate.

NOTE E Much fainter than expected.

NOTE F Strong moonlight.

NOTE G Involved with a group of stars. SU Tau and CZ Ori also used for comparison stars.

NOTE H Exceptionally clear.

NOTE I Modified Sidgwick method used.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
25.156	830117	0.25	0.356	SC	11	200	30		1	Verdenet,M	
25.158	830118	0.04	0.83	R	19.7	800	14	5.7	3	Soc. Astro. de France A	

NOTE A Jet at PA 120, 12" long; streamer at PA 210, 40" long; ion tail at PA 260, 40" long; streamer at PA 310, 40" long; jet at PA 355, 15" long. Drawing made by Serge Thebault.

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
26.132	810855	9.6	S		3	2			0.089	R	5.5	18	5.0	N	1	Ventura,F	
26.139	810856	9.6	B	SAOSA74	3.2	4			0.250	N	6	75	5.3	Y	1	Guthier,O	A
26.140	810857	8.1	S	SAO					0.31	N	5	62				Giampaolo,G	
26.151	810858	10.3	M	AAVSO	2	3			0.063	R	13.5	52				Kosa-Kiss,A	
26.17	810859	9.1	S		6.2	5			0.080	B		20	6.4	Y	2	Zanotta,M.V	B
26.18	810860	9.2	B	U ORI	4.0	4	0.03	284	0.400	N	5	81	6.5	Y	2	Merlin,J.-C	
26.18	810861	8.4	S	Y TAU	6	3			0.100	N	9	23	6.5	Y	1	van de Weg,R.L.W	
26.18	810862	8.8	B	Y TAU	6	3			0.100	N	9	23	6.5	Y	1	van de Weg,R.L.W	
26.19	810863	9.0		SAOC	7	4	0.13	260	0.355	SC	11	200			1	Verdenet,M	
26.28	810864	8.2	M	Y TAU	4.0	6			0.229	R	12	86				Green,D.W.E	C
26.28	810865	8.3	S	Y TAU	4.0	6			0.229	R	12	86				Green,D.W.E	C
26.333	810866	9.7	S	Y TAU	1.6	6			0.30	R	15	225	5.0M	Y	2	Franch,J	D
26.372	810867	9.5	M	SU TAU	1.2	4			0.254	N	4.5	46	5.0	Y	3	DeYoung,J.A	
26.38	810868	8.8	S	Y TAU	2.5	6			0.203	N	6	116				Green,D.W.E	C
26.41	810869	8.5	S	Y TAU	8	6			0.203	N	6	38				Green,D.W.E	C
26.41	810870	8.9	S	SU TAU	3.2	6			0.317	N	6	68				Bortle,J.E	E
26.416	810871	9.7	S	Y TAURI	2.3	1			0.25	N	5.6	56	6 M	Y	1	Jordan,J	F
26.52	810872	8.7	S	Y TAU	8				0.080	B		20	6.0	Y	6	Morris,C.S	
26.52	810873	8.8	S	NPS					0.080	B		20	6.0	Y	6	Morris,C.S	
26.5424	810874	9.8	S	U ORI	4.0	7			0.254	N	3.8	64	6.2			Machholz,D	
26.82	810875	9.6	M	59	4.1	5			0.150	N	6	51	4.5C	Y	1	Natanabe,N	
26.83	810876	8.9	S	59	3	4			0.15	N	5.3	32	5.5	Y	1	Oka,A	

NOTE A Inner coma 40 arc sec.

NOTE B The comet was visible in a 9x60 finder scope. With my 30.5 cm f/5 Newtonian at 60x I saw a strong central condensation (diameter 0.7') and a star-like nuclear region (magnitude = 12.0). Probable coma extension on PA = 98 deg.

NOTE C Coma diameter approximate.

NOTE D Strong moonlight.

NOTE E Cond. mag. 11.1.

NOTE F Comet seen under excellent skies, although moonlight was troublesome at beginning of observation. Coma still circular with slight degree of condensation surrounding nucleus.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
26.188	830119	0.25	0.356	SC	11	200			1	Verdenet,M	A
26.193	830120	0.09	0.40	N	5	81,254	15	6.5	2	Merlin,J.-C	B
26.392	830121	0.44	N		4.5	150,222,444	70	4.5	1	Falvo,S.A	

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Jet at PA 75, then curved toward PA 125; jet at PA 125; jet at PA 159. Tail at PA 259, PA given = axis of parabolic hood nearly tailward. Tail at PA 284, straight, narrow and bright. Denser area continuing jets #1-2-3, to south-east. Quasi stellar center.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
26.277	850080	2.000	10	0.203	1.0 x 0.7	3.00	Kodak Tri-X		N		91/P		Gianforte,J.S	A
26.296	850081	2.000	10	0.203	1.0 x 0.7	9.00	Kodak Tri-X		N		94/P		Gianforte,J.S	B
26.380	850082	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak 2415		Y	S	6/P	1	Dilsizian,R	

NOTE A (Observer's image identifier is 99-1. Ed.) (Observer listed emulsion speed as ASA 800. Ed.)

NOTE B (Observer's image identifier is 99-4. Ed.) (Observer listed emulsion speed as ASA 800. Ed.)

DATE: 27 OCT 1985

DATE: 27 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
27.135	810877	8.6	S	SAO					0.31	N	5	62				Giampaolo,G	
27.18	810878	9.0	S		6.3	3			0.080	B		20	6.4	Y	2	Zanotta,M.V	A
27.37	810879	8.2	M	Y TAU	4	7			0.229	R	12	86				Green,D.W.E	B
27.37	810880	8.4	S	Y TAU	4	7			0.229	R	12	86				Green,D.W.E	B
27.446	810881	11.6	S	59,Y TAU	0.1	1			0.15	N	8	100	5.0MZ	Y	1	Donth,D	
27.619	810882	10.2	M		1				0.10	N	10	111	4.5M	Y	1	Kato,T	C
27.67	810883	10.3	S	Y TAU	2				0.317	N	5	86	4.3	Y		Jones,A	

NOTE A Diffuse moonlight.

NOTE B Coma diameter approximate.

NOTE C Condensation mag. = 12.5.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
27.456	830122	0.2	0.15	N	8	100	30	5.0	1	Donth,D	A

NOTE A The comet appeared as a small circular hazy patch approximately 12 arc seconds in diameter and it appeared to be fainter than the 11.1 mag. star located a few arc seconds west of it. I could not detect any indication of a tail or nucleus and I would estimate the degree of coma condensation to be "0". As noted, however, the moon and morning twilight did interfere with this observation.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
27.418	850083	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	S	7/P	1	Dilsizian,R



DATE: 28 OCT 1985

DATE: 28 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
28.36	810884	8.2	M	Y TAU	4	6			0.229	R	12	86				Green,D.W.E	A
28.36	810885	8.2	S	Y TAU	4	6			0.229	R	12	86				Green,D.W.E	A
28.73	810886	9.7	S		3.1	4			0.16	N	6.3	31	5.5	Y	1	Mitsuma,S	B
28.73	810887	8.9	M	59	2.6	5			0.150	N	6	51	6.5	Y	2	Watanabe,N	
28.740	810888	10.4	M	59	2.0	6			0.1	N	10	56	5.5	Y	1	Ichikawa,K	
28.74	810889	10.3	M		2.0	4			0.16	N	6.3	80	5.5	Y	1	Mitsuma,S	C
28.75	810890	8.6	S	Y TAU	5	7			0.20	N	6.3	50	6.0T	Y	1	Lovejoy,T	D
28.75	810891	8.2	S	59					0.08	B		15	6	Y	1	Seargent,D	E
28.75	810892	9			2	3			0.08	B		20	5.5	Y	1	Speil,J	
28.77	810893	9.3	S		2.9	6			0.26	N	5	53	5.5	Y	1	Kanai,K	
28.78	810894	10.6	S	AAVSO	3	4			0.13	N	6.3	44	5.5M	Y	1	Hayashi,A	
28.78	810895	9.3:	B	AAVSO	3				0.12	R	5	35		Y	1	Chernis,K	A

NOTE A Coma diameter approximate.

NOTE B A total eclipse of the moon.

NOTE C A total eclipse of the moon. Tail not seen.

NOTE D Coma diameter is lower limit. During lunar eclipse.

NOTE E Lunar eclipse. (PA value may have been incorrectly determined. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
28.415	830123		0.44	N	4.5	75,222	45	4.2	1	Falvo,S.A	A

NOTE A Faint star seen shining through edge of coma.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
28.706	850084	0.850	3.4	0.25	2.4 x 1.6	10.00	Kodak 6415		Y	C	2/P	1	Kojima,T	A
28.766	850085	0.300	1.5		6.9 x 4.6	10.00	Kodak 2415		Y	S	1/P	2	Nassar,J.L	B

NOTE A Instrument is Wright-Schmidt. Large format (120 size) film used.

NOTE B Conjunction of comet with M1 nebula photographed during a total eclipse visible from the Philippines.

DATE: 29 OCT 1985

DATE: 29 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
29.30	810896	9.8:	M	Y TAU	2	3			0.32	N	4	40	3.0	Y	1	Keen,R	A
29.354	810897	9.2	M	AAVSO	93				0.23	R	12	120				O'Heara,S.J	B
29.38	810898	8.4	M	Y TAU	3	6			0.229	R	12	86				Green,D.W.E	C
29.38	810899	8.6	M	Y TAU	2	6			0.229	R	12	261				Green,D.W.E	C
29.38	810900	8.6	S	Y TAU	3	6			0.229	R	12	86				Green,D.W.E	C
29.38	810901	8.8	S	Y TAU	2	6			0.229	R	12	261				Green,D.W.E	C
29.43	810902	7.8	S	Y TAU	5	3			0.080	B		20				Green,D.W.E	C

NOTE A Bright moon and cirrus clouds.

NOTE B Nuclear mag. 14.8.

NOTE C Coma diameter approximate.

DATE: 30 OCT 1985

DATE: 30 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
30.05	810903	8.3	B	AAVSO	10				0.25	R	17	300				Churyumov, K	A
30.17	810904	8.1	S	Y TAU	3	5			0.229	R	12	86				Green, D.W.E	A
30.568	810905	9.8	M		1	6			0.20	SC	10	100	5.0M	Y	1	Kato, T	

NOTE A Coma diameter approximate.

DATE: 30 OCT 1985

DATE: 30 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
30.05	810903	8.3	B	AAVSO	10				0.25	R	17	300				Churyumov, K	A
30.17	810904	8.1	S	Y TAU	3	5			0.229	R	12	86				Green, D.W.E	A
30.568	810905	9.8	M		1	6			0.20	SC	10	100	5.0M	Y	1	Kato, T	

NOTE A Coma diameter approximate.

DATE: 31 OCT 1985

DATE: 31 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)
31.153	810906	11	:	S	0.7	2			0.15	N	8	96	5.0	Y	1	Bottger,B

DATE: 1 NOV 1985

DATE: 1 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
1.20	810907	8.8:	S	Y TAU	3	2			0.229	R	12	86				Green,D.W.E	A
1.583	810908	10	S						0.20	SC	10	160	M	Y	1	Kato,T	B

NOTE A Coma diameter approximate.

NOTE B Moon approaches. Faintest star by 20 cm = 11.0.

DATE: 2 NOV 1985

DATE: 2 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
2.22	810909	8.4:	M	Y TAU					0.20	N	6	61	5 M	Y	2	Hale,A	A
2.22	810910	8.5:	S	SAO		3			0.080	B		20	3.0M	Y	13	Morris,C.S	B
2.235	810911			59	1	3			0.279	SC	10	166	4	Y	1	Kemble,L.J	C
2.2944	810912	9.3	S	AA	2.5	4			0.152	N	8.0	76	5.0		3	Machholz,D	D
2.390	810913	8.9	S	SU TAU	3.5				0.15	R	5	62	5.0M	N	3	Morrison,W	E
2.517	810914	8.9		59	3.0	5			0.150	B		25	3.0	Y	1	Nakamura,Y	F
2.545	810915	9.8	M	59	2.3	4			0.16	N	6.3	31	4 M	Y	1	Mitsuma,S	
2.55	810916	10.0	M	59	2.1	5			0.16	N	6.3	80	4 M	Y	1	Mitsuma,S	
2.59	810917	9.3	B		6.0	6			0.15	N	8	43	5.0	N	1	Uda,K	
2.619	810918	10.2	M	RR TAU	3.2	2.5	6		0.1	N	10	56	5.5	Y	1	Ichikawa,K	G
2.644	810919	8.3	M		2	5			0.20	SC	10	100	5.0M	Y	1	Kato,T	
2.72	810920	9.6	S	58	2.0	6			0.26	N	5	53	4.5M	Y	1	Kanai,K	
2.750	810921	8.0	M						0.10	N	10	55	5.0M	Y	1	Kato,T	
2.767	810922	4.9	M	59	25	4			0.05	B		20		Y	4	Gallego,J	H
2.825	810923	7.9	S	59	4.0	5			0.08	B		15	4.2M	Y	3	Haver,R	
2.89	810924	8.0		SAOC	4	4			0.355	SC	11	200			1	Vardenet,M	I
2.915	810925	8.7	S	SAO					0.31	N	5	62				Giampaolo,G	
2.915	810926	8.8	S	58	3	4			0.152	N	5	44	4.3	N	2	Moeller,M	J
2.958	810927	8.0	B	59	3	5			0.20	SC	10	117	5.5	Y	1	Ward,A	K
2.962	810928	8.7	S	Y TAU	2.8	5			0.26	N	6	55	4.0M	Y	1	Eurst,G.M	

NOTE A Comet only 4 deg. from waning gibbous moon which rendered observation difficult. Magnitude estimate suspect.

NOTE B Comet very near nearly full moon.

NOTE C My 13th observation. Notable in that the moon was only about 7 deg. away. Could not see M1 on previous night but did see Halley. Mag. estimation impossible. Comets Hartley-Good and Thiele seen in same half-hour.

NOTE D 83% moon 9 degrees away.

NOTE E Moon 13 deg. away.

NOTE F Moonlight.

NOTE G CQ Tau also used for comparison stars.

NOTE H Light pollution.

NOTE I Near moon.

NOTE J Moon.

NOTE K Moon made magnitude estimate difficult.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	Durm	Lim	Site	Observer(s)	Notes
2.767	830124		0.050	B		20			4	Gallego,J	A
2.885	830125	0.25	0.356	SC	11	200			1	Vardenet,M	B
2.974	830126	0.66	0.26	N	6	55	45	4.0	1	Eurst,G.M	C

NOTE A Like a globular cluster. Very condensed. (Duration not indicated. Time of observation is assumed to be end time. Ed.)

NOTE B Near moon. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C Moon close to field but comet still easy to d.v. in telescope as a well condensed, circular object. Hint of structure in coma but too difficult at high powers to draw due to moonlight.

DATE: 3 NOV 1985

DATE: 3 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	
3.00	810929	7.8	S	U ORI	5.6	4			0.080	B		20	5.0M	N	1	Schmeer,P		
3.01	810930	8.6	M	U ORI	2.5	6			0.203	SC	10	80	6.0	Y	1	Granslo,B.H		
3.010	810931	8.0	B	59	3	5			0.20	SC	10	117	5.5	Y	1	Ward,A	A	
3.049	810932	10.2	S	59SUTAU	1.6	3			0.21	N	5.0	66	5.4CM	Y	1	Taylor,M.D	B	
3.130	810933		59		4	5			0.203	R	13	85	3.0	Y	1	Fox,J.H	C	
3.22	810934	8.9	B	59	4.4	6			0.154	N	8.0	68	5.0	Y		Kronk,G		
3.3104	810935	9.1	S	AA	3	4			0.152	N	8.0	76	5.0		3	Machholz,D	D	
3.36	810936	7.5	S	Y TAU	9	3			0.080	B		20	5.0M	Y	5	Morris,C.S		
3.36	810937	7.6	S	59					0.080	B		20	5.0M	Y	5	Morris,C.S		
3.403	810938	9.0	M	59	2.5	6			0.33	N	4.5	70	6.0	Y	2	Fabre,R		
3.48	810939	8.3	S	59	5	6			0.15	N	5.3	32	5.0C	Y	1	Oka,A		
3.531	810940	8.4		59	6.0	5			0.150	B		25	4.0	Y	1	Nakamura,Y	E	
3.675	810941	10.0	M	RR TAU	3	2			0.1	N	10	56	5.5	Y	1	Ichikawa,K	F	
3.71	810942	9.3	M	59	3.2	3			0.16	N	6.3	31	5	M	Y	1	Mitsuma,S	
3.715	810943	8.7	B	59	10	3			0.25	SC	10	100	4.9	Y	3	Bembrick,C	G	
3.72	810944	9.8	M	59	2.0	4			0.16	N	6.3	80	5	M	Y	1	Mitsuma,S	
3.806	810945	9.2	B	59	2.0	3			0.165	N	8.7	57	6.0	Y	1	Bohme,D		
3.81	810946	10.0	S	AAVSO	2.5	4			0.13	N	6.3	44	4.0M	Y	1	Hayashi,A		
3.81	810947	7.7	S	DCS 2B	15	4			0.060	B		12	5.5	Y	3	van de Weg,R.L.W	H	
3.82	810948	9		59	2	3			0.200	SC	10	80	3.0	Y	1	Kraling,W	H	
3.83	810949	8.7	B	E		4			0.05	B		7				Mormil,V		
3.844	810950	8.7	B		4.0	2.0			0.063	R	13.3	44	6.0M	Y	1	Bartnik,M		
3.85	810951	7.5		SAOC	5	5			0.355	SC	11	200			1	Verdenet,M		
3.855	810952	9.0			2	5			0.130	N	8	40	4.0M	Y	1	Lieder,P		
3.865	810953	9.0	S	Y TAU	13.0	5			0.08	B		30	5.4	Y	3	Campos,J	I	
3.90	810954	8.2	S	DCS 2B		4			0.100	B		14	5.5M	Y	1	van Loo,F.R		
3.90	810955	8.5	B	AAVSO	10	4			0.25	R	17	300				Churyumov,I	H	
3.903	810956	9.0	S	59	2.5	1			0.09	M	11	56	4.0MC	Y	1	Westlund,M		
3.906	810957	9.4		CD TAU					0.36	SC	11	156	4	Y		Korth,S	J	
3.92	810958	9	S						0.20	R	12	40	5.0		1	Shanklin,J.D	K	
3.95	810959	8.5	M	U ORI	2.5	6			0.203	SC	10	80	6.0	Y	1	Granslo,B.H		
3.96	810960	8.3	B	AAVSO					0.25	R	17	300				Churyumov,I		

NOTE A Moon made magnitude estimate difficult.

NOTE B Bright sky.

NOTE C Strong moonlight.

NOTE D 75% moon 27 degrees away.

NOTE E Moonlight.

NOTE F CQ Tau also used for comparison stars.

NOTE G Coma diameter uncertain.

NOTE H Coma diameter approximate.

NOTE I Round coma with central condensation.

NOTE J 13 mag. stellar object near center of condensation. Coma diameter 4-5 arc min.

NOTE K Cloud.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
3.130	830127	0.6	0.203	R	13	85	5	3.0	1	Fox,J.H	A
3.854	830128	0.25	0.356	SC	11	200			1	Verdenet,M	B
3.899	830129	1.6	0.090	M	11	56	10	4.0	1	Westlund,M	C

NOTE A Nucleus almost starlike. Coma difficult to discern due to strong moonlight.

NOTE B (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C Background sky light: moon, city lights.



DATE: 4 NOV 1985

DATE: 4 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
4.00	810961	8.3	S	59	2	6			0.203	N	6	38	4.9M	Y	1	Glowinski,C	
4.042	810962					6	0.03	30	0.200	SC	10	85	4	Y	1	Gelinas,M.A	
4.042	810963	6.3	B	54					0.05	B		10				Gelinas,M.A	
4.13	810964	8.7	B	59	5.2	7			0.335	N	4.5	56	5.0	Y		Kronk,G	
4.16	810965	7.5		59	13	3			0.040	B		8	6.5	Y	1	Keen,R	A
4.354	810966	8.6	S	59	2.5	6			0.108	N	4	24	5.0M	Y	2	Franch,J	B
4.55	810967	8.9	M	59	3	4			0.31	N	5.7	55	4.0M	Y	2	Suzuki,K	C
4.61	810968	8.8	S	SU TAU	3	5			0.20	N	6	60	6.3	Y	2	Clark,M.L	
4.635	810969	9.7	M	RR TAU	2.5	5			0.1	N	10	56	5.5	Y	1	Jones,A	D
4.64	810970	9.0	S	Y TAU	1.5	5			0.317	N	5	86	4.6	Y		Ichikawa,K	E
4.785	810971	8.9	B	59	3.1	4			0.10	B		14	5.0	Y	2	Hasubick,W	F
4.788	810972	8.8	S	59	4.7	6			0.080	B		20	5.0	Y	2	Koch,V	
4.809	810973	8.9	B	59	2.2	5	1.8		0.165	N	8.7	57	6.5	Y	1	Bohme,D	
4.83	810974	8.5	B	E	4.0	5			0.05	B		7				Mormil,V	
4.83	810975	8.5	B	E					0.05	B		7				Poroshin,A	
4.830	810976	8.2	S	59	6.5	4			0.07	B		20	5.5	Y	1	Tanti,T	G
4.835	810977	8.8				5			0.130	N	8	40	5.0	Y	1	Lieder,F	H
4.84	810978	9.0	B	AAVSO	2.0	3			0.08	R		8				Shirokov,A	
4.844	810979	8.7	B		4.0	5	2.0		0.063	R	13.3	44	6.0M	Y	1	Bartnik,M	
4.851	810980	9.0	M	Y TAU		6			0.15	N	4	50	4.9	Y	1	Fleet,R.W	I
4.860	810981	7.8	S	59	8.5	5			0.08	B		15	6.0	Y	3	Haver,R	J
4.861	810982	9.0	M	Y TAU	1.8				0.08	B		11	4.9	Y	1	Fleet,R.W	K
4.875	810983	8.8				3			0.10	R	10	25	4.5M	N	1	Paradowski,M	
4.882	810984	8.8		59	4	4			0.254	N	7	116	5	Y	1	Sternwarte Hof	
4.89	810985	9.7	B	AAVSO					0.25	R	17	300				Churyumov,X	
4.897	810986	8.4	S	SAO					0.31	N	5	62				Giampaolo,G	
4.92	810987	9.7	B	AAVSO					0.25	R	17	300				Churyumov,X	
4.95	810988	9.0	B	E	2.5				0.07	N	8	33				Bezrodniy,A	
4.96	810989	8.4	B	E	2.5				0.08	R		29				Nesterov,Yu	

NOTE A Modified Sidgwick method used.

NOTE B Strong moonlight &amp; haze.

NOTE C Cloud.

NOTE D CQ Tau also used for comparison stars.

NOTE E Coma diameter approximate. Moon 21d., sky fair.

NOTE F Coma diameter approximate.

NOTE G Seeing good, transparency good/excellent. Low.

NOTE H Coma diameter 2-3 arc min.

NOTE I 4.5' coma, averted vision, between clouds.

NOTE J Tail fan-shaped (spanning?) 130 deg.-310 deg. Central condensation diameter approximately 1.0 arc min. (Translated by IHW staff. Ed.)

NOTE K 6' coma, averted vision.

DATE: 5 NOV 1985

DATE: 5 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)	Notes
5.06	810990	8.6	B	E	2.5				0.08	R		29				Nesterov, Yu	
5.063	810991	8.2	S	AAVSO	2	6			0.32	N	4.4	56	5.3	Y	1	Ariail, R.B	
5.094	810992	8.5	M	59	5	3			0.08	B		10	5.8	Y	1	McBain, J	
5.108	810993	8.1	S	AAVSO	2	6			0.32	N	4.4	56	5.5	Y	1	Ariail, R.B	
5.15	810994	8.7	B	59	4.8	8			0.335	N	4.5	56	4.5	Y	1	Kronk, G	
5.174	810995	8.6	S	Y TAU	3	6			0.203	SC	10	67	4.5	Y	1	Jacobs, T	
5.176	810996	7.8	B	59		5		120	0.203	N	6	75	5.7	Y	1	Troiani, D.M	A
5.191	810997	8.4	B	59	6	6			0.203	R	13	85	4.6	Y	1	Fox, J.H	B
5.195	810998	8.6	M	Y TAU	6.9	7			0.15	N	8	30	5.5	N	1	McBride, P	C
5.22	810999	7.3	M	Y TAU	10	4	1.0	302	0.080	B		20	6.0	Y	6	Morris, C.S	D
5.22	811000	7.4	M	59		7			0.080	B		20	6.0	Y	6	Morris, C.S	
5.24	811001	7.6	M	Y TAU	8	7	0.33	125	0.256	N	4.5	45	6.0	Y	6	Morris, C.S	E
5.26	811002	8.6	M	Y TAU	2.5	8			0.256	N	4.5	156	6.0	Y	6	Morris, C.S	
5.292	811003	8.0	S	59	4.5	6			0.108	N	4	24	5.0M	Y	2	Franch, J	F
5.51	811004	8.4	S	59	5	6			0.15	N	5.3	32	5.0C	Y	1	Oka, A	
5.60	811005	8.1	S	58	2.2	5			0.317	N	5	86	4.9	Y		Jones, A	G
5.67	811006	8.5	B	E	5.0	5			0.10	R		15				Churyumov, K	
5.75	811007	8.6	S	59	3.5	6			0.20	N	6	60	6.3	Y	2	Clark, M.L	
5.75	811008	8.5			2	1			0.08	B		20	5.0	Y	1	Speil, J	
5.83	811009	8.0	S	DCS 2B	7	4			0.100	B		14	5.5C	Y	1	van Loo, F.R	
5.832	811010	8.3	M	AAVSO	7	6			0.063	R	13.3	52				Kosa-Kiss, A	H
5.833	811011	8.4	M	Y TAU	3.8	6			0.08	B		11	5.6	Y	1	Fleet, R.W	I
5.85	811012	8.0	S	DCS 2B		3			0.080	B		15	5.5C	N	1	Scholten, A	
5.85	811013	8.2	B	DCS 2B	8	7			0.115	N	8	45	6	Y	1	van Munster, T	
5.854	811014	9.5:			7.5	3	0.5	270	0.13	R	10	50		Y	1	Morrisby, A	J
5.857	811015	8.2	S	Y TAU	3.1				0.26	N	6	55	5.0	Y	1	Hurst, G.M	
5.86	811016	7.4	S	DCS 2B	18	4	0.38	280	0.060	B		12	6.4	Y	3	van de Weg, R.L.W	
5.86	811017	7.7	B	DCS 2B	18	4	0.38	280	0.060	B		12	6.4	Y	3	van de Weg, R.L.W	
5.87	811018	9.0	B	E	10.0				0.10	N	10	50				Zinvyev, V.A	
5.872	811019	8.4	M	Y TAU	4.7	6			0.15	N	4	25	5.5	Y	1	Fleet, R.W	K
5.873	811020	8.3	M	AAVSO	7	6			0.063	R	13.3	52				Csukas, M	
5.885	811021	7.8	S	58					0.050	B		7		Y	1	Luthen, H	L
5.885	811022				5	6			0.203	SC	10	80		Y		Luthen, H	
5.887	811023	7.6	S	Y TAU	6.0	3			0.08	B		15	5.0	Y	1	Hurst, G.M	
5.889	811024	8.4	S	59	7	7			0.04	B		12	6.1	Y	1	Henshaw, C	
5.891	811025	8.2	S	58	4.5	6			0.152	N	5	44	5.8	Y	2	Moeller, M	
5.899	811026	8.0	S	59	7	4			0.07	B		20	5	Y	1	Tanti, T	M
5.903	811027	8.8	S	Y TAU	10.0	6			0.13	R	4	21	5.6	Y	2	Campos, J	N
5.904	811028	7.4	S	Y TAU	6.0	3	0.33		0.05	B		10	5.5	Y	1	Hurst, G.M	O
5.910	811029	8.9	S	VYTAUSS	3	6			0.203	SC	10	80	5.1	Y	1	Foulkes, M	
5.917	811030	8.2	S	58	3	6			0.25	N	6	60	4.9	Y	1	Gainsford, M.J	
5.92	811031	8.7	S	59					0.050	B		7	5.5	Y	1	Spalding, G.E	
5.931	811032	8.7	S	Y TAU	14.0	6			0.08	B		30	5.6	Y	2	Campos, J	P
5.931	811033	8.3	M	Y TAU	2.8	6			0.15	N	4	50	5.8	Y	1	Fleet, R.W	Q
5.946	811034	7.5	B	59	4	6			0.20	SC	10	117	5	Y	1	Ward, A	R
5.95	811035	8.4	B	59	3	4			0.08	B		15	5.5MC	Y	1	Glowinski, C	S
5.958	811036	7.2	B	59					0.05	B		10	5	Y	1	Ward, A	
5.96	811037			59	9	3			0.080	B		20		C	Y	Jankin, D.W	T
5.962	811038	8.0	B	59	5	4			0.102	R	14.7	60		Y	1	Hedway, K	U
5.97	811039	8.6	S	59					0.20	R	12	40	5.7		1	Shanklin, J.D	
5.98	811040	8.2	S	59					0.08	B		20	5.7		1	Shanklin, J.D	
5.990	811041	9.3	S	59	2.0	5			0.21	N	5.0	43	5.5CM	Y	1	Taylor, M.D	
5.993	811042	8.4	S	59	3.0	3			0.07	B		16	5.5CM	Y	1	Taylor, M.D	

NOTE A Tail length = 3". [sic]

NOTE B M1 plus 5AO 076975 comparison star.

NOTE C Round.

NOTE D Straight and narrow tail.

NOTE E Tails were broad, diffuse and very faint. m2 = 8.6:.

NOTE F Strong moonlight.

NOTE G Gaps between clouds.

NOTE H (Observer calls coma diameter value halo diameter. Ed.)

NOTE I 9.5' coma, averted vision, between clouds.

NOTE J Central condensation seen with averted vision.

NOTE K 8.5' coma, averted vision.

NOTE L Also visible in 9x30.

NOTE M Seeing good, transparency good. Clouds.

NOTE N Round coma with central condensation.

NOTE O Tail length uncertain; PA 290-310? [sic]

NOTE P Fan shaped coma. No tail.

NOTE Q 7.5' coma, averted vision.

NOTE R Coma diameter is lower limit.

NOTE S (Observer indicated "K" [Keen?] method. Ed.)

NOTE T Telescopic limit is 11.

NOTE U (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
5.028	830130		0.210	N	5.7	40, 66, 133	50	4.0	1	Temprano, J	A
5.182	830131		0.152	N	4.5	18	11	5.7	5	Troiani, D.M	
5.191	830132	0.6	0.203	R	13	85	10	4.6	1	Fox, J.H	B
5.196	830133		0.203	N	6	75	14	5.5	5	Troiani, D.M	C
5.231	830134	0.19	0.254	N	5.6	53, 60, 120	5	5.2	1	Knisely, D	D
5.832	830135	0.89	0.063	R	13.3	52				Kosa-Kiss, A	E
5.873	830136		0.063	R	13.3	52				Csukas, M	F
5.895	830137	0.33	0.26	N	6	55	177	5.0	1	Hurst, G.M	G
5.911	830138		0.356	SC	11	200	75		1	Verdenet, M	H
5.922	830139	1.3	0.05	B		10	99	5.0	1	Hurst, G.M	I

NOTE A Without tail. City lights interfered with the observation.

NOTE B V-shaped nucleus elongated E-W. Dark lane intermittently visible through nucleus.

NOTE C DC = 5.5. Tail PA = 120 deg. Tail was short (3-4") and was fan shape. There was a slight glow around the tail area.

NOTE D Last quarter moon rising. Visible in 7x35 binoculars. Slightly fainter than M32 but slightly larger. Central condensation is small and better defined than last month. City lights present.

NOTE E Schematic drawing. (Duration not indicated. Time of observation is assumed to be end time. Ed.)

NOTE F (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)

NOTE G Inner condensed diameter estimate 1.0'. Star involved south edge. Central condensation offset to north.

NOTE H (Additional drawing supplied made using 11x80 binoculars. Ed.)

DATE: 5 NOV 1985

NOTE I Tail suspected. PA 310 edge brighter than PA 290 edge.

DATE: 5 NOV 1985

DATE: 6 NOV 1985

DATE: 6 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
6.00	811043	8.2	B	E	3.5				0.08	R		29				Nesterov,Yu	
6.010	811044	7.5	B	59	4				0.20	SC	10	117	5	Y	1	Ward,A	
6.014	811045	7.8	M	U ORI	2				0.080	B		20	6.5	Y	1	Stott,D	
6.062	811046	8.4	B	58					0.05	B		20	6.0	Y	3	da Silva,L.A.L	
6.11	811047	7.7	S	BAA					0.05	B		7	5.5	Y	1	Shanklin,J.D	
6.132	811048	8.2	B	SAO	2.9				0.125	R	6	35	5.8	Y	1	Guthier,O	
6.15	811049	8.6	B	59	8				0.080	B		20	5.0	Y	1	Kronk,G	
6.170	811050	7.8	S	58	4.8				0.25	N	5.6	56	6	Y	1	Jordan,J	A
6.21	811051	7.2	M	59	11		0.25	150	0.080	B		20	5.5	Y	6	Morris,C.S	B
6.219	811052	8.0	M	Y TAU	7.4				0.15	N	8	30	5.0	Y	1	McBride,P	C
6.23	811053	6.9	S	59	5				0.200	SC	10	64	5.0	Y	1	Spratt,C.E	
6.24	811054	6.7	S	59	11				0.080	B		11	5.1	Y	1	Spratt,C.E	D
6.271	811055	8.0	S	58	15				0.08	R	6	20	4.6	Y	1	Bracken,R	
6.2757	811056	8.8	S	SAO	5				0.152	N	8.0	76	5.4	Y	3	Machholz,D	
6.28	811057	7.3	M	Y TAU					0.108	N	4	20	6.5	Y	2	Hale,A	
6.2847	811058	8.3	S	SAO	8				0.080	B		20	5.4	Y	3	Machholz,D	
6.29	811059	7.1	M	Y TAU					0.05	B		10	6.5	Y	2	Hale,A	
6.30	811060	7.4	M	Y TAU			0.25	90	0.20	N	6	61	6.5	Y	2	Hale,A	E
6.4306	811061	7.4	M	59	12				0.05	B		7	6.0	Y	2	Cook,A.J	F
6.51	811062	8.8	B		7.0				0.15	N	8	43	5.5	N	1	Uda,K	
6.74	811063	7.6	B	M	7.5				0.05	B		7				Konstantinov,S	
6.75	811064	8.1	B	E	3.0				0.08	R	10	28				Zagaynov,V.A	
6.75	811065	8.7	B	58	3				0.08	B		20	5.5	Y	1	Speil,J	G
6.77	811066	8.2	B	E	3.0				0.08	R	10	28				Zagaynov,V.A	
6.78	811067	8.4	B	E	2.0				0.08	R	10	28				Zagaynov,V.A	
6.781	811068	9.1	M	CZ	3				0.31	N	8	62	5.6	Y	1	Hajek,P	
6.823	811069	8.0	B	59	3				0.08	B		11	6.0	Y	1	Gubo,H	
6.83	811070	7.8	B	58	3				0.100	B		14	4.5	Y	1	Kraling,W	
6.83	811071	7.5	V	58					0.056	B		8	4.5	Y	1	Kraling,W	
6.851	811072	8.2	M	Y TAU	5.0				0.08	B		11	5.6	Y	1	Fleet,R.W	H
6.851	811073	8.1	M	AAVSO	7				0.063	R	13.3	52				Kosa-Kiss,A	I
6.854	811074	8.5	B	58	5.4				0.140	SN	3.6	25	5.0	Y	1	Linder,J	J
6.858	811075	8.0	B	59	8.3				0.10	B		14	6.0	Y	1	Hasubick,W	
6.86	811076	7.8	B	59	12.0				0.050	B		7	6.5	Y	2	Merlin,J.-C	
6.86	811077	7.8	B	59	6.0		0.08		0.150	N	5	25	6.5	Y	2	Merlin,J.-C	
6.861	811078	8.6	M	Y TAU	3.4				0.15	N	4	50	5.6	Y	1	Fleet,R.W	K
6.865	811079	8.0	M	58	12				0.08	B		11	6.0	Y	1	Gubo,H	
6.868	811080	8.0	B	58	12.5				0.050	B		7	5.0	Y	1	Linder,J	L
6.872	811081				5.2				0.127	SC	10	60	6.0	Y	1	Hasubick,W	
6.880	811082	7.6	S	59	8.0				0.08	B		15	5.9	Y	3	Harer,R	M
6.880	811083	9.7	M	CZ					0.10	B		25	5.3C	Y	1	Valasek,V	N
6.882	811084	9.0			2.5				0.350	SC	11	120	5.5C	N	1	Marx,H	O
6.882	811085	8.3	B	58	3.6				0.113	N	8	22	5.5	Y	1	Schambeck,C.M	
6.889	811086	8.7	M	Y TAU	1.7				0.075	R	16	50	5.6	Y	1	Fleet,R.W	P
6.889	811087	9.8	B	CZ	7				0.16	R		50	6.2	Y	1	Silhan,J	
6.89	811088	7.5	M	AA	6				0.106	R	5.7	24				Keszthelyi,S	Q
6.896	811089	8.5	B	CZ	15				0.080	B		10	6.0	Y	1	Bilek,V	
6.90	811090	8.3	M	58	2.4				0.15	N	8	30	4.5	Y	1	Bottger,B	
6.910	811091	9.1	M	Y TAU	2.8				0.22	N	8	90	5.6	Y	1	Fleet,R.W	P
6.913	811092	7.6:	S	Y TAU	13.5				0.08	B		15	4.5	Y	1	Hurst,G.M	R
6.917	811093	9.0	B	CZ					0.06	R	5	15	6.0			Vaslik,F	S
6.920	811094	10.1	M	Y TAU	2.8				0.35	N	5.5	100	5.6	Y	1	Fleet,R.W	P
6.924	811095	8.3	B	59	7.1				0.080	B		20	6.0	Y	1	Koch,B.O	
6.924	811096	8.2	B	SAO	2.9				0.250	N	6	75	5.5	Y	1	Guthier,O	T
6.924	811097	8.8	S	58	2				0.20	N	5	33	6.0	Y	1	Vanin,G	
6.926	811098	8.0	M	58	11				0.04	B		12	6.1	Y	1	Henshaw,C	
6.927	811099	8.0	S	59	16.1				0.080	B		20	6.0	Y	1	Koch,V	
6.927	811100	8.1	S		3				0.114	N	8.7	38	5.2	Y	1	Nolle,M	
6.936	811101	8.0	B	58	5				0.102	R	14.7	60		Y	1	Medway,K	U
6.94	811102	8.7	B	58	13				0.080	B		20		C	Y	Jannink,D.W	V
6.951	811103	8.4	S	59					0.050	B		7	6.0	N	1	Lunde,R	
6.973	811104	7.6	S	Y TAU	18				0.08	B		15	5.0	Y	1	Hurst,G.M	R
6.975	811105	7.3	S	Y TAU	13.5				0.05	B		10	5.0	Y	1	Hurst,G.M	R
6.997	811106	7.7:	M	58	8.5				0.080	B		11	5	Y	1	Rossi,L	W

NOTE A Comet observed under partly cloudy skies this evening, thus making observations difficult.

NOTE B Tails were broad, diffuse and very faint. The straight and narrow tail of Nov. 5.22 was also suspected. Southwest tail was brighter than southeast tail.

NOTE C Thin haze.

NOTE D Diffuse oval-shaped. Hint of tail at perhaps PA 260 deg.

NOTE E Use of Swan Band comet filter accentuated the tail at PA 135 deg. but rendered the other tail almost invisible.

NOTE F Moon 1 day past L.Q. 30 deg. up.

NOTE G Auroras.

NOTE H 10' coma, averted vision.

NOTE I (Observer calls coma diameter value halo diameter. Ed.).

NOTE J Light haze.

NOTE K 5.1' coma, averted vision.

NOTE L Coma-halo.

NOTE M Tail fan-shaped. Central condensation diameter approximately 1 arc min. (Translated by IHW staff. Ed.)

NOTE N Adapted to the actual (rather bad, street lights visible) observing conditions.

NOTE O Comparison star SAO 76842. (Observer indicated "A" method [Argelander?]. Ed.)

NOTE P 4.5' coma, averted vision.

NOTE Q + 7x50 B and 10x50 B. [sic]

NOTE R Passing cloud.

NOTE S Probably well adapted, not dark adapted, of course - there is no dark sky in Czechoslovakia.

NOTE T Coma eccentric.

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

NOTE V Telescopic limit is 10.

NOTE W Slight haze.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
6.005	830140	0.79	0.050	B		12	6	5.0	1	Donatiello,G	
6.007	830141	0.13	0.298	N	5	65,179	10	6.5	1	Stott,D	A
6.026	830142	0.33	0.067	R	13.3	35,133	14	5.0	1	Donatiello,G	
6.432	830143	3	0.050	B		7	5	6.0	2	Cook,A.J	B
6.896	830144	0.25	0.356	SC	11	200			1	Verdenet,M	C
6.910	830145	1	0.106	R	5.7	24	60		1	Keszthelyi,S	
6.965	830146	0.05	0.83	R	19.7	800	10	5.5	3	Soc. Astro. de France D	

DATE: 6 NOV 1985

DATE: 6 NOV 1985

NOTE A DOC = 5. [sic] Circular coma. No tail seen.

NOTE B Last quarter moon 30 deg. high.

NOTE C (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Jet at PA 105, 12" long; streamer at PA 165, 24" long; streamer at PA 225, 33" long; streamer at PA 300, 27" long; jet at PA 350, 10" long. Drawing made by Alain Perez.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
6.043	850086	0.500	5.6		4.1 x 2.7	6.83	Ilford XP1		N	X	1/P	1	Ward,A	A
6.051	850087	0.500	5.6		4.1 x 2.7	5.17	Ilford XP1		N	X	2/P	1	Ward,A	A
6.260	850088	2.54	8	0.318	0.8 x 0.5	30.00	Kodak 098-04		N	O	00/P	1	Lilge,A	
6.975	850089	0.950	4.7	0.20	2.2 x 1.4	11.00	Kodak 2415		Y		2/P	1	Conrad,R	B
6.995	850090	0.950	4.7	0.20	2.2 x 1.4	8.00	Agfachr. Pro 1000/		N		17/P	1	Conrad,R	C

NOTE A Cloud interfered. Processed for 1600 ASA. UV filter used.

NOTE B City lights interfered with the observation; Vienna, from room!

NOTE C City lights interfered with the observation; Vienna, from the room! Film "pushed" to 4000 ISO/37 DIN.

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	
7.007	811107	9.5	B	CZ	5	6			0.16	R		50	5.9M	Y	1	Silhan,J		
7.010	811108	7.2	S	58	11.3	4			0.050	B		7	5.8	Y	1	Rossi,L		
7.014	811109		S	58	2.3	6			0.25	N	6	60	5	N	1	Gainsford,M.J	A	
7.042	811110	8.5	B	AAVSO	4	3			0.115	N	8	30	4.5	Y	1	Alves,A.A	B	
7.063	811111	8.0	M	58					0.06	R	4.5	10	4.6M	Y	1	Chodorowski,F		
7.076	811112				5	1			0.06	R	4.5	50		Y	1	Chodorowski,F		
7.119	811113	8.9	B	58	12	6			0.152	N	8	60	5.5	Y	1	Stephan,C		
7.132	811114	8.0	M	58	3.2	5			0.203	N	8	128	5.5	Y		Hannon,J		
7.18	811115				10	5	0.4	125	0.080	B		20				Bortle,J.E	C	
7.18	811116	7.1	S	USNOC	12	5			0.050	B		10				Bortle,J.E		
7.18	811117				7.5	6			0.317	N	6	55				Bortle,J.E		
7.20	811118	6.4	S	59	12	5			0.080	B		11	5.1	Y	1	Spratt,C.E		
7.204	811119	7.6	B	58	4	5			0.06	R		35	5.2	Y	1	Ward,A		
7.21	811120	6.6	S	58, 59	9	4			0.140	SN	3.6	28	5.2	Y	1	Spratt,C.E	D	
7.215	811121	8.4	M	58	3.8	5			0.254	N	4.5	46	4.5	Y	3	DeYoung,J.A		
7.22	811122	7.1	M	59	15	4			0.080	B		20	6.0	Y	6	Morris,C.S		
7.24	811123						0.20	160	0.256	N	4.5	67	6.0	Y	6	Morris,C.S	E	
7.271	811124	8.5	B	59, 58		2			0.050	B		10	5.5C	Y	1	Stapleton,J	F	
7.29	811125	7.2	S	59	13	3			0.040	B		8	7.0	Y	1	Keen,R	G	
7.292	811126	7.9	S	58	15	0			0.08	R	6	20	4.6	Y	1	Bracken,R		
7.336	811127	8.5				5			0.279	SC	10	166		Y	1	Kemble,L.J	H	
7.38	811128		S	59	1.3	3			0.203	SC	10	51	6.0	Y	1	Sanchez,A		
7.396	811129	8.5	M	58	3.5	6	0.03	280	0.33	N	4.5	70	6.0	Y	2	Fabre,R	I	
7.4083	811130	8.5	S	SAO	9	8			0.254	N	3.8	32	5.7		1	Machholz,D	J	
7.41	811131	6.5	V	UMI		5				EY				Y	14	Edberg,S.J	K	
7.50	811132	8.8	B		7	5			0.16	N	4.8	24		Y	1	Maeda,S		
7.542	811133	7.3	M		3	6			0.070	B		10	5.0C	Y	1	Kato,T		
7.590	811134	8.8	B	58					0.07	B		10	5.5	Y	1	Date,M		
7.62	811135	8.0	S	58					0.045	R	6	13	5.1	Y		Jones,A		
7.62	811136	8.2	S	AA					0.078	R	7.5	30		Y		Jones,A		
7.62	811137	7.9	S	V TAU					0.045	R	6	13		Y		Jones,A		
7.63	811138	8.0	S	V TAU	3.5	7			0.078	R	7.5	30		Y		Jones,A		
7.66	811139	8.7	B	AAVSO	7	6			0.20	N	5.6	44	4.5	Y	2	Nakamura,A		
7.71	811140	8.7	B	58	15	8			0.16	N	6.2	25	5.5	Y	4	Makino,J		
7.785	811141	8.8	M	58	4.0	6			0.16	N	6.3	31	5.5M	Y	1	Mitsuma,S	L	
7.815	811142	8.5	M	58					0.08	B		11	5.5M	Y	1	Mitsuma,S		
7.819	811143	8.0		58	4.0	2			0.08	B		15	4.5	Y	1	Dietrich,M	M	
7.83	811144	9.2		VAS 131	0.6	3			0.205	N	6	80	5.0	Y	1	Gertrich,M		
7.837	811145	8.7	B	76806	2.5	3			0.24	N		120	5.7	Y	1	Eltri,M	N	
7.84	811146	8.4	B	AAVSO	5.0	4			0.10	R		15				Churyumov,K		
7.854	811147	7.4	S	58					0.030	B		9		Y	1	Luthen,H		
7.86	811148	8.4	B	AAVSO					0.10	R		15				Churyumov,K		
7.871	811149	8.7	M	AAVSO	7	6			0.063	R	13.3	52				Csukas,M		
7.88	811150	7.0	B	DCS 2B					0.05	B		10	6.5	Y	2	Bouma,R.J		
7.88	811151	6.5	S	DCS 2B	20	15			0.05	B		10	6.5	Y	2	Bouma,R.J		
7.88	811152						0.25	95	0.156	N	5	24	6.5	Y	2	Bouma,R.J	O	
7.88	811153	8.2	S	DCS 2B		5			0.145	N	8	30	5.5C	N	1	van der Laan,T.A		
7.882	811154	8.4	B	CZ	15	3			0.080	B		10	5.5	N	1	Bliek,V		
7.889	811155	8.7	M	AAVSO	6	6			0.063	R	13.3	52				Kosa-Kiss,A	P	
7.89	811156	7.1	B	DCA 2B					0.040	B		7	6.5	Y	2	Bus,E.P		
7.89	811157	6.5	S	DCS 2B	20	3			0.018	B		3	6.5	Y	2	Bus,E.P	Q	
7.89	811158	6.7	S	DCS 2B	20	4			0.040	B		4	6.5	Y	2	Bus,E.P	R	
7.89	811159	8.3	B	58					0.050	B		12	4.5	Y	1	Mosch,J		
7.892	811160	8.9	M	CZ	4	3			0.31	N	8	62	5.1	Y	1	Hajek,P		
7.895	811161	8.5				5			0.130	N	8	40	5.5	Y	1	Lieder,F	S	
7.90	811162	8.0	B	BD	2.0	4			0.07	B		22				Kabalin,V		
7.903	811163	8.1	S	58	4.5	6			0.152	N	5	44	5.9	Y	2	Moeller,M		
7.913	811164	8.7	B	58	2.5	5			0.15	N	6.6	33	4.6	Y	1	Dal Santo,M	T	
7.92	811165	7.9	S	DCS 2B		6			0.100	B		14	6	Y	1	van Loo,F.R		
7.925	811166			58	3	4			0.15	N	8	56	5.0	Y	1	Sardini,D	U	
7.9375	811167	7.8	S	AAVSO		3			0.08	B		20	5.5	N	1	Sicoli,P		
7.944	811168	7.5	S	Y TAU	13.5	4			0.08	B		15	5.0	Y	1	Eurst,G.M	V	
7.961	811169	8.6	B		3	5			0.063	R	13	34	6.0	Y	1	Zische,E		
7.97	811170	7.9	S	DCS 2B	8	3			0.155	N	8	33	4.5C	N	1	Zanstra,W.T		
7.979	811171				1	3			0.20	N	4.7	104	4.5	Y	1	Cappellari,M		
7.98	811172	7.1	S	DCS 2B	15	6	0.30	100	0.100	N	9	23	6.5	Y	1	van de Weg,R.L.W	W	
7.98	811173	7.9	S	DCS 2B	12	2			0.060	R		12	4.5C	N	1	Zanstra,W.T		
7.983	811174	7.2	M	58	9.1	6			0.050	B		10	6.5	Y	1	Rossi,L		
7.99	811175	8.0	S	DCS 2B		3			0.080	B		15	6	C	Y	1	Scholten,A	
7.99	811176	6.9	S	DCS 2B	25	15	0.42		0.060	B		12	6.5	Y	3	van de Weg,R.L.W	X	
7.99	811177	7.2	B	DCS 2B	25	15	0.42	270	0.060	B		12	6.5	Y	3	van de Weg,R.L.W		
7.990	811178	8.6	S	58	2	6			0.20	N	5	33	6.0	Y	1	Vanin,G		
7.993	811179				3.5	6			0.150	R	15	90	5.5C	Y	1	Richert,M		
7.997	811180	8.8	S	SAO					0.31	N	5	62				Giampaolo,G		

NOTE A Cloud.

NOTE B Coma diameter approximate. (Translated by IHW staff.)

NOTE C Too large for defocus of 20x80 binoculars.

NOTE D DC approximate.

NOTE E Tails remain stubby and faint. Southeast tail brighter than southwest tail.

NOTE F In Taurus.

NOTE G Modified Sidgwick method used.

NOTE H My 14th observation. Coma diameter 8'-10'. Limit = 13. Very easy in binoculars. Coma very large on av. vis. No elongation

NOTE I noted. Sky very light with ice crystallizing. [sic]

NOTE J (PA value appears to be measured incorrectly. Ed.)

NOTE K 344 moon 90 degrees away.

NOTE L Stars in bowl of Ursa Minor used for comparison.

NOTE M Tail not seen.

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

NOTE O SAO 76806 used for magnitude comparison.

NOTE P PA approximate.

NOTE Q (Observer calls coma diameter value halo diameter. Ed.)

NOTE R Comet not visible to the naked eye. Coma diameter is lower limit.

NOTE S Coma diameter is lower limit.

NOTE T Coma diameter 2-3 arc min.

NOTE U Sky with haze.

NOTE V Nuclear magnitude 0.6'. [sic]

NOTE W Passing cloud.

NOTE X Coma diameter approximate. Observations are showing differences caused by the magnification effect.

NOTE Y Observations are showing differences caused by the magnification effects. Tail PA 90-270.

DATE: 7 NOV 1985

DATE: 7 NOV 1985

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
7.136	830147	0.50	0.102	R	15	50	50	5.8	2	Cuthill,D.D	A
7.167	830148	0.5	0.102	R	15	63		5.6	1	Cuthill,L	B
7.175	830149	0.33	0.20	N	8	70	53	5	1	Vargas B.,A.G	C
7.198	830150	0.25	0.200	N	8	120	10	5	1	Vargas B.,A.G	C
7.200	830151	0.19	0.254	N	5.6	53, 60,120	7	6.4	3	Knisely,D	D
7.871	830152		0.063	R	13.3	52				Csukas,M	E
7.93	830153	0.23	0.15	N	8	56, 40	4	5.0	1	Sardini,D	

NOTE A Coma has attained a diam. of 6.5'. Centrally condensed or stellar object is apparent during seconds of good seeing. Total mag. was estimated to be 8.0. Coma appears symmetrical.

NOTE B A 5' coma shows a strong intensity at the center; DC 5; estimated mag. using 10x50 binoculars 8.0 (Morris method).

NOTE C The PA was difficult, the DC is estimate in 3, the mag. was estimate in 8.1, B method. [sic] Reference chart 58.

NOTE D Broad tail? at PA 220? Ray tail? at PA 220? Star-like central condensation less than 5" arc across. Magnitude of condensation +11? Hints of very faint narrow spike-like feature less than 3' arc long with very faint broad outer tail 7' long from PA 180 to PA 260. Tail existence questionable. Magnifications of 180x and 240x also used.

NOTE E (Duration not indicated. Time of observation is assumed to be start 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
7.333	850091	2.306	5	0.45	0.9 x 0.6	30.00	Kodak Tri-X		N	M	6/S	1	Webb,R	A
7.902	850092	1.800		0.28	1.1 x 0.8	7.00	Kodak Tri-X	400/27	N		31/N	1	Darvann,T.A	B
7.907	850093	1.800		0.28	1.1 x 0.8	3.50	Kodak Tri-X	400/27	N		32/N	1	Darvann,T.A	B
7.910	850094	1.800		0.28	1.1 x 0.8	1.50	Kodak Tri-X	400/27	N		33/N	1	Darvann,T.A	B
7.951	850095	1.800		0.28	1.1 x 0.8	6.50	Kodak Tri-X	400/27	N		36/N	1	Darvann,T.A	B
7.956	850096	1.800		0.28	1.1 x 0.8	3.50	Kodak Tri-X	400/27	N		37/N	1	Darvann,T.A	B
7.972	850097	1.000	5	0.200	2.1 x 1.4	6.00	3M 1000	1000/	N	X	1/S	1	Vanin,G	
7.984	850098	0.500	6.3	0.080	4.1 x 2.7	15.00	ORWO NP 27	400/27	N		432/P	1	Richert,M	C

NOTE A Inner coma and starlike central condensation visible on all original negatives. Film push processed slightly. (Observer indicated C-type guiding as well as M. Ed.)

NOTE B (Instrument FL of 2.800 and separately specified effective FL of approximately 1.800 don't match. Ed.)

NOTE C City lights interfered with the observation. (Observer's image identifier is 84 32. Ed.)

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
8.01	811181	7.7	B	DCS 2B	20	4			0.050	B		7	6.5	Y	1	Kuipers,G	A
8.01	811182	7.7	B	DCS 2B	20	4			0.050	B		7	6.5	Y	1	Kroon,B	A
8.02	811183	8.0	M	58	3	7			0.203	SC	10	80	6.0	Y	1	Granslo,B.H	
8.05	811184	7.2	S	DCS 2B	13	10			0.050	B		10	6	Y	3	Comello,G	
8.05	811185							0.05	0.203	C	10	50	6	Y	3	Comello,G	
8.053	811186	8.3	S	AAVSO	2.5	6			0.32	N	4.4	56	6.7	Y	1	Arsail,R.B	
8.125	811187	7.7	M	AAVSO	24				0.050	B		10		Y	1	O'Meara,S.J	
8.135	811188	8.2	M	58	2.4	1			0.076	R	15	45	5.4	Y	1	Smith,A	
8.165	811189	7.8	S	58	5.3	1			0.05	B		10	6	Y	2	House,R.R	
8.167	811190	7.3	S	60	10.3	7			0.108	N	4	24	5.5	Y	2	Franch,J	
8.170	811191	7.4	S	58	5	2			0.25	N	5.6	56	6	Y	1	Jordan,J	B
8.1736	811192	8.2	B	58	5	0			0.080	B		11	6.0	Y	1	Broglioni,A	C
8.202	811193	7.7	S	58	12	3			0.035	B		7	6.7	Y	3	Morrison,W	
8.208	811194	7.0	B	58					0.080	B		20	5.5	Y		Smith,D	
8.226	811195	7.8	M	58	2.7	5			0.08	B		11	4.5	Y	1	Glassett,W	D
8.23	811196	8.5	B	58	8.3	8			0.335	N	4.5	56	4.5	Y		Kronk,G	
8.24	811197	7.8	S	Y TAU	7.6	8			0.15	N	8	30	5.5	Y	1	McBride,P	E
8.262	811198	7.3	B	58		5			0.203	N	6	75	5.5	Y	1	Troiani,D.M	F
8.2916	811199	8.3	B	58	8	6		90	0.279	SC	10	166	4	Y	1	Kemble,L.J	G
8.30	811200	8.1	B	E	21				0.04	R	6	18				Drapun,I	
8.3090	811201	7.3	M	59	15	5			0.05	B		7	6.1	Y	2	Cook,A.J	
8.3292	811202	8.4	S	SAO	6	7			0.152	N	8.0	76	5.0		3	Machholz,D	H
8.37	811203	8.6	S	58	2.6	5			0.203	SC	10	51	6.0	Y	1	Sanchez,A	
8.375	811204	7.7	B	58	4	5			0.050	B		7	6.0	Y	1	Krisciunas,K	I
8.41	811205	6.3	B	58, 59	35	2				EY		7	7.5	Y	11	Morris,C.S	
8.52500	811206	8.0	B		5.5	7			0.15	N	6	28	5.5	Y	1	Okumura,S	
8.538	811207	8	S	58	2.3	4			0.152	N	8	64		Y	1	Tregaskis,T.B	J
8.565	811208	6.8	S	58	10	7			0.08	B		15	6.5	Y	1	Lovejoy,T	
8.58	811209	6.9	S	58	6	5			0.08	B		15	6.1	Y	1	Seargent,D	
8.60	811210	8.2	S	AAVSO	5	5			0.13	N	6.3	24	6.5	Y	1	Hayashi,A	K
8.604	811211	8.7	S	58	3	3			0.065	R	7.7	27	5.5	Y	1	Date,M	
8.605	811212	8.2	M	58	6.5	5			0.08	B		11	6	Y	1	Mitsuma,S	
8.608	811213	9.0	M	58	4.2	5		0.17	0.1	N	10	56	5.0	Y	1	Ichikawa,K	
8.61	811214	8.5	M	58	5.9	6			0.16	N	6.3	31	6	Y	1	Mitsuma,S	
8.62	811215	7.5	S	SAO, 58					0.045	R	6	13		Y		Jones,A	
8.62	811216	7.7	S	58	5				0.078	R	7.5	30		Y		Jones,A	
8.62	811217					6			0.317	N	5	86		Y		Jones,A	
8.63	811218	8.3	S	AAVSO	5	5			0.13	N	6.3	24	6.5	Y	1	Hayashi,A	
8.632	811219	8.5	B	58					0.07	B		10	5.5	Y	1	Date,M	
8.64	811220	8.4	B	AAVSO	6.5	5			0.20	N	5.6	44	6.5	Y	1	Nakamura,A	
8.667	811221	8.0	S	58	1.0	3			0.12	N	6	36	4.0	Y	1	Kishi,A	
8.68	811222	7.8	B	E	15	4			0.05	B		7				Zagaynov,V.A	
8.69	811223	8.2	S			5			0.08	B		11	4.5	N	1	Momose,M	
8.80	811224	8.1	B	E	21	0			0.04	R	6	18				Maydik,A	
8.813	811225	7.9	M	58					0.06	R	4.5	10	5.4	Y	1	Chodorowski,F	
8.819	811226				6	3			0.064	R	12	32		Y	1	Chodorowski,F	
8.823	811227	8.2	M	58	12	3			0.067	R	12	60	5.8	Y	1	Kosinski,J	
8.83	811228	7.5	B	E	10	5			0.05	B		7				Mormil,V	
8.832	811229	8.5	B		3	5			0.063	R	13	34	5.5	N	1	Zische,E	
8.833	811230	8		58		4			0.10	R	10	25	5	C	1	Paradowski,M	
8.840	811231				3	6			0.20	SC	10	111	5.5	Y	1	Bremseth,P.-J	
8.840	811232	8.0	S						0.05	B		10	5.5	Y	1	Bremseth,P.-J	
8.87	811233	7.5	B	E	12	5			0.05	B		7				Mormil,V	
8.87	811234	7.7	B	AAVSO	8	5			0.12	R	4	35				Chernis,K	
8.872	811235	8.5	S	58	4	3			0.09	M	11	56	5.0	Y	2	Westlund,M	
8.8750	811236	8.3	S	58	8	5			0.11	R	11	36	5.4	Y	1	Znasik,M	
8.8854	811237	8.0	S	58	12	3			0.08	B		10	5.4	Y	1	Znasik,M	
8.89	811238	7.8	S	DCS 2B	6.5	6			0.100	B		14	6	Y	1	van Loo,F.R	A
8.896	811239	7.3	M	58, 59	7	4			0.07	B		20	4.5	Y	1	Tanti,T	L
8.910	811240	7.6	B	58	9	7		0.2	0.200	R	15	120	6.0	Y	1	Kalauch,K.-D	
8.9166	811241	7.8	S	AAVSO		3			0.08	B		20	5.0	N	1	Sicoli,P	
8.92	811242	8.2	B	58					0.050	B		12	4.0	Y	1	Mosch,J	
8.924	811243	7.9	S	58	6.5	4			0.089	R	5.5	18	5.5	N	1	Ventura,F	
8.948	811244	8.0	B	58		5			0.08	B		20	5.5	N	2	Knain,E	
8.993	811245	8.0	M	Y TAU	5.5	6			0.08	B		11	5.8	Y	1	Fleet,R.W	M

NOTE A Coma diameter approximate.

NOTE B Sky conditions good.

NOTE C No detail visible. (Roughly translated by IBW staff. Ed.)

NOTE D Windy!

NOTE E 10 mag. nucleus.

NOTE F Tail length = 4". [sic]

NOTE G Heavy ice fog, light sky.

NOTE H Some haze.

NOTE I Comparison stars 75, 85. Coma diameter is lower limit.

NOTE J Through cloud.

NOTE K Tail detected?

NOTE L Seeing good, transparency good.

NOTE M 9.0' coma, averted vision.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
8.022	830154	0.20	0.400	N	5	40,222	16	5.8	2	Sarocchi,D	A
8.075	830155	0.20	0.400	N	5	40,222	16	5.8	2	Sarocchi,D	
8.174	830156	0.33	0.20	N	8	70	56	5.5	1	Vargas B.,A.G	B
8.205	830157	0.25	0.20	N	8	120	30	5.5	1	Vargas B.,A.G	B
8.242	830158		0.203	N	6	75	14	5.5	1	Troiani,D.M	C
8.311	830159	3	0.050	B		7	5	6.1	2	Cook,A.J	D
8.853	830160	0.23	0.20	SC	10	111	27	5.5	3	Bremseth,P.-J	E
8.868	830161	1.6	0.090	M	11	56	10	5.0	2	Westlund,M	
8.938	830162	1.2	0.080	B		20	10	5.5	1	Knain,E	F
8.938	830163	1	0.333	N	4.5	115	120	5.2	1	Wisniewski,P	G

NOTE A DC = 2, coma diameter 5.2'.

NOTE B PA was impossible because the coma appear almost round. The total magnitude was estimating in 7.9 by B method. [sic] The comet was observable in binoculars 7x50 like a globular cluster.

NOTE C DC = 5.9. Tail PA = 80 deg. Tail was a slight glow to one side of coma.

NOTE D Very clear, only slight light pollution as city was covered by low clouds.

NOTE E Coma was round, and very weak in the outer parts, but bright in the inner. The central condensation was star-like.



DATE: 8 NOV 1985

DATE: 8 NOV 1985

NOTE F Coma slightly elongated to the north.

NOTE G City lights interfered with the observation. (Two drawings submitted. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
8.855	850099	0.750	6.3		2.7 x 1.8	17.00	ORNO	400/27	N	C	2/N	1	Znasik,M	A
8.970	850100	0.803	2.1	0.350	2.6 x 1.7	8.00	Kodak 103a-F		N	M	9/P	1	Guarro,J	
8.977	850101	0.803	2.1	0.350	2.6 x 1.7	2.50	Kodak 103a-F		N	M	10/P	1	Guarro,J	

NOTE A Large format (88x63 mm) sheet film used.

DATE: 9 NOV 1985

DATE: 9 NOV 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

Date(UT)	AMN#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
9.000	811246		S		8				0.08	B		11	5	Y	1	Gainsford, M.J	
9.004	811247	6.5	B	101	6.7	3			0.06	R	15	72	5	Y	1	Rodriguez, V	A
9.007	811248	8.0	M	Y TAU	5.5	6			0.15	N	4	25	5.8	Y	1	Fleet, R.W	B
9.007	811249	7.2	B	58	8.4	6			0.050	B		10	5.8	Y	1	Rossi, L	
9.018	811250	8.0	S	58	2.8	6			0.25	N	6	60	5	Y	1	Gainsford, M.J	
9.02	811251	8.3	B	AAVSO	8	5			0.20	N	5	35				Tavetkov, L	
9.02	811252	9.7	B	AA	4.5	3			0.318	N	5	62	6.5	Y	1	Simmons, I	
9.052	811253	7.3	S	Y TAU	18	5	0.5	310	0.08	B		15	5.0	Y	1	Hurst, G.M	
9.056	811254	7.1	S	Y TAU	13.5	5	0.5	355	0.05	B		10	5.0	Y	1	Hurst, G.M	
9.101	811255	8.3	S	AAVSO	2.5	6			0.32	N	4.4	56	5.5	Y	1	Ariail, R.B	
9.112	811256	7.2	M	58		5			0.05	B		7	5.5	Y	5	DeYoung, J.A	
9.112	811257			58	5.2				0.254	N	4.5	46	5.5	Y	5	DeYoung, J.A	
9.132	811258	8.0	S	58		6			0.318	N	8	40	6.2	Y	1	Hathaway, W	C
9.136	811259	6.9		58	5	3			0.050	B		10	5.4	Y	1	Sabia, J.D	
9.137	811260	7.5	S	58	12	4			0.035	B		7	6.5	Y	3	Morrison, W	
9.142	811261	8.0	B	58	10	2			0.05	B		7	5.5	Y	1	Chmielewski, W	
9.15	811262	6.1	S	58	20	5			0.108	N	4	17	5.0	Y	1	Harrington, P	
9.15	811263	7.0	B	E	6	1			0.07	N	8	33				Pashko, D	
9.167	811264	8.0		58	3.5	6			0.203	N	8	128	5.0	Y		Hannon, J	
9.17	811265	6.9	B	AA	17	7			0.080	B		20				Green, D.W.E	D
9.17	811266	6.4	S	AA	17	7			0.080	B		20				Green, D.W.E	D
9.18	811267	6.1	M	AA	22	6			0.050	B		7				Green, D.W.E	D
9.18	811268	6.3	S	AA	22	6			0.050	B		7				Green, D.W.E	D
9.18	811269	6.8	S	USNOC	15	5			0.050	B		10				Bortle, J.E	E
9.18	811270				12.5	5			0.080	B		20				Bortle, J.E	
9.18	811271				8	7			0.317	N	6	55				Bortle, J.E	
9.18	811272	7.5	B	AA					0.050	B		7	6.5	Y	1	Simmons, I	
9.18	811273	9.0	B	AA	4.0	7			0.318	N	5	62	6.5	Y	1	Simmons, W	
9.18	811274	7.5	B	AA		0			0.050	B		7	6.5	Y	1	Simmons, W	
9.184	811275	7.1	M	58	8.0	6			0.05	B		12	6.4	Y	1	Knight, S	
9.189	811276	8.6	B	58	12	6	0.33		0.152	N	8	60	5.5	Y	1	Stephan, C	F
9.20	811277	6.5	M	58	17	6			0.080	B		20	7.0	Y	1	Morris, C.S	
9.20	811278	6.0		58					EY			7.0		Y	1	Morris, C.S	
9.208	811279	7.0	B	58					0.080	B		20	5.0	Y		Smith, D	
9.21	811280	6.2	S	58, 59	8	5			0.140	SN	3.6	28	5.0	Y	1	Spratt, C.E	G
9.212	811281	7.8	M	58	2.8	1			0.152	N	5	19	5.8	Y	1	Smith, A	
9.22	811282	6.0	S	58, 59	12	4			0.080	B		11	5.0	Y	1	Spratt, C.E	H
9.23	811283	6.2	S	58, 59	8	5			0.200	SC	10.0	64	5.0	Y	1	Spratt, C.E	I
9.276	811284	7.4	B	58					0.203	N	6	75	5.5	Y	1	Troiani, D.H	
9.278	811285	8.4	S	58	20	1			0.035	B		7	4.5C	Y	1	Gronck, T.D	J
9.292	811286	8.0	S	58	12	5			0.20	SC	6	30	6.0	Y	1	Saxon, V.P	
9.3257	811287	8.2	S	SAO	7	8			0.152	N	8.0	76	5.2	Y	3	Machholz, D	K
9.38	811288			58	5.4	6			0.203	SC	10	51	6.0	Y	1	Sanchez, A	
9.389	811289	7.9	M	58	4.0	6	0.03	280	0.33	N	4.5	70	6.0	Y	2	Fabre, R	L
9.396	811290	7.3	B	58	9	5			0.050	B		7	6.0	Y	2	Krisciunas, K	M
9.436	811291	10.7	S	58	2.4	3			0.15	N	8	50	5.5M2	Y	1	Donth, D	
9.52	811292	8.1	B	58	2.8	5			0.20	N	5	36		Y	1	Curtis, D	N
9.531	811293	8.0	S	58	5.0	1			0.050	B		12	6	Y	1	Batza, H	
9.537	811294	8.5	S	58	5.0	1			0.11	N	8	45	6	Y	1	Batza, H	
9.542	811295	7.3	M		3	5			0.070	B		10	5.0C	Y	1	Kato, T	
9.60	811296	8.7	B	AA	2	3			0.06	B		20		Y	1	Campbell, R.N	O
9.625	811297	7.5	M		3	6			0.10	N	10	55	4.0C	Y	1	Kato, T	P
9.67	811298	8.3	S	58	8	7			0.41	C	4.2	86	6.6	Y	4	Clark, M.L	Q
9.679	811299	8.0	B	58	15	4			0.25	SC	10	100	4.3	Y	3	Bembrick, C	R
9.76	811300	8.1	B	58	4	3			0.08	B		20	5.5	Y	1	Spell, J	
9.77	811301	8.2	B	AAVSO					0.15	N	5	25				Korneev, V	
9.79	811302	7.9	M	AAVSO	15	4			0.04	B		12				Maydik, A	
9.806	811303	8.0	S	58	5.2	3			0.08	B		15	4.7	Y	1	Dietrich, M	S
9.81	811304	7.4	B	E	13.0	5			0.05	B		7				Mormil, V	
9.812	811305	8.9	B	58	7	5			0.07	B		20	5.8	Y	1	Filimon, E	
9.821	811306	9.3	M	58	1.3	3			0.153	N	8.5	52		Y	1	Torres, E	T
9.83	811307	7.8	B	DCS 2B	5.5	7			0.115	N	8	45	4.5	Y	1	van Munster, T	D
9.83	811308	7.8	S	E	4.6	4			0.11	N	7	32				Aleynikov, A	
9.844	811309	7.7	B	58	8	5			0.102	R	14.7	60		Y	1	Medway, K	U
9.85	811310	7.4	B	E	13.0	5			0.05	B		7				Mormil, V	
9.85	811311	6.1	S	E	1.0	3			0.07	N	8	33				Shitikov, A	
9.858	811312	7.5	S	58	21.6	5			0.05	B		10	5.0	Y	1	Hurst, G.M	
9.858	811313	7.0	M	58, 59	7.5	4			0.07	B		20	5	Y	1	Tanti, T	V
9.86	811314	7.3	B	E	4.0				0.08	R		29				Nesterov, Yu	W
9.868	811315	7.8	M	Y TAU	2.7	6			0.08	B		11	5.6	Y	1	Fleet, R.W	X
9.88	811316	8.2	B	M					0.15	N	5	25				Korneev, V	
9.882	811317	7.8	M	Y TAU	4.5	6			0.15	N	4	25	5.6	Y	1	Fleet, R.W	X
9.885	811318	8.5	B	58	8	5	0.5	300	0.13	R	10	50		Y	1	Morrisby, A	Y
9.89	811319	6.9	S	58					0.08	B		10	6.0			Shanklin, J.D	
9.892	811320	9.3		58	1.3	3			0.153	N	8.5	52		Y	1	Torres, E	Z
9.920	811321	7.8	S	58	6	3			0.089	R	5.5	18	5.0	N	1	Ventura, F	
9.924	811322	9.1	M	58	2.4	5			0.090	R	14	46	5.3	Y	1	Hirth, G	
9.924	811323	7.0	B	58	10				0.035	B		7		Y	1	Rodriguez C., J.A	
9.925	811324	7.6	M	AAVSO	7	6			0.063	R	13.3	52				Kosa-Kiss, A	a
9.926	811325	8.3	B	58		4			0.05	B		10		Y	1	Frosina, A	b
9.951	811326	7.1	S	Y TAU	21	5	0.3		0.05	B		10	5.0	Y	1	Hurst, G.M	c
9.955	811327	8.3	B	58		5			0.080	R	6.3	20	5.5C	N	2	Richert, M	
9.96	811328								EY			6.0				Shanklin, J.D	d
9.983	811329	6.5			20	5			0.080	B		15	5.3	Y	2	Lucius, D	e
9.993	811330	6.5			20	5			0.200	SC	10	200	5.3	Y	2	Lucius, D	e
9.997	811331	7.1	B	58	10.5	5			0.050	B		7	5.8	Y	1	Rossi, L	

NOTE A Also calculated the diameter of the apparent nucleus: 0.84 arc min. (Translated by IHW staff. Ed.)

NOTE B 10' coma, averted vision.

NOTE C Very clear sky.

NOTE D Coma diameter approximate.

NOTE E Tails suspected in 110 deg. and 270 deg.

NOTE F Magnification of 90 also used: seem to be two nuclei. One dim at approx. PA 200. Tail PA approximate, very dim and diffuse.

NOTE G Fan shape spans PA 130-180.

NOTE H DC approximate.

NOTE I Oval shaped. DC approximate.

NOTE J Coma speckled like M13, unusual.

NOTE K Exc. see.

NOTE L Coma shows an irregular shape.

NOTE M (PA value appears to be measured incorrectly. Ed.)

NOTE N Comparison stars 75, 85. Coma diameter approximate.

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NOTE N Semi urban sky.  
 NOTE O Dark and clear.  
 NOTE P Diffuse cloud.  
 NOTE Q Very large strong c.c.  
 NOTE R Coma diameter uncertain.  
 NOTE S (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE T Without tail. (Translated by IHW staff. Observer gave limit as 10.5. Ed.)  
 NOTE U (Observer gave limit as 12.5. Ed.)  
 NOTE V Seeing good, transparency good.  
 NOTE W Brightness flash.  
 NOTE X 9' coma, averted vision.  
 NOTE Y Easy object in 8x50 binoculars.  
 NOTE Z Without tail. (Translated by IHW staff. Observer gave limit as 11.0. Ed.)  
 NOTE a (Observer calls coma diameter value halo diameter. Ed.)  
 NOTE b Limit = 9.4. h0 approximately 55 deg.  
 NOTE c Coma diameter approximate. Tail PA = W? [sic].  
 NOTE d Possibly visible to naked eye. Fainter than M33.  
 NOTE e (Observer indicated "A" method [Argelander?]. Ed.) Coma diameter approximate.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
9.040	830164	2.3	0.05	B		10	55	5.0	1	Hurst,G.M	A
9.059	830165		0.200	SC	10	80,100			1	Ulbricht,S	B
9.180	830166	0.33	0.20	N	8	70	61	6	1	Vargas B.,A.G	
9.206	830167	0.25	0.20	N	8	120	5	6	1	Vargas B.,A.G	
9.219	830168		0.203	SC	10	50	30	5	1	Arpin,P	C
9.441	830169	0.3	0.15	N	8	50	14	5.5	1	Donth,D	D
9.860	830170	2.3	0.05	B		10	44	5.0	1	Hurst,G.M	E
9.920	830171		0.035	B		7	10		1	Rodriguez C.,J.A	
9.925	830172	0.89	0.063	R	13.3	52				Kosa-Kiss,A	F
9.981	830173	1.49	0.080	B		15	15	5.3	2	Lucius,D	
9.998	830174	0.93	0.200	SC	10	200	25	5.3		Lucius,D	

NOTE A Tail at PA 310 and tail at PA 355. Tails suspected & drawn but very near limit. Apparently easier in 10x50 binoculars than 15x80 binoculars. A suggestion of diffuse material between two main tails but uncertain.  
 NOTE B Intensity about mag. 8.2. Nucleus judged bright in relation to coma. Diffuse tail extension. (Duration not indicated. Time of observation is assumed to be start time. Translated by IHW staff. Ed.)  
 NOTE C Jet (very faint) at PA 0.  
 NOTE D This drawing shows Tau Tauri at north and C. Halley to the south at 10.7 mag. The coma diameter is 2.4 min. of arc with a bright (but not stellar) nucleus at the center. I would estimate the degree of coma condensation at 3. Although the nucleus was easily visible at 50x, higher magnification didn't offer any more detail.  
 NOTE E Tail very faint and uncertain. Difficult to observe because of passing clouds. Fan shaped, 20' length, to west? Stars involved in coma.  
 NOTE F Schematic drawing. (Duration not indicated. Time of observation is assume to be end time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
9.114	850102	0.300	4		6.9 x 4.6	9.00	Potopan HL	400/27	N	O	1/P	1	Slusarczyk,J	
9.143	850103	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	231/P	1	Sabia,J.D	
9.146	850104	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	S	1/P	1	Dilsizian,R	
9.186	850105	0.050	4.0		39.6 x 27.0	5.00	Kodak Tri-X		N		101/P	1	Gianforte,J.S	A
9.247	850106	0.200	4		10.3 x 6.9	12.00	Kodak Tri-X	400/	N	M	1/P	1	Laroche,Y	
9.247	850107	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	232/P	1	Sabia,J.D	
9.253	850108	0.305	4		6.8 x 4.5	30.00	Kodak IIA-F		N		1/P	1	Mitchell,R.C	
9.274	850109	0.30	4	0.075	6.9 x 4.6	30.00	IIA-F		N	X	1/P	1	Mitchell,R.C	
9.712	850110	0.268	2.6	0.102	7.7 x 5.1	10.00	Fuji	400/	N	T	1/S	1	Richardson,C	B
9.884	850111	0.210	5.6		9.8 x 6.5	10.00	Ilford Pan F		N	T	1/P		Emrich,G	
9.958	850112	0.803	2.1	0.350	2.6 x 1.7	7.00	Kodak 103a-F		N	M	11/P	1	Guarro,J	

NOTE A (Observer's image identifier is 100-1. Ed.) (Observer listed emulsion speed as ASA 800. Ed.)  
 NOTE B Instrument is Meade Schmidt camera.

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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	
10.00	811332	8.2	B	M					0.15	N	5	25				Korneev,V	A	
10.00	811333	8.2	S	58					0.050	B		7	5.5	Y	1	Spalding,G.H		
10.008	811334	6.5	B	58	10	5			0.256	N	5.6	45	5.4	Y	2	Gomez,A		
10.01	811335	8.4	B	E	4.0		0.2		0.07	N	8	33				Bezrodnii,A		
10.014	811336	7.0:	B	58	4				0.06	R	5.7	20	5.3	Y	2	Cardiel,N		
10.015	811337	7.0:	B	58	10				0.256	N	5.6	80	5.4	Y	2	Pedraz,S		
10.017	811338	8.0	M	58		3			0.089	R	13.7	32	C	Y	1	Linger,S	B	
10.021	811339	7.0:	B	58	4				0.06	R	5.7	40	5.3	Y	2	Cardiel,N		
10.028	811340	8.5	M	58		7			0.254	N	6.4	65		Y	3	Abbott,J	C	
10.045	811341	8.3	S	AAVSO	2.5	6			0.32	N	4.4	56	5.4	Y	1	Ariail,R.B		
10.056	811342	8.2	M	Y TAU	2.2	6			0.075	R	16	50	5.6	Y	1	Fleet,R.W	D	
10.059	811343	6.5			20	5			0.200	SC	10	200	5.3	Y	2	Lucius,D	E	
10.063	811344	8.0:	B	58	5				0.15	N	5	75		Y	2	Velasco,P		
10.07	811345	7.2	B	M	4.0				0.08	R		29				Nesterov,Yu		
10.080	811346	9.1	M	Y TAU	2.9	6			0.35	N	5.5	100	5.6	Y	1	Fleet,R.W	F	
10.08	811347	6.8	B	M	5.0	2			0.07	N	8	33				Pashko,D		
10.083	811348	7.0	B	58	7				0.256	N	5.6	80	5.4	Y	3	Gallego,J		
10.123	811349	7.3	S	58	5	2			0.25	N	5.6	56	6	Y	1	Jordan,J	G	
10.125	811350	7.9	S	58		3			0.318	N	8	40				Hathaway,W		
10.132	811351	7.9	B	58	10	2			0.05	B		7	5.5	Y	2	Chmielewski,W		
10.146	811352			58	22.5				0.050	B		7	6.2	Y	3	Will,M		
10.177	811353	8.5:	B	58	12	0			0.05	B		7	4.0			Lalret,R		
10.181	811354	7.1	M	58	4	4			0.15	N	8	48	5.8	Y	2	Robertson,T	H	
10.202	811355	8.0	B	58	12	4			0.313	N	5.6	50	5.1	Y	2	Saxon,V.P	I	
10.229	811356	7.2	B	58					0.080	B		20	5.0	Y		Smith,D		
10.233	811357	8.1	B	58	12	6			0.035	B		7	5.0	Y	1	Stephan,C	J	
10.244	811358	8.1	M	58	14.4	2			0.06	B		20	5.0	N	1	de la Rosa Jr,A	K	
10.250	811359	6.9	S		7	3			0.080	B		11		Y	3	Pryal,J	L	
10.257	811360	8.3	S	58	20	1			0.035	B		7	4.5C	Y	1	Gronek,J.D	M	
10.2785	811361	7.7	S	SAO	8	5			0.080	B		20	5.2			Machholz,D		
10.319	811362	7.5	M	58	6.0	6	0.03	280	0.33	N	4.5	70	6.0	Y	2	Fabre,R	N	
10.48	811363	7.8			7	6			0.12	B		20	5.8	Y	1	Washi,S	O	
10.51	811364	8.1	B		7.0	5			0.15	N	8	43	5.5	N	1	Uda,K		
10.545	811365	7.5	B		14				0.035	B		7		Y	2	Okada,M		
10.552	811366	8.5	B	58					0.07	B		10	5.0	Y	1	Date,M		
10.556	811367	7.8	B	58		5			0.050	B		7	6.4	Y	1	Krisclunas,K	P	
10.559	811368	8.3	S	58	4	3			0.153	N	8.6	52	4.5	Y	1	Iwaki,Y		
10.56	811369	8.1	M	58	8.0	6			0.16	N	6.3	31		Y	1	Mitsuma,S	Q	
10.57	811370	6.6	S	58	18	6			0.05	B		10	6.2	Y	1	Seargent,D	R	
10.58	811371	7.9	M	58	11	5			0.08	B		11	6	Y	1	Mitsuma,S	S	
10.59	811372	7.1	S	58	8	6			0.07	B		10	5.5	Y	1	Yasuki,M		
10.67	811373	8.0	B	M					0.25	N	6	75				Savelyev,A		
10.70	811374	7.8	B	58	10.0	6			0.15	N	6	28	5.5	Y	1	Kanai,K		
10.70	811375	7.5	S	58	10.0	6			0.15	N	6	28	5.5	Y	1	Kanai,K		
10.70	811376	7.5	M	58	10.0	6			0.15	N	6	28	5.5	Y	1	Kanai,K		
10.77	811377	6.9	S	58	16.6	5			0.05	B		7	5.5	Y	1	Kanai,K		
10.78	811378	7.7	B	58		5			0.203	SC	10	63	4.5	Y	1	Wagner,G		
10.819	811379	7.3	B	58	10	5			0.102	R	14.7	60		Y	1	Medway,K	T	
10.823	811380	7.5	S	USNOC	16	2			0.08	B		15	4.5	Y	1	Hurst,G.M	U	
10.826	811381	6.8	S	USNOC					0.05	B		10	4.5	Y	1	Hurst,G.M	U	
10.83	811382	7.9	S	DCS 2B		3			0.080	B		15	5.5C	N	1	Scholten,A		
10.83	811383	6.7	S	DCS 2B	8	6			0.100	B		14	6	Y	1	van Loo,F.R		
10.837	811384	6.8	B	58	15	6			0.050	B		7	5	Y	1	Linder,J	V	
10.84	811385	8.1:	M	58	3.8	6			0.15	N	8	30	5.0	Y	1	Bottger,B	W	
10.840	811386			58		1			0.07	B		10	5.3	N	4	Deconinck,M		
10.844	811387	7.3	S	58	5	7			0.152	N	5	44	5.8	Y	2	Moeller,M	X	
10.847	811388	6.5	M	58, 59	12	4			0.05	B		12	5.5	Y	1	Tanti,T	Y	
10.85	811389	6.2	S	DCS 2B	22	4			0.040	B		7	6.5	Y	2	Bus,E.P	Z	
10.854	811390	8.3	S	58	6.5	3			0.070	B		16	5.4C	Y	1	Taylor,M.D		
10.87	811391	7.9	B	58					0.050	B		12	5.0	Y	1	Mosch,J		
10.873	811392	7.6	B	58	8	4			0.08	B		11	5	Y	1	Gainsford,M.J	a	
10.885	811393	7.8	S	58	2.5	6			0.25	N	6	60	5.0	Y	1	Gainsford,M.J		
10.885	811394				6.4	7			0.26	N	6	55	5.0	Y	1	Hurst,G.M		
10.889	811395	6.7	S	USNOC	10	4	0.6	302	0.05	B		10	5.5	Y	1	Hurst,G.M	b	
10.901	811396	6.6	B	58	4	6			0.20	SC	10	117	5.5	Y	1	Ward,A		
10.91	811397	6.2	S	DCS2B3A	23	4			0.046	R	4	8	6.6	Y	3	van de Weg,R.L.W	c	
10.91	811398	6.7	B	DCS2B3A	23	4			0.046	R	4	8	6.6	Y	3	van de Weg,R.L.W	c	
10.91	811399	7.9	B	58	4	4			0.08	B		20	5.5	Y	1	Spell,J		
10.917	811400	7.5	M	58		4			0.08	B		20	5.3	Y	2	Falorni,M		
10.92	811401	6.7	S	58					0.08	B		10	5.5		1	Shanklin,J.D	d	
10.92	811402	6.2	S	DCS 2B	17	4			0.05	B		10	6.5	Y	2	Bouma,R.J		
10.92	811403	6.4	S	DCS2B3A	21	6	0.42	250	0.060	B		12	6.6	Y	3	van de Weg,R.L.W	c	
10.92	811404	6.8	B	DCS2B3A	21	6	0.42	250	0.060	B		12	6.6	Y	3	van de Weg,R.L.W	e	
10.93	811405	6.5	B	U ORI	10	5			0.050	B		7	5.5	N	1	Schmeer,P		
10.93	811406	6.8	S	DCS2B3A	8	5			0.100	B		14	6	C	Y	1	Aerts,L	
10.93	811407	7.3	B	AAVSO	20.0	3			0.05	B		7				Churyumov,K		
10.93	811408	8.2	S	58					0.050	B		7	5.5	Y	1	Spalding,G.H		
10.938	811409	7.8	M	58		5			0.37	R	14.3	132	5.3	Y	2	Falorni,M		
10.94	811410	7.9	S	58	8	6			0.08	B		15	5.5C	Y	1	Glowinski,C		
10.944	811411	8.6	S	58	3	3	0.17	120	0.076	R	12	37	5.4C	Y	1	Taylor,M.D		
10.945	811412	6.9	S	58	7.5	5			0.08	B		15	5.2	Y	1	Haver,R	f	
10.95	811413	7.3	B	58	12.8	4			0.05	B		10	5.4	Y	1	Bottger,B		
10.95	811414	7.2	B	58	16.0	3			0.050	B		7	6.0	Y	2	Merlin,J.-C		
10.95	811415	6.5	S	DCS 2B	15	4			0.050	B		10	6	Y	6	Comello,G		
10.95	811416	7.9	B	DCS 2B	7	8			0.115	N	8	45	6.5	Y	1	van Munster,T		
10.955	811417	7.9	S	58		3			0.040	B		8	5.4C	Y	1	Taylor,M.D		
10.958	811418	7.8	B	58	6.5	3			0.070	B		16	5.4C	Y	1	Taylor,M.D		
10.979	811419	7.8	M	58	5.2	5			0.20	SC	10	80	5.3	Y	2	Falorni,M		
10.99	811420	7.2	B	U ORI	6	5			0.080	B		20	5.5	N	1	Schmeer,P		
10.997	811421	8.6	S	58	0.8	4			0.063	R	13.3	34	4.5C	N	1	Skjaeraasen,O	g	

NOTE A Faint stellar condensation.

NOTE B Clear and windy. First sighting. (Observer gave limit as 10.0. Ed.)

NOTE C Comparison stars 7.5 and 8.5. 9 magnitude star very close.

NOTE D 6.5' coma, averted vision.

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

NOTE F 4.2' coma, averted vision.

NOTE G Comet seen under average sky conditions. High winds made observations difficult.

NOTE H Saddleback Butte, 20 mi. east of Lancaster, CA.

NOTE I City lights.

NOTE J Much fog except at zenith. Didn't get telescopes out due to fog. Brightening considerable each day. [sic]

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NOTE K Slight haze, light pollution.  
 NOTE L Partly cloudy. (Observer gave limit as 10. Ed.)  
 NOTE M Exc. see.  
 NOTE N (PA value appears to be measured incorrectly. Ed.)  
 NOTE O (Observer indicated "Y" method. Ed.)  
 NOTE P Coma size from full coma maps using photometer: 13 arc min. NS, 9 arc min. EW.  
 NOTE Q Tail not seen.  
 NOTE R Near-stellar false nucleus  $m_2 = 10.5$ : in 15.2 cm reflector at 76x (Nov. 10.58).  
 NOTE S Tail not seen.  
 NOTE T (Observer gave limit as 12.5. Ed.)  
 NOTE U Area low.  
 NOTE V Razy. Coma diameter approximate.  
 NOTE W Observation time short on account of clouds. (Translated by IHW staff. Ed.)  
 NOTE X Cloudy.  
 NOTE Y Seeing good, transparency good.  
 NOTE Z Comet visible to naked eye in black box. Maximum extra focal star images equal approximately 22 arc minutes in 7x40 binoculars. Coma diameter is lower limit.  
 NOTE a Coma diameter is lower limit.  
 NOTE b Tail at PA 302 definite. 2nd tail at PA 345 uncertain.  
 NOTE c Comet definitely visible to naked eye. Observations are showing differences caused by the magnification effect.  
 NOTE d Cloud.  
 NOTE e Comet definitely visible to naked eye. In 0.225 Newtonian at 100x DC = 7. Observations are showing differences caused by the magnification effect.  
 NOTE f Central condensation diameter approximately 1.0 arc min. (Translated by IHW staff. Ed.)  
 NOTE g The site is in a city with severe light pollution and many streetlights nearby, so my eyes could not dark adapt very well. Because of the bad "seeing", I probably only saw the innermost, brightest part of the coma (which showed no particular peculiarities). It was extremely difficult to distinguish between the background sky and the outermost, faintest part of the coma. Hence the numbers on the coma diameter may be rather uncertain.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
10.006	830175		0.256	N	5.6	45					
10.011	830176		0.256	N	5.6	80	8	5.4	2	Gomez,A	A
10.014	830177		0.06	R	5.7	20	12	5.4	2	Pedraz,S	B
10.021	830178		0.06	R	5.7	40		5.3	2	Cardiel,N	C
10.052	830179	0.95	0.200	SC	10	200		5.3	2	Cardiel,N	D
10.063	830180		0.15	N	5	75	30	5.3	2	Lucius,D	
10.080	830181		0.256	N	5.6	80			2	Velasco,P	E
10.125	830182	0.22	0.203	R	13	110	10	5.4	3	Gallago,J	F
10.157	830183	1.75	0.050	B		7			1	Phillips,J	G
10.186	830184		0.40		28	280	30	6.2	3	Will,M	H
10.190	830185		0.127	R		50			2	Lohvinenko,T.W	I
10.205	830186		0.40		28	280			2	Lohvinenko,T.W	J
10.410	830187	8	0.33	N	4.5	50,150	20	6.5	2	Lohvinenko,T.W	K
10.43	830188	0.49	0.063	R	13.3	34, 53	86	4.0	1	Fabre,R	L
10.863	830189	0.32	0.26	N	6	55	114	5.0	1	Skjaeraasen,O	M
10.863	830190	2.0	0.05	B		10	114	5.5	1	Hurst,G.M	N
10.875	830191	0.13	0.40	N	5	81,254	20	6.0	2	Hurst,G.M	O
10.885	830192	0.25	0.356	SC	11	200	90		1	Merlin,J.-C	P
10.944	830193		0.360	R	14.7	130,240	22	5.4	3	Verdenet,M	Q
10.998	830194	0.19	0.298	N	5	65,179	14	5.7	1	Sarocchi,D	R
										Stott,D	S

NOTE A Spherical and uniform. It was clearly visible the proper movement of the comet during 3 hours of observation. [sic] Bright central condensation.  
 NOTE B Field: 45'.  
 NOTE C (Duration not indicated. Time of observation is assumed to be mid time. Ed.)  
 NOTE D Without details. (Duration not indicated. Time of observation is assumed to be mid time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE E Diameter of the central condensation 30" to 1'. (Duration not indicated. Time of observation is assumed to be end time. Ed.)  
 NOTE F Field 45'. Considerable movement.  
 NOTE G City lights. Still a blur of light but much easier to see. Small star on following side. Some condensation centrally. Condensation close to stellar on low power. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE H Coma diameter 22.5'. Gradual brightening toward the center of the coma, although not very apparent at all. Comet appears rather diffuse, especially toward the edge of the coma, but maintains a circular appearance.  
 NOTE I Comet Halley is seen here with an integrated magnitude of 7.8 (check star: SAO 76017). (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE J The comet is seen as a grayish white with no real sharp features such as a nucleus. It is difficult to say what is there, but it does seem elongated. North and east positions are not given in this drawing. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE K (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE L The nucleus is well defined with a patch of less bright material surrounding it. This circular area is brighter than the outer portions of the coma. The tail is very broad in shape and fan like.  
 NOTE M Severe light pollution and very thin, diffuse clouds affected my image of the comet. Absolutely no peculiarities were seen in or around the coma, and no tail was observed. The decreases in luminosity outwards from the innermost brightest central condensation were totally smooth and gradual as usual. Due to the small size of the telescope used, I suppose only the densest, brightest portion of the coma was visible.  
 NOTE N Coma slightly elongated in PA 135-155. Displaced bright central area 0.5' diameter to north preceding gradient of coma.  
 NOTE O Tail at PA 302 certain, straight narrow and easy in 10x50 binoculars although not seen for sure in 15x80 binoculars. Tail at perhaps PA 345 and rather uncertain. Possibly broader and much fainter. E.A. Hurst assisted with observations.  
 NOTE P Jet at PA 38, jet at PA 201, then curved to PA 228; jet at PA 244. Tail at PA 220, large and diffuse; PA of the axis. Jet at PA 334, diffuse. Diffuse condensation (flakes) glimpsed with averted vision. Darker westward.  
 NOTE Q (Additional drawing supplied made using 11x80 binoculars. Ed.)  
 NOTE R Magnitude estimate by 20x80 binocular = 7.5. Coma diameter = 5.3'. Degree condensation 3. At left of comet there is a little nebulosule around a star. [sic] Seem to see a dark part into the coma. [sic] (Two drawings supplied, one at 0.47 arc min./mm and one marked "Particulars at 240x M1. Res". Ed.)  
 NOTE S Beginnings of tail seen to PA 83 deg.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
10.064	850113	0.200	3.8		10.3 x 6.9	15.00	Fujichrome	400/	N	X	1/P	2	Lucius,D	
10.109	850114	0.200	4.5		10.3 x 6.9	3.00	Kodak Tri-X		N	T	0/C	1	Priester,D.C	A
10.112	850115	0.200	4.5		10.3 x 6.9	1.50	Kodak Tri-X		N	T	1/C	1	Priester,D.C	B
10.115	850116	0.200	4.5		10.3 x 6.9	2.00	Kodak Tri-X		N	T	2/C	1	Priester,D.C	A
10.126	850117	0.200	4.5		10.3 x 6.9	5.17	Kodak Tri-X		N	T	3/C	1	Priester,D.C	A
10.136	850118	0.200	4.5		10.3 x 6.9	0.75	Kodak Tri-X		N	T	4/C	1	Priester,D.C	A
10.394	850119	0.500	5		4.1 x 2.7	5.00	Sakura 1600	1600/	N	S	4/P	1	Sanford,J	C
10.934	850120	0.500	5.6		4.1 x 2.7	14.50	Ilford XP1		N	X	3/P	1	Ward,A	D
10.952	850121	0.200	4.5		10.3 x 6.9	4.00	3M	1000/	N	O	1/T	1	Martin,D	
10.955	850122	1.400	5.6	0.260	1.5 x 1.0	10.00	Ilford HP5	400/27	N	O	3/C	1	Paolinetti,R	E
10.962	850123	0.200	4.5		10.3 x 6.9	2.00	3M	1000/	N	O	2/T	1	Martin,D	
10.965	850124	1.400	5.6	0.260	1.5 x 1.0	20.00	Ilford HP5	400/27	N	O	4/C	1	Paolinetti,R	E
10.970	850125	0.200	4.5		10.3 x 6.9	3.00	Kodak Tri-X	400/	N	O	16/C	1	Martin,D	
10.977	850126	0.200	4.5		10.3 x 6.9	5.00	Kodak Tri-X	400/	N	O	17/C	1	Martin,D	

DATE: 10 NOV 1985

DATE: 10 NOV 1985

Date(UT)	ACW#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Cdng	Id/Typ	Site	Observer(s)	Notes
10.978	850127	1.400	5.6	0.260	1.5 x 1.0	2.00	Ilford HP5	400/27	N	0	5/C	1	Paolinetti,R	E
10.983	850128	0.200	4.5		10.3 x 6.9	2.00	Kodak Tri-X	400/	N	0	18/C	1	Martin,D	

NOTE A Push processed to 800 ASA.

NOTE B Start time uncertain. Push processed to 800 ASA.

NOTE C Fog, dew, ice; cold camera pulled helical focuser out slightly.

NOTE D Yellow filter also used. Processed for 1600 ASA. UV filter used.

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

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)	Notes	
11.00	811422	8.4	B	AAVSO	6.0	4			0.20	N	5	35				Tsvetkov, L		
11.01	811423	7.2	M	58	6	5			0.06	R	4	10	6.0	Y	1	Granslo, B.H		
11.01	811424					7			0.203	SC	10	80	6.0	Y	1	Granslo, B.H		
11.010	811425	6.8	S	58	12	4			0.050	B		10	6.4	Y	2	Rogers, J.H		
11.015	811426	6.5	B	58	5	6			0.20	SC	10	77	5.5	Y	1	Ward, A		
11.016	811427	7.9	M	58	5.6	3			0.089	R	13.7	32		C	Y	1	Linger, S	A
11.021	811428	7	B	58	7	5			0.256	N	5.6	80		Y	1	Losada, R		
11.05	811429	6.8	S	DCS 2B	12	5			0.050	B		10	6.5	Y	1	van Loo, F.R		
11.125	811430	7.8	S	58		3			0.318	N	8	40		Y	1	Bathaway, W	B	
11.126	811431	7.2	S	58, 57	5	2			0.25	N	5.6	56	6	Y	1	Jordan, J	C	
11.133	811432								0.362	N	5	302	6.0	Y	1	Stephan, C	D	
11.15	811433	5.8	S	58	11	3			0.080	R	3.7	19	5.5	Y	3	Spratt, C.E	E	
11.22	811434	6.3	S	58	17	4			0.040	B		8	6.5	Y	1	Keen, R	F	
11.278	811435	7.5	M	58	2.7	5			0.08	B		11	5.2	Y	1	Glassett, W	G	
11.28	811436	6.3	S	58	22	4			0.040	B		8	6.5	Y	1	Keen, R	F	
11.28	811437	6.3	V	58					EX				6.5	Y	1	Keen, R		
11.2903	811438	7.8	S	SAO	7	3			0.080	B		20	4.6	Y	3	Machholz, D	H	
11.31	811439	5.7	S	58	12	3			0.080	B		11	5.9	Y	1	Spratt, C.E	I	
11.337	811440	8.4	S	58		3			0.15	N	8	30	6.0	Y	1	Foster, G		
11.482	811441	6.7	B	58		3			0.050	B		7	6.4	Y	1	Krisciunas, K	J	
11.51	811442	7.1	S	58	10	6			0.07	B		10	5.5	Y	1	Yasuki, M		
11.52	811443	7.0	S	58	10	6			0.07	B		10	5.0	Y	1	Yasuki, M		
11.54	811444	7.8	M	58	10	5			0.08	B		11	5.5	Y	1	Mitsuma, S	K	
11.552	811445	8.7	S	58	4	3			0.153	N	8.6	52	4.5	Y	1	Iwaki, Y		
11.555	811446	8.0	M	58	10	7			0.16	N	6.3	31	5.5	Y	1	Mitsuma, S	K	
11.563	811447	8.1	B	58					0.07	B		10	4.0	Y	1	Date, M		
11.57	811448	8.8	B	SAO	15	5			0.15	N	5.7	34	5.0	Y	7	Tanikawa, M		
11.587	811449	8.2	S	58	1.0	3			0.12	N	6	36	3.0C	Y	1	Kishi, A		
11.590	811450	8.0	S	58	4	3			0.05	B		10	5.0	Y	1	Williams, P.F		
11.595	811451				4	9	0.2	355	0.15	N	8	50	5.0	Y	1	Williams, P.F	L	
11.625	811452	8.9	M	UY TAU	3	7			0.1	N	10	40	5.5	Y	1	Ichikawa, K		
11.764	811453	7.9	B	58	4.5	5			0.10	B		14	5.0	Y	1	Hasubick, W		
11.77	811454	7.7	S	AAVSO	6	5			0.13	N	6.3	24	4.5	Y	1	Hayashi, A	M	
11.77	811455	7.2	B	AAVSO	10.0	4			0.05	B		7				Churyumov, K		
11.774	811456	7.1	B	58	5.4				0.080	B		20	5.0	Y	1	Koch, B.O		
11.78	811457	7.5	B	AAVSO					0.11	R						Churyumov, K		
11.78	811458	8.0	B	AAVSO					0.20	R		7				Churyumov, K		
11.78	811459	6.1		AAVSO					EX							Churyumov, K		
11.790	811460	8.3	B	58	4	4			0.03	B		8	5.0	Y	1	Bretschneider, H		
11.802	811461	8.5	M	CZ	5	4			0.31	N	8	62	4.9	Y	1	Hajek, P		
11.802	811462	8.0	S	58					0.064	R	6.3	40		C	N	1	Kieltyka, G	N
11.81	811463	7.1	S	58	12.2	5			0.05	B		7	5.0	Y	1	Kanai, K		
11.81	811464	7.1	B	58	8.0	3			0.050	B		7	6.0	Y	2	Merlin, J.-C		
11.813	811465	7.8	S	58		4			0.064	R	6.3	25	5	C	N	1	Paradowski, M	O
11.819	811466	7.8	S	58	4.1	6			0.080	B		20	5.0	Y	1	Koch, V		
11.819	811467	9.0	M	CZ					0.10	B		25	5	Y	1	Valasek, V	P	
11.82	811468	6.2	S	DCS 2B	12	5			0.08	B		15	5	C	Y	2	Bouma, R.J	
11.82	811469	7.5	S	DCS 3A	8	5			0.080	B		7	6.0	Y	1	Wills, P		
11.82	811470	6.6	B	58	10.0	3			0.050	B		7	6.0	Y	1	Merlin, J.-C		
11.822	811471	8.2	B	58	1.9	3			0.060	R	15	41	6.0	Y	1	Castino, R		
11.823	811472	7.9	B	58	5.6	5			0.03	B		8	5.0	Y	1	Hasubick, W		
11.83	811473	7.2	B	58	5	5			0.100	B		14	4.2	Y	1	Kraling, W	Q	
11.83	811474	8.1	B	58	3	4			0.08	B		20	5.5	Y	1	Spell, J		
11.833	811475	8.6	B	58	2.0	6			0.113	N	8	22	5.5	Y	1	Schambeck, C.M		
11.833	811476	7.5	S	58	6	7			0.081	B		22	5	Y	1	Sternwarte Hof	R	
11.840	811477			58		7			0.254	N	7	116	5	Y	1	Sternwarte Hof	S	
11.847	811478	8.6	S	VYTAU58	3	5			0.203	SC	10	80	5.2	Y	1	Foulkes, M		
11.854	811479	8.9	B	58	4	5			0.200	N	6	60	5.5	Y	2	Kellner, A	T	
11.854	811480	7.0	M	58		5			0.07	B		20	5	Y	1	Tanti, T		
11.86	811481	8.1	B	DCS 3A	5	8			0.115	N	8	45	5.5	Y	1	van Munster, T		
11.8680	811482	7.8	S	58	11	7			0.11	R	11	36	5.6	Y	1	Znasik, M		
11.8702	811483	7.6	S	58	14	6			0.08	B		10	5.6	Y	1	Znasik, M		
11.875	811484			58		1			0.07	B		10	4.2	N	1	Deconinck, M		
11.88	811485	7.3	S	DCS 3A	10	5			0.150	R	8	34	5	C	Y	1	Aerts, L	
11.881	811486	8.2	B	58	4	6			0.063	R	13	34	5.5	Y	1	Zische, E		
11.882	811487	8.5	B	CZ	12	3			0.080	B		10	5.3	N	1	Bilek, V	U	
11.885	811488	8.1	B	58	3.0	6			0.050	B		7	5.5	Y	1	Koschny, D		
11.89	811489	8.6	B	58	7	5			0.080	B		20		C	Y	1	Jannink, D.W	V
11.896	811490	7.7	M	58	10	4			0.08	B		11	5.5	Y	1	Gubio, H		
11.896	811491	7.0	S	58	6.5	5			0.089	R	5.5	18	5.5	N	1	Ventura, F		
11.902	811492	8.0	B	58	3.5	5			0.07	B		20	5.5	Y	2	Filimon, E		
11.904	811493	7.5	S	58		5			0.05	B		10	4.5C	Y	1	Giuntoli, M		
11.906	811494	8.7	S	58	1.5	4			0.070	B		16	5.4C	Y	1	Taylor, M.D		
11.910	811495	7.6	S		3.5	5			0.050	B		16	5.2	Y	1	Nolle, M		
11.91	811496	8.4	B	E	3.0	4			0.07	N	8	33				Bezrodniy, A		
11.913	811497	8.5	M	58	2.1	7			0.254	N	6.4	41	5.5	Y	3	Abbott, J	W	
11.958	811498	8.5	B	58	4	4			0.067	R	12	53	6.0C	Y	1	Sciezor, T	X	
11.962	811499	6.8	B	58		2			0.28	SC	5	70	4.3	Y	1	Amorette, M		

NOTE A Clear and windy. Star in coma (mag. 10). (Observer gave limit as 10.5. Ed.)

NOTE B Light haze high humidity.

NOTE C Partly clouding skies made observations difficult.

NOTE D Averted vision - nucleus looks like multiple pin points.

NOTE E Large! DC approximate.

NOTE F Modified Sidgwick method used.

NOTE G Windy!

NOTE H Thin high clouds.

NOTE I DC approximate.

NOTE J Comparison stars 64, 75.

NOTE K Tail not seen.

NOTE L Tail only suspected.

NOTE M Tail detected?

NOTE N Clouds.

NOTE O Wind 60 km/h.

NOTE P Adapted to the actual (rather bad, street lights visible) observing conditions.

NOTE Q Nucleus approximately magnitude 10.5.

NOTE R Perhaps 3 or 4 jets.

NOTE S Clear.

NOTE T Seeing good, transparency good. Bright star near comet.

NOTE U Interfered by Kappa Tau.

NOTE V Telescopic limit is 11.

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NOTE W Comparison stars (8.3, 8.7), (7.5, 8.5). 4.2 star very close.  
 NOTE X Very good weather.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
11.021	830195		0.256	N	5.6	80			5	Losada,R	A
11.147	830196	0.33	0.20	N	8	70	28	5	1	Vargas B.,A.G	B
11.169	830197	0.25	0.20	N	8	120	13	5	1	Vargas B.,A.G	C
11.488	830198	0.7	0.063	R	13.3	34, 53	6	4.5	1	Skjaeraasen,O	D
11.57	830199	1.38	0.15	N	5.7	34	14	5.0	2	Tanikawa,M	
11.911	830200		0.356	SC	11	200	45		1	Verdenet,M	E
11.936	830201	0.37	0.254	N	6.4	65,130	6	5.5	3	Abbott,J	F

NOTE A Dense nucleus, high DC (5 or more). (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

NOTE B An oval coma was appreciated. [sic]

NOTE C Unspecified feature at approximately PA 71. The coma present an oval aspect 2.78"x3.24" in they're axis. A PA 71 was estimated at DC = 5. [sic]

NOTE D Severe light pollution and extremely thin clouds worsened the seeing. I was not able to observe any kind of features, and the coma was circular and the brightness changes outward from the innermost, densest part of the coma were rather smooth/gradual. Because of the light pollution, the background sky was bright, so the contrast was low. No visible tail. Total field of drawing: 1 deg. 9'.

NOTE E (Additional drawing submitted made using 11x80 binoculars. Ed.)

NOTE F Coma extension at PA 75 deg. Coma extension very faint. Close proximity of Kappa Tauri (4.2) made detail difficult to discern.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdag	Id/Typ	Site	Observer(s)	Notes
11.006	850129	0.500	5.6		4.1 x 2.7	25.00	Ilford XP1		N	X	4/P	1	Ward,A	A
11.008	850130	0.200	4.5		10.3 x 6.9	4.00	Kodak Tri-X	400/	N	O	19/C	1	Martin,D	
11.013	850131	0.200	4.5		10.3 x 6.9	2.03	Kodak Tri-X	400/	N	O	20/C	1	Martin,D	
11.016	850132	0.200	4.5		10.3 x 6.9	3.00	Kodak Tri-X	400/	N	O	21/C	1	Martin,D	
11.017	850133	1.780	5	0.356	1.2 x 0.8	18.37	Fuji 1600	1600/	N	M	1/P	1	Mobberley,M	B
11.021	850134	0.200	4.5		10.3 x 6.9	4.05	Kodak Tri-X	400/	N	O	22/C	1	Martin,D	
11.034	850135	0.200	4.5		10.3 x 6.9	5.00	Kodak Tri-X	400/	N	O	23/C	1	Martin,D	
11.090	850136	0.400	6.3		5.2 x 3.4	5.00	3M	1000/	N	O	3/T	1	Martin,D	
11.130	850137	0.200	4.5		10.3 x 6.9	15.00	Kodak Tri-X		N	T	5/C	1	Priester,D.C	C
11.168	850138	0.200	4.5		10.3 x 6.9	10.00	Kodak Tri-X		N	T	8/C	1	Priester,D.C	C
11.211	850139	0.200	3.5		10.3 x 6.9	9.00	Agfa	1000/	N		3/S		Pryal,J	
11.212	850140	0.058	1.4		34.5 x23.4	15.00	Kodak Tri-X		N	T	11/C	1	Priester,D.C	C
11.222	850141	0.058	1.4		34.5 x23.4	10.00	Kodak Tri-X		N	T	12/C	1	Priester,D.C	C
11.528	850142	1.270	5	0.254	1.6 x 1.1	10.00	Kodak 2415		Y	O	19/P	1	Johnstone,G.F	
11.893	850143	0.300	4		6.9 x 4.6	5.00	Potopan HL	400/27	N	O	2/P	1	Slusarczyk,J	
11.949	850144	1.780	5	0.356	1.2 x 0.8	8.40	3M 1000	1000/	N	M	2/P	1	Mobberley,M	B
11.963	850145	1.780	5	0.356	1.2 x 0.8	17.32	3M 1000	1000/	N	M	02/P	1	Mobberley,M	B
11.971	850146	1.000	5.6		2.1 x 1.4	75.00	Kodak Tri-X	320/26	N	O	2/N	1	Zimnikoval,P	D
11.983	850147	1.780	5	0.356	1.2 x 0.8	19.20	3M 1000	1000/	N	M	002/P	1	Mobberley,M	B

NOTE A Yellow filter also used; has filter factor of 1.5x on black and white film. Processed for 1600 ASA. UV filter used.

NOTE B This color slide film was processed as a negative.

NOTE C Push processed to 800 ASA.

NOTE D Large format (6x6 cm) film used.



DATE: 12 NOV 1985

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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
12.003	811500	7.8	S	58	2.6	6			0.25	N	6	60	5.6	Y	1	Gainsford,M.J	
12.020	811501	7.9			1.5	2			0.050	R	11	22	6.0	Y	1	Kliche,J	
12.049	811502	9.4	B	CZ	8	6			0.10	B		25	5.6	N		Silhan,J	
12.06	811503	8.7			3				0.034	B		9			1	Pereira,A	A
12.06	811504	8.5	B	AA		3			0.100	B		14	6.0	Y	1	Simmons,K	
12.06	811505	9.0	B	AA		3			0.100	B		14	6.0	Y	1	Simmons,W	
12.07	811506	6.4	S	DCS 2B	15	5			0.050	B		10	6.5	Y	3	Comello,G	
12.07	811507								0.203	C	10	50	6.5	Y	3	Comello,G	B
12.08	811508	7.2	S	58	8	7		0.08	B			15	5.8C	Y	1	Glovinski,C	
12.085	811509	6.9	S	58	7.0	5			0.08	B		15	5.0	Y	1	Haver,R	
12.090	811510				16	6			0.08	B		15	6.0	Y	1	Hurst,G.M	
12.097	811511	6.7	S	USNOC	16.8	4			0.05	B		10	6.0	Y	1	Hurst,G.M	
12.104	811512	7.7	B	58	10	2			0.05	B		7	5.0	Y	3	Chmielewski,W	
12.113	811513								0.152	N	8	90	5.0	Y	1	Stephan,C	C
12.13	811514	6.7	S	58					0.08	B		10	6.0	Y	1	Shanklin,J.D	D
12.16	811515	7.3	B	U ORI	6	4			0.050	B		7	5.0	N	1	Schmeer,P	
12.16	811516	5.7	S	57, 58	10	3			0.080	B		11	5.1	Y	3	Spratt,C.E	
12.174	811517				16	0			0.05	B		7	4.3			Laird,R	
12.180	811518	8.2			3	5			0.130	N	8	40	5.0	Y	1	Lieder,F	
12.21	811519	7.7	S	BAA					0.20	R	12	40	6.0			Shanklin,J.D	
12.215	811520	6.9	M	58	10.0	6			0.05	B		12	6.3	Y	1	Knight,S	
12.22	811521	6.6	S	BAA					0.05	B		7	5.7			Shanklin,J.D	
12.226	811522	6.9	B	58	15	5			0.102	R	14.7	60		Y	1	Medway,K	E
12.226	811523	6.7	M	58	5	4			0.050	B		7	5.4	Y	1	Robertson,T	
12.24	811524	6.2	S	58	25	4			0.040	B		8	6.0	Y	1	Keen,R	F
12.2563	811525	7.6	S	SAO	7	5			0.080	B		20	4.8			Machholz,D	
12.361	811526	7.5	B	58		1			0.08	R	6.3	16	2.6	Y	1	Burch,J.Q	G
12.361	811527	6.9	M	58	12	6		0.05	B			10	6.0	Y	2	Fabre,R	H
12.375	811528	7.7	B	58		1		0.08	R	6.3		25	2.6	Y	1	Burch,J.Q	G
12.486	811529	6.4	S	58	16	2			0.050	B		10		Y	2	Tregaskis,T.B	I
12.497	811530				6.5	4			0.102	N	6	24		Y	2	Tregaskis,T.B	J
12.50	811531	7.4	M	58	11	5			0.08	B		11	5.5	Y	1	Mitsuma,S	K
12.51	811532	8.0	B		7.0	5			0.15	N	8	43	5.5	N	1	Uda,K	
12.52	811533	7.5	M	58	11	7			0.16	N	6.3	31	5.5	Y	1	Mitsuma,S	
12.52	811534	8.8	B	SAO	12	5			0.15	N	5.7	34	4.0	Y	7	Tanikawa,M	
12.531	811535	7.5	S	58	6.0	1			0.050	B		12	5	Y	1	Batza,H	L
12.54	811536	6.3	S	58	10				0.08	B		15	6.5	Y	1	Lovejoy,T	M
12.552	811537	8.0	B	58					0.07	B		10	5.0	Y	1	Date,M	
12.58	811538	8.0	B	58	11	7			0.15	N	8.6	41	6.0	Y	4	Makino,J	
12.590	811539	7.8	M		4.5	7			0.10	N	10	55	5.5C	Y	1	Kato,T	
12.59	811540	6.0	B		10	5			0.16	N	4.8	24		Y	1	Maeda,S	
12.61	811541	8.0	B	SAO	7.5	6			0.20	N	5.6	44	5.5	Y	6	Nakamura,A	
12.61	811542	7.5	M	SAO	9.5				0.06	R	12	22		Y		Nakamura,A	
12.618	811543	7.0	M		5				0.030	B		8	5.5C	Y	1	Kato,T	
12.625	811544	7.8	M	58	4				0.1	N	10	40	6.0	Y	1	Ichikawa,K	
12.658	811545	7.9	S	58	1.2	5			0.12	N	6	36	4.0	Y	1	Kishi,A	
12.74	811546	6.8	S	58	16.6	5			0.05	B		7	6.0	Y	1	Kasai,K	
12.74	811547	7.4	B	AAVSO	6	5			0.08	R		8		Y	4	Shirokov,A	
12.75	811548	8.5	B	58		7			0.15	N	8.6	41	6.0	Y	4	Makino,J	
12.75	811549	7.8	B	E					0.10	R		20	4.3	Y	2	Storey,D	N
12.76	811550	7.6	S	AAVSO	6	5		0.17	0.13	N	6.3	24	6.5	Y	1	Poroshin,A	
12.788	811551	7.6	S	58	2.9	5			0.080	B		20	4.3	Y	2	Hayashi,A	O
12.81	811552	7.6	B	AAVSO					0.11	R		26	5.5	Y	1	Churyumov,K	
12.812	811553	7.9	B	58		3			0.090	N	7.2	26	5.5	Y	1	Zohla,F	
12.83	811554	6.9	S	DCS 3A	8	3			0.080	B		15	5.5	Y	2	Vanstra,W.T	
12.832	811555				10.8	5			0.08	B		15	5.5	Y	1	Hurst,G.M	P
12.833	811556	7.3:	B						0.125	R	6	35	5.6	Y	1	Guthrie,O	
12.834	811557	7.5	S	Y TAU	15.0	6			0.08	B		30	5.5	Y	2	Campos,J	
12.839	811558	6.0	S	USNOC					0.05	B		10	6.0	Y	1	Hurst,G.M	
12.84	811559	5.9	S	DCS 2B	17	4			0.05	B		10	6.5	Y	2	Bouma,R.J	Q
12.84	811560	7.5	B	AAVSO	7	3			0.08	R		8				Shirokov,A	
12.840	811561	6.8	M	58		4			0.05	B		12	5	Y	1	Tanti,T	R
12.847	811562				4	5			0.090	M	11	40	5.4	N	7	Foulkes,M	S
12.85	811563	8.0	B	58					0.050	B		12	4.0	Y	1	Mosch,J	
12.86	811564	6.5	B	DCS2B3A					0.040	B		7	6.5	Y	2	Bus,E.P	
12.86	811565	5.9	S	DCS2B3A	22	4			0.040	B		7	6.5	Y	2	Bus,E.P	T
12.86	811566	7.7	S	DCS 3A	10	4			0.110	N	8	45	4.5C	N	1	Douma,H	
12.86	811567	7.9	B	AAVSO					0.20	R						Churyumov,K	
12.88	811568	5.8	S	DCS2B3A	25	4			0.018	B		3	6.5	Y	2	Bus,E.P	U
12.88	811569	6.4	S	DCS 2B	15	5			0.045	B		9	6	Y	3	Comello,G	
12.885	811570	7.8	M	58		7			0.254	N	6.4	41		Y	3	Abbott,J	V
12.897	811571	8.0	B		4	5			0.063	R	13	34	5.5	Y	1	Zische,E	
12.90	811572	7.1	S	DCS 2B	7	6			0.100	B		14	6.5	Y	1	van Loo,F.R	
12.903	811573	6.8	S	58	8	5			0.089	R	5.5	18	5.0	N	1	Ventura,F	
12.903	811574	7.0	M	58	6	4			0.09	M	11	56	6.0	Y	10	Westlund,M	
12.906	811575	7.4	S	58	10	4			0.030	R	4	6	5.4	Y	1	Foulkes,M	W
12.915	811576	7.4	S	Y TAU	20.0	6			0.05	B		7	5.8	Y	2	Campos,J	
12.915	811577	6.1	B	58	5	6			0.20	SC	10	117	6	Y	1	Ward,A	W
12.92	811578	8.4	B	58	7	4			0.080	B		20		C	Y	Jannink,D.W	X
12.92	811579	6.7	B	58	13.0	3			0.050	B		7	6.0	Y	2	Merlin,J.-C	
12.928	811580	6.3	B	58		6			0.050	B		10	6	Y	1	Ward,A	W
12.931	811581	6.0	S	58	21	5			0.05	B		10	6.5	Y	1	Hurst,G.M	
12.932	811582	5.5:							EY			6.5	Y	1	Hurst,G.M	Y	
12.938	811583	7.3	B	58					0.050	B		7	5.5	N	1	Lunde,R	
12.94	811584	6.5	S	BAA					0.08	B		10	5.7			Shanklin,J.D	
12.94	811585	6.3	B	U ORI	12	4			0.050	B		7	5.0	N	1	Schmeer,P	
12.946	811586	7.8	S	58	2.3	7		0.17	0.25	N	6	60	5.6	Y	1	Gainsford,M.J	Z
12.946	811587				3	7			0.203	SC	10	80	5.5	Y	1	Foulkes,M	W
12.95	811588	5.6	S	58					EY			5.7				Shanklin,J.D	
12.95	811589	7.6	S	58					0.050	B		7	5.7	Y	1	Spalding,G.H	
12.957	811590	6.8	S	58	7	4			0.08	B		11	5.6	Y	1	Gainsford,M.J	
12.958	811591	5.2	B	101		5			0.05	B		10	4	N	1	Gelinas,M.A	
12.958	811592	7	S	58	5	4			0.050	B		10	3.5	N	1	Marekfa,G	a
12.969	811593	7.9	S	58	2.6	5			0.080	R	15	30	5.3	Y	2	Storey,D	
12.972	811594	8.5	S	58	2.5	3			0.063	R	13.3	53	4.5C	N	1	Skjaeraasen,O	b
12.990	811595	8.5	S	58	4	3			0.153	N	8.6	33	5.0	Y	1	Iwaki,Y	
12.997	811596	7.4	S	58VYTAU	10	5			0.065	B		12	5.5	Y	1	Foulkes,M	W

NOTE A (Observer gave limit as 8.8. Ed.)

NOTE B PA approximate.

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also used.  
 NOTE D Sharp central condensation.  
 NOTE E (Observer gave limit as 13.0. Ed.)  
 NOTE F Modified Sidgwick method used.  
 NOTE G Inner city lights and low fog.  
 NOTE H Best view 10x50's. (PA value appears to be measured incorrectly. Ed.)  
 NOTE I Faintest star seen in instrument approximately 9.  
 NOTE J Faintest star seen in instrument approximately 11.  
 NOTE K Tail not seen.  
 NOTE L Raze.  
 NOTE M Glimpsed with naked eye.  
 NOTE N Tail detected.  
 NOTE O Low altitude when observed. Street lighting.  
 NOTE P Comet bright. Halo around coma. (Translated by IHW staff. Ed.)  
 NOTE Q Comet definitely seen with naked eye. (Observer also used chart DCS 3a. Ed.)  
 NOTE R Seeing good, transparency good.  
 NOTE S Streetlights.  
 NOTE T Comet well visible to naked eye. Coma diameter is lower limit.  
 NOTE U Maximum extra focal star images = about 30 arc minutes in 3x18 binoculars.  
 NOTE V Comparison stars 7.6 and 8.3.  
 NOTE W Very clear.  
 NOTE X Telescopic limit is 10.  
 NOTE Y Suspected only.  
 NOTE Z Tail length and PA uncertain.  
 NOTE a (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE b The site is in a city with severe light pollution and many streetlights nearby, so my eyes could not dark adapt very well. Because of the bad "seeing", I probably only saw the innermost, brightest part of the coma (which showed no particular peculiarities). It was extremely difficult to distinguish between the background sky and the outermost, faintest part of the coma. Hence the numbers on the coma diameter may be rather uncertain.

## SUB-NETWORK: DRAWING

Date(UT)	ACON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
12.140	830202	0.33	0.20	N	8	70	34	5	1	Vargas B.,A.G	A
12.159	830203	0.25	0.20	N	8	120	18	5	1	Vargas B.,A.G	B
12.53	830204	1.38	0.15	N	5.7	34	14	4.0	2	Tanikawa,M	
12.885	830205	1.2	0.08	B		15	151	5.5	1	Hurst,G.M	
12.905	830206	1.6	0.090	M	11	56	5	5.5	10	Westlund,M	C
12.906	830207	0.25	0.356	SC	11	200			1	Vardenet,M	
12.942	830208	0.15	0.298	N	5	65,179	13	6.3	1	Stott,D	D
12.982	830209	0.41	0.063	R	13.3	34, 53	32	4.5	1	Skjaeraasen,O	E

NOTE A The coma present a regular aspect around central condensation. [sic]  
 NOTE B The coma present a regular aspect around central condensation. The DC was estimated in 5. [sic]  
 NOTE C (Additional drawing submitted made using 11x80 binoculars. Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE D Tail at PA 68 deg. Coma extension at PA 195 deg. Coma elongated but not on the same axis as the tail, which is still very short and difficult to define.  
 NOTE E Field: 48'. The coma appeared rather similar to a globular cluster, it was totally circular and symmetric and showed no peculiarities at all. A bright, tiny, almost star-like "nucleus" (central condensation) was observed, although the changes of brightness outwards from the "nucleus" were smooth and gradual. This observation was severely affected by light pollution, which made the background sky a lot brighter than desirable. Besides, no filter was used, so the contrast was not very good.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACON#	FL	I/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.075	850148	0.300	4		6.9 x 4.6	11.00	Potopan HL	400/27	N	O	6/P	1	Slusarczyk,J	
12.125	850149	0.300	4		6.9 x 4.6	10.00	Potopan HL	400/27	N	O	3/P	1	Slusarczyk,J	
12.465	850150	0.75	5	0.15	2.7 x 1.8	20.00	Ilford HP5		N		4/P	1	Barclay,J	A
12.503	850151	0.055	1.2		36.2 x 24.6	2.00	Fujichrome	400/	N	X	1/S	2	Tregaskis,T.B	
12.739	850152	1.760	5.8	0.300	1.2 x 0.8	20.00	Kodak 2415		Y		101/P	1	Niijima,T	B
12.760	850153	1.760	5.8	0.300	1.2 x 0.8	31.00	Kodak 2415		Y		102/P	1	Niijima,T	B
12.922	850154	0.700	5	0.14	2.9 x 2.0	30.00	Kodak IIA-F		N	M	26/P	1	Ridley,H.B	C

NOTE A (Photographer rated film at ISO 5000. Ed.)  
 NOTE B Observer's image identifier is preceded by prefix Nj. Ed.)  
 NOTE C This astrograph uses photographic plates. (Observer's image identifier is ZA 26. Ed.)

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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
13.008	811597	7.7	M	58		4			0.089	R	13.7	32		Y	1	Linger,S	
13.02	811598	7.1	S	BAA					0.20	R	12	40	6.0		1	Shanklin,J.D	A
13.035	811599				8	7			0.200	R	14	40	6.4	Y	1	Rogers,J.H	
13.04	811600	7.2	M	SC 2000	4				0.06	R	4	10	6.0	Y	1	Granslo,B.H	B
13.04	811601				3.0	7			0.203	SC	10	80	6.0	Y	1	Granslo,B.H	C
13.06	811602	8.2			4				0.034	B		9			1	Pereira,A	D
13.073	811603	7.0	S	58		6			0.080	B		10	6.4	Y	1	Rogers,J.H	E
13.083	811604	7.6	B	58	12	2			0.05	B		7	5.0	Y	4	Chmielewski,W	
13.10	811605	5.6	S	58						EX			6.0		1	Shanklin,J.D	
13.10	811606	7.8	B	DCS 3A	12	2			0.080	B		15	5.5C	N	1	Keijmel,P.C	
13.118	811607	6.8	S	58	9				0.050	B		10	6.4	Y	2	Rogers,J.H	
13.139	811608	7.5	B	58	20				0.035	B		7	5.0	Y	1	Stephan,C	
13.14	811609	5.5	S	58	14	3			0.080	B		11	5.8	Y	3	Spratt,C.E	F
13.14	811610	5.6	S	58	10	3			0.080	R	3.7	19	5.8	Y	3	Spratt,C.E	F
13.146	811611	8.4	S		6.5	3	0.12		0.30	N	4.5	84	4	Y	1	Fernandez,Y	G
13.16	811612	5.1	S	58	20	1							6.2	Y	3	Spratt,C.E	H
13.167	811613	6.9	B	58					0.080	B		20	5.0	Y		Smith,D	
13.201	811614	7.8	S	58	5.7	4			0.070	B		16	5.4C	Y	1	Taylor,M.D	
13.215	811615	7.8	B	58		2			0.050	B		10	5.5C	Y	1	Stapleton,J	I
13.2507	811616	7.2	S	SAO		6			0.080	B		20	5.4	Y	3	Machholz,D	
13.274	811617	6.9	S	57	5	2			0.25	N	5.6	56	6	Y	1	Jordan,J	J
13.29	811618	6.2	S	58	23	4			0.040	B		8	6.5	Y	1	Keen,R	K
13.302	811619	7.6	S	58	20	3			0.08	R	6	20	5.4	Y	1	Bracken,R	
13.32	811620	6.8	M	58					0.05	B		10	6	Y	3	Hale,A	
13.354	811621	6.7	M	58	4	4			0.15	N	8	48	5.4	Y	1	Robertson,T	
13.368	811622	6.6	S		13	3			0.080	B		11		Y	3	Pryal,J	L
13.435	811623	7.4	M			7			0.10	N	10	55	5.0C	Y	1	Kato,T	
13.462	811624	7.2	B	58		5			0.08	R	6.3	16	6.5	Y	3	Burch,J.Q	M
13.490	811625	6.9	S	58		2			0.050	B		10		Y	1	Tregaskis,T.B	N
13.497	811626		S	58	3.2	3			0.152	N	8	64		Y	1	Tregaskis,T.B	O
13.507	811627	7.5	B						0.035	B		7		N	1	Okada,M	
13.52	811628	7.7	B	58	3	6			0.20	N	5	36		Y	1	Curtis,D	P
13.52	811629	7.8	B	M	3.5	6			0.21	N		80		Y	1	Knyazyuk,N	
13.53	811630	7.4	M	58	9.5	6			0.08	B		11	6	Y	1	Mitsuma,S	Q
13.531	811631	7.3	S	58	8.0	1			0.050	B		12	5.5	Y	1	Batza,H	
13.54	811632	6.2	S	57	10				0.08	B			6.5	Y	1	Lovejoy,T	R
13.541	811633	7.5	S	58	8.0	2			0.20	N	10	70	5.5	Y	1	Batza,H	
13.549	811634	8.0	B	58					0.07	B		10	5.0	Y	1	Date,M	
13.55	811635	6.3	S	58					0.05	B		10		Y	1	Seargent,D	
13.55	811636	7.5			8	6			0.08	B		11	5.0	Y	2	Washi,S	S
13.57	811637	7.8	S			6			0.08	B		11	4.0	N	1	Momose,M	
13.578	811638	7.6	S	58	5	3			0.153	N	8.6	52	5.5	Y	1	Iwaki,Y	
13.58	811639	7.8	S	58	8				0.41	N	4.2	86	6.2	Y	4	Clark,M.L	
13.58	811640	8.0	B		7.5	5			0.15	N	8	43	5.5	N	1	Uda,K	
13.59	811641	7.4	S	58					0.03	R		6	6.2			Clark,M.L	T
13.60	811642	7.2	S	58	12	5			0.05	B		7	6.2	Y	4	Clark,M.L	U
13.625	811643	6.9	S	58	6.0	5			0.152	N	8	64		Y	1	Tregaskis,T.B	V
13.626	811644	7.5	M	58	5.7				0.1	N	10	56	5.5	Y	1	Ichikawa,K	
13.670	811645	7.0	M		8				0.030	B		8	5.5C	Y	1	Kato,T	
13.673	811646	7.5	M		4.0	7			0.10	N	10	55	5.5C	Y	1	Kato,T	
13.70	811647	7.5	M		8	7			0.05	B		7	6.0	Y	2	Hiraga,M	
13.72	811648	8.0	B	58		7			0.15	N	8.6	41	6.0	Y	1	Makino,J	
13.722	811649	6.8	M		8				0.030	B		8	5.5C	Y	1	Kato,T	
13.73	811650	7.8	B	SAO		6			0.20	N	5.6	44	5.5	Y	6	Nakamura,A	
13.75	811651	7.4	S	AAVSO	7	5	0.17		0.13	N	6.3	24	6.0	Y	1	Hayashi,A	
13.78	811652	6.7	S	58	18.4	6	0.3	45	0.05	B		7	6.0	Y	1	Kanai,K	
13.785	811653	8.0	M	58	6	5			0.065	B		20	5.4	Y	1	McBain,J	
13.79	811654	7.3	S						0.08	B		11	4.5	N	1	Momose,M	
13.79	811655	7.4	B	AAVSO					0.11	R						Churyumov,K	
13.81	811656	7.5	B	58	4	6			0.08	B		20	5.5	Y	1	Spell,J	
13.813	811657		S		6.0				0.26	N	6	55	5.0	Y	1	Hurst,G.M	
13.833	811658	5.9	S	58	17.1	5			0.05	B		10	5.0	Y	1	Hurst,G.M	W
13.84	811659	8.0	M	Y TAU	6.5	6			0.08	B		11	5.4	Y	1	Fleet,R.W	X
13.843	811660				11.4	5			0.08	B		15	5.0	Y	1	Hurst,G.M	
13.844	811661			58	5	3			0.114	N	8.7	50	6.0C	Y	1	Villa,M	
13.847	811662	6.8	M	58	10	4			0.05	B		12	5	Y	1	Tanti,T	Y
13.851	811663	7.5	S	58					0.030	B		8	6.0C	Y	1	Villa,M	
13.854	811664				6	5			0.127	SC	10	50	5.4	Y	4	Foulkes,M	Z
13.868	811665	7.1	B	58					0.050	B		7	5.5	N	1	Lunde,R	
13.875	811666				4	6			0.356	SC	10	100	5.4	Y	4	Foulkes,M	
13.878	811667	8.8	M	58	2.8	4	0.03	165	0.153	N	8.5	65		Y	2	Torres,E	a
13.88	811668	7.8	B	AAVSO					0.20	R						Churyumov,K	
13.882	811669				5	6			0.20	SC	10	111	6.0	Y	1	Bremseth,P.-J	
13.882	811670	7.0	S						0.05	B		10	6.0	Y	1	Bremseth,P.-J	
13.882	811671	7.7	B	58	3.9	6			0.15	N	6.6	33	5.4C	Y	1	Dal Santo,M	
13.889	811672	6.9	S	58	10	7			0.050	B		10	5.8C	Y	1	Kaila,K	b
13.89	811673	6.6	B	58	10.0	2	0.17	236	0.050	B		7	6.0	Y	2	Merlin,J.-C	
13.91	811674	7.4	S	58					0.050	B		7	5.0	Y	1	Spalding,G.H	
13.913	811675	7.5	S	58	2.9	6		60	0.25	N	6	60	5.6	Y	1	Gainsford,M.J	c
13.913	811676	7.0	M	58	6	4			0.09	M	11	56	5.5	Y	10	Westlund,M	
13.914	811677	7.0	M	58	9	7			0.04	B		12	6.0	Y	1	Henshaw,C	
13.916	811678	5.9	S	58	17	5			0.05	B		10	5.0	Y	1	Hurst,G.M	W
13.920	811679	6.6	B	58	0.3	6	0.01		0.28	SC	5	70	4.4	Y	1	Amoretti,M	
13.921	811680	6.7	S	58	8.7				0.08	B		11	5.6	Y	1	Gainsford,M.J	
13.938	811681	7.4	S	58	12	6			0.065	B		12	5.5	Y	4	Foulkes,M	
13.941	811682	6.1	S	58	9	5			0.089	R	5.5	18	5.0	N	1	Ventura,F	d
13.95	811683	7.3	S	58					0.20	R	12	40	6.0		1	Shanklin,J.D	
13.95	811684	6.3	S	58					0.08	B		10	6.0		1	Shanklin,J.D	
13.95	811685	5.7	S	DCS2B3A	22	5			0.046	R	4	8	6.3	Y	3	van de Weg,R.L.W	e
13.95	811686	6.1	B	DCS2B3A	22	5			0.046	R	4	8	6.3	Y	3	van de Weg,R.L.W	f
13.95	811687	6.0	S	DCS2B3A	17	6	0.25	107	0.060	B		12	6.3	Y	3	van de Weg,R.L.W	f
13.95	811688	6.4	B	DCS2B3A	17	6	0.25	107	0.060	B		12	6.3	Y	3	van de Weg,R.L.W	f
13.972	811689	6.8	S	58, 57	10	3			0.050	B		10	6.4	Y	2	Rogers,J.H	g
13.98	811690	7.2	B	58	7	6			0.08	B		15	4.5C	Y	1	Glowinski,C	W
13.983	811691	7.1	B	58					0.050	B		7	5.5	N	1	Lunde,R	

NOTE A Clear then cloud. (Observer gave limit as 10.5. Ed.)

NOTE B Still a distinct "nucleus" at 170x.

NOTE C Possible nucleus mag. 13.5.

NOTE D (Observer gave limit as 8.8. Ed.)

NOTE E Comet circular at all mag'n.

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NOTE F DC approximate.  
 NOTE G The observation was also made by 20x80 binoculars which showed a larger coma than the telescope but did not show nucleus changes. (Translated by IEW staff. Ed.)  
 NOTE H Naked eye! Urban area. DC approximate.  
 NOTE I In Taurus.  
 NOTE J Seeing average due to excess sky glow. Coma still circular with slight condensation.  
 NOTE K Modified Sidgwick method used.  
 NOTE L (Observer gave limit as 10. Ed.)  
 NOTE M Dark location 20 miles to west of city lights.  
 NOTE N Faintest star seen in instrument approximately 9.  
 NOTE O Faintest star seen in instrument approximately 12.  
 NOTE P Semi urban sky.  
 NOTE Q Tail not seen.  
 NOTE R PA = SW.  
 NOTE S (Observer indicated "Y" method. Ed.)  
 NOTE T Finder scope.  
 NOTE U Very large.  
 NOTE V Faintest star seen in instrument approximately 13.  
 NOTE W Coma diameter approximate.  
 NOTE X 11' coma, averted vision, between clouds.  
 NOTE Y Seeing good, transparency good. Clouds.  
 NOTE Z Very clear.  
 NOTE a (Observer gave limit as 11.0. Ed.)  
 NOTE b Bright auroras.  
 NOTE c Tail length = ? PA uncertain.  
 NOTE d Clouds and mist.  
 NOTE e Coma diameter is lower limit. Comet definitely visible to naked eye. Observations are showing differences caused by the magnification effect.  
 NOTE f Coma diameter is lower limit. Observations are showing differences caused by the magnification effect.  
 NOTE g Diffuse and still circular.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
13.634	830210	0.34	0.152	N	8	64	1		1	Tregaskis,T.B	A
13.863	830211	0.23	0.20	SC	10	111	46	6	3	Bremseth,P.-J	B
13.870	830212	0.75	0.26	N	6	55	165	5.0	1	Hurst,G.M	C
13.878	830213	0.20	0.356	SC	10	100	10	5.4	4	Foulkes,M	D
13.889	830214	0.7	0.153	N	8.5	65	40		2	Cifuentes,E	E
13.901	830215	0.37	0.406	N	5	68	20		2	Farroni,G	F
13.910	830216	1.6	0.090	M	11	56	10	5.5	10	Westlund,M	
13.964	830217	0.05	0.83	R	19.7	800	10	5.7	3	Soc. Astro. de France	G

NOTE A Almost stellar-like nucleus at limit. Limit approximately mag. 12.5.  
 NOTE B The central cond. was this time bigger, with a diam.: 17 arc sec. The outer coma very weak, but brighter in the inner. The southern part of the inner coma was a little brighter than the northern. The coma brightness was steadily decreasing from center and outwards.  
 NOTE C Elongated coma, nucleus magnitude 10 displaced PA 317 deg. Vertex distance 1.5'. Semi latus rectum P1, P2, estimated 2.9' each. Nucleus embedded in inner condensed area of diameter 0.4'. Outer halo extending to 6.0'. No tail detected.  
 NOTE D Comet disk spread over a larger area with this telescope. 4' disk observed with a fairly distinct edge. Beyond this, the coma was very diffuse and decreased rapidly in brightness. Central bright spot appeared elliptical in direction PA 135-315 deg. Brighter spot within this. Not much more observed than with the 0.127 m aperture telescope earlier this evening.  
 DC = 6.  
 NOTE E Shows a tail as a continuation of the coma, and other thinner (lines) less well seen; a pair appears on either side of the coma. The two tails are aligned on a N-S line, principally on PA 165. (Observer gave limit as 11.0. Translated by IEW staff. Ed.)  
 NOTE F Apparent dimension of the comet 5.6'.  
 NOTE G Jet at PA 85, 12" long; jet at PA 135, 10" long; streamer at PA 180, 42" long; streamer at PA 204, 45" long; streamer at PA 265, 37" long; jet at PA 317, 15" long. Drawing made by Alain Perez.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
13.003	850155	1.780	5	0.356	1.2 x 0.8	46.00	3M 1000	1000/	N	M	3/P	1	Mobberley,M	A
13.142	850156	0.050	4.0		39.6 x 27.0	10.00	Kodak Tri-X		N		112/P		Gianforte,J.S	B
13.473	850157	0.605	1.7	0.356	3.4 x 2.3	15.00	Kodak 2415		N	T	000/P	1	Levy,A	C
13.630	850158	2.500	10	0.254	0.8 x 0.6	15.00	Fuji	400/	N	X	3/S	1	Richardson,C	D
13.668	850159	0.268	2.6	0.102	7.7 x 5.1	5.00	Fuji	400/	N	X	4/S	1	Richardson,C	E
13.853	850160	0.803	2.1	0.350	2.6 x 1.7	7.00	Kodak 103a-F		N	M	12/P	1	Guarro,J	
13.862	850161	0.803	2.1	0.350	2.6 x 1.7	1.50	Kodak 103a-F		N	M	13/P	1	Guarro,J	
13.999	850162	0.135	2.8		15.2 x 10.2	20.00	Kodak 2415		Y	S	2/P		Izquierdo,J	
13.999	850163	1.780	5	0.356	1.2 x 0.8	36.00	3M 1000	1000/	N	M	4/P	1	Mobberley,M	A

NOTE A This color slide film was processed as a negative.  
 NOTE B (Observer's image identifier is 101-2. Observer listed emulsion speed as ASA 800. Ed.)  
 NOTE C Good transparency. Wind 0-10 miles per hour, S-W.  
 NOTE D Instrument is Meade Schmidt-Cassegrain.  
 NOTE E Instrument is Meade Schmidt camera.

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DATE: 14 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	
14.010	811692	6.3	B	58	15	7			0.206	N	6.0	60	5.5	Y	3	Gomez,A		
14.04	811693	5.6	S	58						EY			6.3		1	Shanklin,J.D		
14.045	811694	7.7	M	Y TAU	4.0	6			0.15	N	4	50	5.4	Y	1	Fleet,R.W	A	
14.057	811695	6.5	B	58	9				0.114	N	8.7	100		Y	1	Rodriguez C.,J.A	B	
14.06	811696	6.7	S	DCS 2B	12	6			0.100	B		14	6	Y	1	van Loo,F.R		
14.06	811697	8.0			4				0.034	B		9				Pereira,A	C	
14.07	811698	6.5	B	USNOC					0.050	B		10				Bortle,J.E		
14.07	811699	6.3	S	USNOC	14	5			0.050	B		10				Bortle,J.E		
14.081	811700	7.9	S	58					0.05	B		20	4.0	Y	1	da Silva,L.A.L		
14.083	811701	8	M	58	0.8	1			0.10	N	8.6	21	5.5	N	1	Gaucher,C		
14.109	811702	7.1	B	58	15				0.035	B		7	6.0	Y	1	Stephan,C	D	
14.146	811703	6.2	M	58	11.0	6			0.05	B		12	6.6	Y	1	Knight,S	E	
14.15	811704	5.8	S	DCS 2B	18	4			0.05	B		10	6	Y	8	Bouma,R.J	F	
14.170	811705	7.5	S	58	4.5	8			0.203	N	8	128	5.5	Y		Hannon,J		
14.177	811706	7.5	B	58	14	3			0.05	B		7	5.5	Y	5	Chmielewski,W		
14.21	811707	7.1	M	SC 2000					0.03	R		6	5.5	Y	1	Granslo,B.H		
14.21	811708				4.0	7			0.203	SC	10	80	5.5	Y	1	Granslo,B.H		
14.23	811709	6.1	S	58	12	4			0.040	B		8	6.0	Y	1	Keen,R	G	
14.23	811710	5.6	S	58	16	3			0.080	B		11	5.0	Y	4	Spratt,C.E	H	
14.29	811711	6.6	M	58			1	80	0.05	B		10	6	Y	3	Hale,A		
14.333	811712	6.5	M	58	5	4			0.050	B		7	5.4	Y	1	Robertson,T		
14.344	811713	6.7	M	58	5.8	4			0.15	N	8	68	5.4	Y	1	Robertson,T	I	
14.35	811714	6.0	S	AA	18	7			0.080	B		20				Green,D.W.E	B	
14.3861	811715	6.0	M	58	20	6			0.05	B		7	6.3	Y	2	Cook,A.J		
14.4056	811716	6.9	S	SAO	8	4			0.050	R		8	6.0	Y	1	Machholz,D		
14.406	811717	6.7	M	58	15	6	0.07	280	0.05	B		10	5.0	Y	1	Fabre,R	J	
14.412	811718	7.0	M		5	6			0.10	N	10	55	4.5C	Y	1	Kato,T		
14.417	811719	7.8	B	58		1			0.08	R		16	5	Y	1	Burch,J.Q		
14.47	811720	8.0	B	SAO	10	7			0.15	N	5.7	34	5.0	Y	7	Tanikawa,M	L	
14.510	811721	8.2	B	58	7.0	6			0.150	B		25	6.0	Y	1	Nakamura,T		
14.519	811722	7.5	B	58					0.05	B		7	5.0C	Y	1	Hasegawa,T		
14.563	811723	9.0	S	58	0.7	6			0.15	N	6	45	3.5C	Y	1	Yasuki,M		
14.59	811724	6.9	S	58	7.5	6			0.07	B		10	5.0	Y	1	Iwaki,Y		
14.594	811725	7.8	S	58	3.5	3			0.153	N	8.6	52	5.0	Y	1	Kato,T		
14.601	811726	7.3	M		3	7			0.050	R		7	5.0C	Y	1	Kato,T		
14.651	811727	7.9	M	58	1.4	6			0.12	N	6	36	4.0	Y	1	Kishi,A		
14.657	811728	7.0	M		5	7			0.10	N	10	55	5.0C	Y	1	Kato,T		
14.670	811729	6.7	M		8				0.030	B		8	5.0C	Y	1	Kato,T		
14.69	811730	7.6	S		10	5			0.08	B		11	4.0	N	1	Homose,M		
14.71	811731	7.2	S	AAVSO	6	5			0.08	R		8				Shirokov,A		
14.71	811732				10	3			0.03	B		8				Shirokov,A		
14.72	811733	8.1	B	58	11	7			0.15	N	8.6	41	6.0	Y	1	Hakino,K		
14.75	811734	6.5	S	57	20.8	5			0.05	B		7	6.0	Y	1	Kasai,J		
14.80	811735	6.3	B	58	15.0	3			0.050	B		7	6.5	Y	2	Merlin,J.-C		
14.81	811736	7.0	S	AAVSO	5	3			0.08	R		8				Shirokov,A		
14.812	811737	7.2	M	58					0.030	B		8	6.0C	Y	1	Villa,M		
14.813	811738	8.7	S	58	3	7			0.114	N	7.9	45	4.5C	N	1	Bernardis,A		
14.823	811739				58	4			0.114	N	8.7	110	6.0C	Y	1	Villa,M		
14.8250	811740	7.5	S	AAVSO		3			0.08	B		20	5.0	N	1	Sicoli,P		
14.830	811741	6.3	B	76438	7	3			0.08	B		11	5.8	Y	1	Eltri,M	M	
14.833	811742	6.5	B	58	7	4			0.10	B		14	5.0	Y	1	Hasubick,W	B	
14.833	811743	7.8	B	58	5	5			0.13	R	10	50		Y	1	Morrisby,A	N	
14.840	811744	6.2	S	57	12.0	5			0.08	B		15	6.3	Y	3	Haver,R	O	
14.840	811745	7.7	B	58	7	5			0.08	B		20	6	Y	2	Knain,E		
14.844	811746	7.2	S	58	10	6			0.050	B		10	5.5C	Y	1	Kaila,K	P	
14.860	811747	5.9	S	57	14.0	5			0.05	B		7	6.3	Y	3	Haver,R		
14.861	811748	7.9	M	Y TAU	5.0	6			0.15	N	4	50	5.6	Y	1	Fleet,R.W	Q	
14.865	811749	8.2	S	57		2			0.125	N	5.8	144	4.5C	Y	1	Riccabone,G	R	
14.87	811750	6.3	M	AA	11	3			0.106	R	5.7	24				Keszthelyi,S	S	
14.872	811751	7.8	B	AAVSO					0.11	R						Churyumov,K		
14.875	811752	7.7	M	Y TAU	6.0	6			0.08	B		11	5.7	Y	1	Fleet,R.W	T	
14.875	811753	6.4	S	58	14.5	4			0.050	B		7	5	Y	1	Linder,J	U	
14.875	811754	7.8	S	57	20	6			0.070	B		20	5.5	Y	1	Thomas,A	V	
14.882	811755	8.3	M	Y TAU	6.0	6			0.35	N	5.5	100	5.7	Y	1	Fleet,R.W	W	
14.885	811756	6.5	S	57		4			0.076	R	5.5	17	4.3C	N	1	Piccinini,M		
14.896	811757				5	3			0.08	B		10	6.0C	Y	3	Melandri,F		
14.896	811758	7.9	M	Y TAU	3.1	6			0.075	R	16	50	5.6	Y	1	Fleet,R.W	X	
14.896	811759	7.0	M	58	6	4			0.09	M	11	56	5.5	Y	10	Westlund,M		
14.906	811760	6.5	S	58		7			0.140	SN	3.6	19	6.4	Y	1	Meozzi,D	Y	
14.910	811761	8.3	M	Y TAU	5.0	6			0.22	N	8	90	5.6	Y	1	Fleet,R.W	Z	
14.91	811762	8.0	B	AAVSO					0.20	R						Churyumov,K		
14.915	811763	7.3	M	58	10	7			0.04	B		12	6.0	Y	1	Henshaw,C		
14.9166	811764	7.8	B	57	9	4			0.05	B		10	6.4C	Y	2	Franciosi,C	a	
14.917	811765					2			0.07	B		10	4.3	N	1	Deconinck,M		
14.92	811766	6.9	S	AAVSO	5	3			0.08	R		8				Shirokov,A		
14.92	811767	7.4	B	M	4.5				0.08	R		29				Nesterov,Yu		
14.924	811768	7.2	S	57	8	6			0.08	B		20	5.0C	Y	1	Milani,G	b	
14.927	811769	6.6	B	57	4				0.05	B		10	6.0	Y	1	Vanin,G		
14.930	811770	6.9	B	BU TAU					0.050	B		10	6.5	Y	1	Mao,A		
14.930	811771	7.3	B	57					0.08	B		20	5.0C	Y	1	Milani,G	b	
14.934	811772				4	5	0.08	95	0.20	SC	10	111	6.5	Y	1	Bremseth,P.-J		
14.934	811773	6.8	S						0.05	B		10	6.5	Y	1	Bremseth,P.-J		
14.938	811774	6.0	S		25	5			0.08	B		20	5.5	Y	3	Parisio,R		
14.947	811775	6.4	S	59	12	4			0.05	B		10	5	C	Y	1	Giuntoli,M	
14.951	811776	6.5	S	58	7.4	6			0.140	SN	3.6	16	5	Y	1	Linder,J	c	
14.96	811777	7.6			3				0.034	B		9			1	Pereira,A	d	
14.96	811778	7.6	B	AAVSO					0.11	R						Churyumov,K		
14.965	811779	7.3	B	SAO	5.0	6			0.125	R	6	35	5.4	Y	1	Guthier,O	e	
14.979	811780	7.5	B	57	3.2	4			0.15	N	6.6	33	5.4	Y	1	Del Santo,M	f	

NOTE A 6.5' coma, averted vision.

NOTE B Coma diameter approximate.

NOTE C (Observer gave limit as 8.8. Ed.)

NOTE D Tail first seen in 7x35 binoculars approx. 10'. In 36.2 cm f/5 Newtonian, at 145x tail is fan shaped, dim, diffuse. At 302x streaks appear where there is tail, then open space and stars, then another streak, etc. Also at 302x, nucleus has many pinpoint "grains" along with main stellar core. Nucleus definitely getting brighter. Tail PA 130-170.

NOTE E First naked eye sighting.

NOTE F (Observer also used chart DCS 3a. Ed.)

NOTE G Modified Sidgwick method used.

NOTE H DC approximate.

NOTE I Filar micrometer used for coma diameter.

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NOTE J (PA value appears to be measured incorrectly. Ed.)  
 NOTE K Inner city lights.  
 NOTE L Core mag. (observer's symbol believed to mean "approximately equal to", Ed.) 11.5.  
 NOTE M SAO 76438 used for magnitude comparison.  
 NOTE N Central condens. of approximately mag. 11.5.  
 NOTE O Perhaps fan-shaped form. Nucleus of mag. 9. (Translated by IHW staff. Ed.)  
 NOTE P Aurora in north.  
 NOTE Q 9"x7" coma, averted vision.  
 NOTE R Intense city lights.  
 NOTE S + 7x50 B and 9 mag. nucleus. [sic]  
 NOTE T 11" coma, averted vision.  
 NOTE U Some fog.  
 NOTE V Coma elongated. (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE W 9"x8" coma, averted vision.  
 NOTE X 8.0" coma, averted vision.  
 NOTE Y Ellipsoidal coma.  
 NOTE Z 8.0" coma, averted vision.  
 NOTE a 10x50 Zeiss Jena Decarem. [sic] Coma diameter approximate.  
 NOTE b City lights.  
 NOTE c Coma elliptical.  
 NOTE d (Observer gave limit as 8.6. Ed.)  
 NOTE e Halo ca. 10 arc min.  
 NOTE f Excellent sky.

## SUB-NETWORK: DRAWING

Date(UT)	ACON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
14.010	830218		0.206	N	6.0	60			3	Gomez,A	A
14.057	830219		0.114	N	8.7	100			1	Rodriguez C.,J.A	B
14.115	830220		0.203	SC	10	81			1	Lohvinenko,T.W	C
14.122	830221		0.203	SC	10	169			1	Lohvinenko,T.W	D
14.131	830222		0.203	SC	10	81			1	Lohvinenko,T.W	E
14.257	830223		0.200	SC	10	167,500		29 6.1	1	Ashley,J.B	F
14.386	830224	3	0.050	B	7				2	Cook,A.J	G
14.48	830225	1.37	0.15	N	5.7	34, 92		14 5.0	2	Tanikawa,M	H
14.845	830226	0.23	0.15	N	8	56, 40		4 5.0	1	Sardini,D	
14.865	830227	1.2	0.080	B		20		10 6	1	Knain,E	I
14.868	830228	0.18	0.40	N	5	81,254		20 6.5	2	Merlin,J.-C	J
14.870	830229	0.13	0.125	N	5.8	28, 40, 80		24 4.5	1	Riccabone,G	K
14.873	830230	1.02	0.106	R	5.7	24		9 5.7	1	Keszthelyi,S	
14.889	830231	1.6	0.090	M	11	56		20 5.5	10	Westlund,M	
14.896	830232	2.01	0.080	B		11		60	1	Verdenet,M	L
14.911	830233	1	0.12	R	15	53, 74,153		15 6.2	2	Franciosi,C	M
14.929	830234	0.17	0.36	SC	11	156		5 4	1	Korth,S	N
14.943	830235	0.23	0.20	SC	10	111		25 6.5	3	Bremseth,P.-J	O
14.987	830236	0.27	0.400	N	5	40		22 5.5	2	Sarocchi,D	

NOTE A Very big, high DC. Star within the bluish coma. (Duration not indicated. Time of observation is assumed to be roughly mid time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE B (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE C Comet Halley is seen here with a definite nucleus and has an integrated magnitude of 6.9 (check star: HR 72, HR 69). I have observed the comet's coma with a mm reticle and have found it to be 93" in diameter. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE D Slight spike has been detected at PA 270 coming out of the comet and ending at PA 325.5. The spike is clearly visible and is most likely a part of a tail. By the way it looks I would call it the dust tail, but this is hard to say at this time. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE E (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE F Reticle/PA eyepiece yielded 167x. 500x used in inspection for details. No specific structure could be seen. However, a very slight central condensation was apparent at 167x. The degree of condensation was less apparent when observing at 500x. (Duration not indicated. Time of observation is start time. Ed.)  
 NOTE G Core (observer's symbol believed to mean "approximately equal to", Ed.) 11.5.  
 NOTE I Star seen through coma at PA 90. Coma circular, steadily increasing brightness toward center.  
 NOTE J Jet at PA 175, then curved toward PA 180/185; jet at PA 199, then curved toward PA 180. Tail at PA 205, similar feature than Nov. 10's tail. [sic] Parabolic hood about sunward. Darker westward.  
 NOTE K Magnification of 60 and 144 also used. Two drawings included. Intense city lights interfered with the observation. (Translated by IHW staff. Ed.)  
 NOTE L (Additional drawing supplied made using 0.356 m SC f/11, 200x. Ed.)  
 NOTE M Pseudo nucleus diameter 13.8"-20.4", VM = 10; coma diameter 5", VM about 7.8; 3' tail at PA 125, VM about 12.2; 3' tail at PA 145, VM about 12.2. [sic] (Two drawings included in this listing. Ed.)  
 NOTE N City lights interfered with the observation.  
 NOTE O Diffuse tail? at PA 95. The central condensation was this time smaller, about 6 arc sec. diameter. The outer coma was very weak. A diffuse glow from the coma pointing in PA 95 with a thinner "streak" in the middle, was observed, 4-5 arc min. long. The coma was a little bit brighter in the southern part.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
14.058	850164	0.200	4.5		10.3 x 6.9	2.00	3M	1000/	N	O	4/T	1	Martin,D	
14.061	850165	0.200	4.5		10.3 x 6.9	2.83	3M	1000/	N	O	5/T	1	Martin,D	
14.067	850166	0.200	4.5		10.3 x 6.9	4.00	3M	1000/	N	O	6/T	1	Martin,D	
14.073	850167	0.200	4.5		10.3 x 6.9	4.00	3M	1000/	N	O	7/T	1	Martin,D	
14.077	850168	0.200	4.5		10.3 x 6.9	3.00	3M	1000/	N	O	8/T	1	Martin,D	
14.181	850169	0.205	3.8		10.0 x 6.7	5.00	Kodak VR 200	200/24	N	T	11/P	1	Cunningham,J	
14.188	850170	0.205	3.8		10.0 x 6.7	10.00	Kodak VR 200	200/24	N	T	12/P	1	Cunningham,J	
14.199	850171	0.305	2.5	0.122	6.8 x 4.5	4.00	Kodak Tri-X	400/	N	S	98/P	1	Minton,R.B	A
14.332	850172	0.180	2.8		11.4 x 7.6	5.00	3M 1000	1000/	N	S	1/P	2	Cook,A.J	B
14.350	850173	0.180	2.8		11.4 x 7.6	10.00	3M 1000	1000/	N	S	2/P	2	Cook,A.J	
14.362	850174	0.305	1.5	0.203	6.8 x 4.5	2.50	Kodak 2415		Y	S	2/P	1	Diliszian,R	
14.708	850175	1.760	5.8	0.303	1.2 x 0.8	31.00	Kodak 2415		Y	S	3/P	1	Nijima,T	C
14.866	850176	1.820	5.2	0.350	1.1 x 0.8	15.00	Kodak 103a-O		N	O	1/C	2	Cinatti,A	D
14.897	850177	1.820	5.2	0.350	1.1 x 0.8	15.00	Kodak 103a-O		N	O	2/C	2	Cinatti,A	E
14.907	850178	1.690	5.6	0.305	1.2 x 0.8	5.00	Agfachrome	1000/31	N	S	1/S	1	Korth,S	F
14.918	850179	1.820	5.2	0.350	1.1 x 0.8	15.00	Kodak 103a-O		N	O	3/C	2	Cinatti,A	E
14.954	850180	2.400	4	0.600	0.9 x 0.6	15.03	Kodak 103a-O		N	O	001/T	1	Belli,V	
14.979	850181	0.803	2.1	0.350	2.6 x 1.7	6.33	Kodak 103a-F		N	M	14/P	1	Guarro,J	
14.997	850182	0.100	2.9		20.4 x13.7	20.00	Kodak Tri-X	400/	N	T	133/P	1	Hernschler,W	G

NOTE A (Print submitted by observer is a composite of two 2 min. exposures separated by 6 min. Ed.) Instrument is Aero-Ektar aerial camera lens.  
 NOTE B Bi-tonal background sky color is due to a defect on the original slide's emulsion.  
 NOTE C (Observer's image identifier is 851114-6. Ed.) Large format (70 mm) film used. City lights interfered with the observation.  
 NOTE D Haze. Guided by G. Mengoli.  
 NOTE E Haze.  
 NOTE F City lights interfered with the observation. (Observer indicated both type O and type X guiding. Ed.)

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NOTE G Lumicon Deep Sky filter used. (Observer's image identifier is followed by suffix "/85".) City lights interfered with the observation.

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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
15.03	811781	7.5	S	57	14	3			0.05	B		10	5.5	Y	1	Zanut,S	
15.031	811782	6.7	S	57	16.5				0.035	B		7	6.3	Y	3	Morrison,W	
15.080	811783	5.8	B	57	15	6		235	0.203	R	13	85	5.2	Y	1	Fox,J.H	A
15.08	811784	6.6	S	DCS 2B	28	6			0.050	B		10	6	Y	1	van Loo,F.R	
15.083	811785	7.9	M	57	0.8	1			0.10	N	8.6	21	5.7	N	1	Gaucher,C	
15.114	811786	7.3	S	SAO					0.31	N	5	62				Giampaolo,G	
15.13	811787	5.5	S	DCS 3A	24	5			0.046	R	4	8	6.2	Y	1	van de Weg,R.L.W	B
15.13	811788	6.0	B	DCS 3A	24	5			0.046	R	4	8	6.2	Y	1	van de Weg,R.L.W	B
15.15	811789	6.3	M	57	14	6			0.080	B		20	5.5	Y	6	Morris,C.S	
15.15	811790	6.6	B	57					0.080	B		20	5.5	Y	6	Morris,C.S	
15.167	811791	7.5	S	57	9	1			0.080	B		11	4.3C	N	1	Bailey,G	C
15.17	811792	6.1	S	SAO	15	5			0.050	B		10				Bortle,J.E	
15.1701	811793	7.1	B	57	10	3			0.080	B		11	5.3	Y	1	Broglioni,A	D
15.219	811794	7.9	S	57	23	2			0.203	SC	10	80	4.5C	Y	1	Gronck,J.D	E
15.2278	811795	6.6	S	SAO	12	8			0.254	N	3.8	32	6.2		1	Machholz,D	F
15.33	811796	6.6	M	57					0.05	B		10	5	Y	2	Hale,A	G
15.337	811797	6.9	M	57	5	4			0.050	B		7	5.4	Y	1	Robertson,T	
15.344	811798	6.5	M	57	15	6	0.08	280	0.05	B		10	5.0	Y	1	Fabre,R	H
15.344	811799			57	5.3	5			0.15	N	8	68	5.4	Y	1	Robertson,T	I
15.43	811800	6.7	S	57	5				0.045	R	6	13		Y		Jones,A	J
15.44	811801	5.6	S	AA	18	4			0.080	B		20				Green,D.W.E	X
15.45	811802	6.6	S	57					0.08	B		11		Y		Jones,A	
15.465	811803	7.3	M		5	6			0.10	N	10	55	4.5C	Y	1	Kato,T	
15.47	811804	8.9	B	SAO	10	7			0.30	N	7.0	52	7.0	Y	1	Tanikawa,M	L
15.476	811805	7.5	M	57	5	6			0.035	B		7	5	Y	1	Watanabe,H	
15.48	811806	7.5	B		15	8			0.23		4.4	40	6.0	Y	1	Washi,I	M
15.49	811807	7.8	B		7	5			0.15	N	8	43	5.0	N	1	Uda,K	
15.50	811808	7.5	B	57	3	7			0.20	N	5	36		Y	1	Curtis,D	N
15.52	811809	7.5			20	5			0.12	B		20	6.0	Y	1	Washi,S	O
15.521	811810	7.5	B	57					0.05	B		7	5.0C	Y	1	Hasegawa,T	
15.525	811811	7.1	M	57	12	7			0.08	B		11	5.5	Y	1	Mitsuma,S	P
15.53	811812	7.8	S	57	10	5			0.15	N	5.3	32	5.5	Y	1	Oka,A	
15.53	811813	6.7	S	57	8	7			0.07	B		10	5.5	Y	1	Yasuki,M	
15.549	811814	7.0	M						0.030	B		8	4.5C	Y	1	Kato,T	
15.55	811815	5.7	S	57	15	7			0.03	R		8	6.4	Y	1	Lovejoy,T	
15.583	811816	6.9	S	57		2			0.050	B		10		Y	1	Tregaskis,T.B	Q
15.60	811817	7.2	S		9	5			0.08	B		11	3.5	N	1	Monose,M	
15.61	811818	6.6	S	57		7			0.045	R	6	13		Y		Jones,A	R
15.61	811819								0.317	N	5	86		Y		Jones,A	
15.615	811820	7.6	B	58, 57					0.07	B		10	5.5	Y	1	Dake,M	
15.625	811821	6.5	B						0.035	B		7		Y	2	Okada,M	
15.64	811822	7.9	B	SAO	8	6			0.20	N	5.6	44	6.5	Y	1	Nakamura,A	
15.64	811823	7.6	M	SAO	10	6			0.06	R	12	22		Y		Nakamura,A	
15.72	811824	7.5	S	AAVSO	5	5	0.08		0.13	N	6.3	24	6.0	Y	1	Hayashi,A	
15.726	811825	8.0	S	58	2.5	3			0.153	N	8.6	33	4.5	Y	1	Iwaki,Y	
15.778	811826	7.0	B	57	6	6			0.08	B		20	5.5M	Y	2	Knain,E	S
15.778	811827	7.7	S	57	3.0	5			0.080	B		20	4.4	Y	2	Storey,D	
15.78	811828	7.1	B	AAVSO					0.11	R						Churyumov,K	
15.798	811829	6.8	S	57		3			0.08	B		11	4	C	Y	Gainsford,M.J	T
15.802	811830	7.5	M	57	8	5			0.065	B		20	6.2	Y	1	McBain,J	
15.804	811831	6.3	B	57		5			0.06	R		25	5	Y	1	Ward,A	U
15.808	811832		S	57		7			0.25	N		60	4	C	Y	Gainsford,M.J	T
15.81	811833	7.6	B	AAVSO					0.20	R						Churyumov,K	
15.828	811834	7.3	B	57		4			0.050	B		10	5.5	Y	1	Lehmann,T	
15.830	811835				5.1	7			0.26	N	6	55	5.0	Y	1	Eurst,G.M	
15.838	811836	5.9	S	58	18	5			0.05	B		10	5.0	Y	1	Eurst,G.M	
15.840	811837	8.8	M	57	3.0	4	0.03	170	0.153	N	8.5	65		Y	2	Torres,E	V
15.840	811838	7.6	B	57	4	4			0.090	N	7.2	26	5.0	Y	1	Vohla,F	
15.842	811839				18	5			0.08	B		15	5.0	Y	1	Eurst,G.M	
15.844	811840	6.4	B	57	11		7		0.063	B		9	5.5	Y	3	Kammerer,A	
15.85	811841	7.0	B	AAVSO					0.11	R						Churyumov,K	
15.851	811842	8.1	M	57	2	6			0.210	N	5.0	43	5.5C	Y	1	Taylor,M.D	
15.856	811843	5.9	S	58	18	5			0.05	B		10	5.0	Y	1	Eurst,G.M	
15.86	811844	6.6	B	57	10.8	6			0.05	B		10	6.0	Y		Bottger,B	
15.868	811845	8.1	M	57	2	6			0.076	R	12	37	5.4C	Y	1	Taylor,M.D	
15.8750	811846	7.3	S	AAVSO		4			0.08	B		20	5.5	Y	1	Sicoli,P	
15.88	811847	7.1	B	M	13	7			0.08	R	10	28				Rudakov,G	
15.88	811848	7.2	S	57					0.050	B		7	5.5	Y	1	Spalding,C.H	W
15.894	811849		M	58	9	7			0.04	B		12	6.3	Y	1	Henshaw,C	
15.896	811850	6.7	B	BU TAU					0.050	B		10	6.3	Y	1	Mao,A	
15.897	811851	7.2							0.08	B		11	6.0	Y	1	Eltri,M	X
15.903	811852	6.8	B	57	5.5	5			0.050	B		7	5.5	N	1	Lunde,R	
15.906	811853	6.5	S	57	7.5	3			0.08	B		15	3.5	Y	1	Dietrich,M	Y
15.910	811854	7.6	B	57	5	6			0.080	R	6.3	50		Y	1	Pfitzer,E	Z
15.92	811855	7.1	B	M	14	7			0.08	R	10	28				Rudakov,G	
15.924	811856	7.3	B	57	3.1	6			0.15	N	6.6	33	5	C	Y	Dal Santo,M	
15.927	811857	6.4	S	57	4	6			0.05	B		10	5.5	Y	1	Vanin,G	
15.93	811858	6.6	M	AA	10	4			0.106	R	5.7	24				Keszthelyi,S	a
15.937	811859	7.4	S	57		7			0.20	N	4	50	4.7C	Y	1	Milani,G	b
15.94	811860	7.7			3				0.034	B		9			1	Pereira,A	c
15.944	811861	8.2	M	Y TAU	4.0	3.5	6		0.35	N	5.5	100	5.7	Y	1	Fleet,R.W	d
15.95	811862	5.9	S	57					0.05	B		7	4.7		1	Shanklin,J.D	
15.96	811863	7.2	B	M	14.5	7			0.08	R	10	28				Rudakov,G	
15.962	811864	7.7	M	Y TAU	5.0	6			0.08	B		11	5.7	Y	1	Fleet,R.W	e
15.965	811865	7.3	B	57					0.05	B		7	5	Y	1	Dal Santo,M	
15.969	811866	7.8	M	Y TAU	5.0	6			0.15	N	4	50	5.6	Y	1	Fleet,R.W	f
15.969	811867	7.5	M	57		6			0.089	R	13.7	32		C	Y	Linger,S	g
15.979	811868	7.1	B	57	3.6	7		60	0.25	N	6	60	5.2	Y	1	Gainsford,M.J	h
15.979	811869	7.1	S	57, 58	8.5	6			0.065	B		12	5.0	Y	1	Foulkes,M	U
15.980	811870	7.6	B		4	5			0.130	N	8	40	5.0	Y	1	Lieder,F	
15.986	811871	7.7	M	Y TAU	6.5	6			0.075	R	16	50	5.6	Y	1	Fleet,R.W	i
15.987	811872	6.7	B	57	7				0.08	B		11	5.2	Y	1	Gainsford,M.J	
15.993	811873				4	5			0.090	M	11	40	5.0	Y	1	Foulkes,M	U

NOTE A Fan coma, PA approximate. SAO 076339 comparison star.

NOTE B Comet definitely visible to naked eye.

NOTE C First view! Very faint.

NOTE D I perceive detail. (Roughly translated by IHW staff. Ed.)

NOTE E Exc. see.

NOTE F Inner (3' dia.) coma mag. = 7.8.

NOTE G Observed through thin cirrus.



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NOTE H (PA value appears to be measured incorrectly. Ed.)  
 NOTE I Filar micrometer used for coma diameter.  
 NOTE J Clear. Moon 2d.  
 NOTE K Coma diameter approximate.  
 NOTE L Core mag. (observer's symbol believed to mean "approximately equal to", Ed.) 12.  
 NOTE M Instrument is Wright-Schmidt.  
 NOTE N Semi urban sky.  
 NOTE O (Observer indicated "Y" method. Ed.)  
 NOTE P Tail not seen.  
 NOTE Q Faintest star seen in instrument approximately 9.  
 NOTE R No moon.  
 NOTE S Moon glow northern horizon.  
 NOTE T Clouds.  
 NOTE U Some cloud.  
 NOTE V (Observer gave limit as 11.0. Ed.)  
 NOTE W Perhaps brighter.  
 NOTE X SAO 76308 and SAO 76275 used for magnitude comparison.  
 NOTE Y Misty. (Translated by IHW staff. Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE Z Haze. (Observer gave limit as 10.5. Ed.)  
 NOTE a + 7x50 B and 9 mag. nucleus. [sic]  
 NOTE b City lights.  
 NOTE c (Observer gave limit as 8.6. Ed.)  
 NOTE d 7.0'x5.5' coma, averted vision.  
 NOTE e 11' coma, averted vision.  
 NOTE f 9' coma, averted vision.  
 NOTE g Very clear. (Observer gave limit as 10.5. Ed.)  
 NOTE h Tail length = 7. PA uncertain.  
 NOTE i 12' coma, averted vision.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ina	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
15.078	830237	0.6	0.203	R	13	85	6	5.2	1	Fox, J.H	A
15.150	830238	0.203	SC	10	81				1	Lohvnenko, T.W	B
15.48	830239	1.11	0.30	N	7	52	14	7.0	1	Tanikawa, M	C
15.769	830240	1.2	0.080	B		20	15	5.5	1	Knain, E	D
15.830	830241	0.15	0.298	N	5	65, 179	10	6.0	1	Stott, D	E
15.832	830242	0.21	0.203	SC	10	80, 165	19	5.2	1	Foulkes, M	F
15.845	830243	0.7	0.153	N	8.5	65, 52	35		2	Cifuentes, E	G
15.856	830244	0.53	0.26	N	6	55, 145	85	5.0	1	Hurst, G.M	H
15.857	830245	0.12	0.125	N	5.8	28, 40, 60	22	4.0	1	Riccabone, G	I
15.918	830246	0.44	0.406	N	5	68	15		2	Farroni, G	J
15.929	830247	1.05	0.106	R	5.7	24, 38, 48	16	5.5	1	Keszthelyi, S	K
15.93	830248	0.23	0.15	N	8	56, 40	6	5.0	1	Sardini, D	L
15.958	830249	0.64	0.210	N	5.7	30, 66			1	Temprano, J	

NOTE A NE "bow wave" definitely visible. Star visible through coma, W of nucleus.  
 NOTE B The nuclear magnitude of this comet is clearly 9.2 (check star: AGK 3+25 deg. 0220) however the integrated magnitude I am not sure of since it is hazy out and therefore I don't know how diffuse this object really is, my guess would be 6.9. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE C Core (observer's symbol believed to mean "approximately equal to", Ed.) 12.  
 NOTE D Star at PA 90. Coma very slightly elongated toward PA 300.  
 NOTE E Close approach to mag. 12 star. At 1952 the nucleus condensation and the star merged. The drawing shows the appearance at 1953. No tail visible but coma extended to the NNW. PA 316 deg.  
 NOTE F DC = 6. Disk circular. Bright spot at centre. Even brighter spot suspected within this.  
 NOTE G The tail has characteristics similar to those described on 13/11/85 except on the south side, where one branch (on the east side) is more intense than the other. (Observer gave limit as 11. Translated by IHW staff. Ed.)  
 NOTE H Magnitude 9-10 almost star-like point apparently at centre of coma, situated within inner condensed area of 1.5' diameter. Overall coma diameter 5.1'. No tail seen. Star involved 1' from nuclear region in PA 66 deg.  
 NOTE I Wedge-shaped light light zone at PA 82. The drawing was interrupted at 2044 UT owing to sudden clouding of the sky. Since I was unable to make a direct measurement of the apparent size I am reporting a scale as deduced by ratioing the drawing to an AAVSO chart, yielding dimensions which are only indicative. Magnifications of 60 and 144 also used. Two drawings. Intense city lights interfered with the observation. (Translated by IHW staff. Ed.)  
 NOTE J Apparent dimensions of the comet 6.8'x5.9'.  
 NOTE K Magnifications of 60x and 150x also used. Coma "bumps" at PA 100 and at PA 320. (Translated by IHW staff. Ed.)  
 NOTE L Without tail. High DC (between nucleus and outer parts of the coma). (Duration not indicated. Time of observation is assumed to be roughly mid time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
15.072	850183	0.200	3.5		10.3 x 6.9	2.50	Kodak 2415		Y	T	0/C	2	Woidyla, B	
15.076	850184	0.200	3.5		10.3 x 6.9	2.00	Kodak 2415		Y	T	1/C	2	Woidyla, B	
15.081	850185	0.200	3.5		10.3 x 6.9	2.00	Kodak 2415		Y	T	2/C	2	Woidyla, B	
15.082	850186	0.200	3.5		10.3 x 6.9	3.00	Kodak 2415		Y	T	3/C	2	Woidyla, B	
15.086	850187	0.200	3.5		10.3 x 6.9	1.25	Kodak 2415		Y	T	4/C	2	Woidyla, B	
15.088	850188	0.200	3.5		10.3 x 6.9	2.50	Kodak 2415		Y	T	5/C	2	Woidyla, B	
15.091	850189	0.200	3.5		10.3 x 6.9	3.50	Kodak 2415		Y	T	6/C	2	Woidyla, B	
15.106	850190	0.050	4.0		39.6 x 27.0	10.00	Kodak Tri-X		N		115/P		Gianforte, J.S	A
15.118	850191	0.400	7		5.2 x 3.4	2.50	Kodak 2415	125/	Y	T	9/C	2	Woidyla, B	
15.127	850192	0.050	1.8		39.6 x 27.0	1.00	Kodak 2415	125/	Y	T	10/C	2	Woidyla, B	
15.129	850193	0.050	1.8		39.6 x 27.0	1.00	Kodak 2415	125/	Y	T	11/C	2	Woidyla, B	
15.215	850194	0.200	3.5		10.3 x 6.9	2.00	Kodak 2415	125/	Y	T	14/C	2	Woidyla, B	
15.216	850195	0.200	3.5		10.3 x 6.9	1.00	Kodak 2415	125/	Y	T	15/C	2	Woidyla, B	B
15.222	850196	2.000	10	0.200	1.0 x 0.7	1.00	Kodacolor	1000/	N	S	22/N	1	Gronek, J.D	C
15.274	850197	0.135	2.8		15.2 x 10.2	4.00	Kodak Tri-X		N	C	610/N	1	Lazerson, H	D
15.294	850198	1.524	6	0.254	1.4 x 0.9	20.00	Kodak 2415		Y	X	85/P	1	Snyder, L.F	E
15.302	850199	2.306	5	0.45	0.9 x 0.6	30.00	Kodak Tri-X		N	M	8/S	1	Webb, R	F
15.352	850200	1.524	6	0.254	1.4 x 0.9	60.00	Kodak 2415		Y	X	86/P	1	Snyder, L.F	
15.904	850201	0.600	5.6		3.4 x 2.3	13.00	Kodak 103a-O		N	S	4/P	1	Dragesco, J	
15.922	850202	1.270	5	0.254	1.6 x 1.1	10.50	Kodak 2415		Y	O	26/P	1	Johnstone, G.F	
15.934	850203	0.135	3.2		15.2 x 10.2	8.00	Agfa-Pan Pro	400/27	N	M	14/C	1	Trixler, F	
15.941	850204	0.200	2.8		10.3 x 6.9	3.00	Kodak 2415		Y		10/P	1	Conrad, R	G
15.944	850205	0.950	4.7	0.20	2.2 x 1.4	11.00	Kodak 2415		Y		3/P	1	Conrad, R	G
15.964	850206	0.700	5	0.14	2.9 x 2.0	3.00	Kodak IIA-F		N	M	29/P	1	Ridley, E.B	H
15.969	850207	0.600	1.7	0.350	3.4 x 2.3	8.00	Ilford HP5	400/	N	O	1/T	1	Molinari, L	I
15.997	850208	0.225	1.7	0.140	9.1 x 6.1	6.00	Kodak 2415		Y	O	03/P	7	Linder, J	J

NOTE A (Observer's image identifier is 101-5. Ed.) (Observer listed emulsion speed as ASA 800. Ed.)  
 NOTE B A car came by with its lights on.  
 NOTE C (Observer's image identifier is followed by suffix A. Ed.)  
 NOTE D (Observer's image identifier is 16-10. Ed.) "Push" processed to 800 ASA.  
 NOTE E Lines through negative are aircraft.  
 NOTE F Inner coma and starlike central condensation visible on all original negatives. Film push processed slightly. (Observer indicated C-type guiding as well as M. Ed.)

DATE: 15 NOV 1985

DATE: 15 NOV 1985

NOTE G City lights interfered with the observation, Vienna, from room!

NOTE H (Observer's image identifier is preceded by prefix ZA. Ed.) Instrument uses photographic plates.

NOTE I Instrument is Celestron Schmidt camera. 120 size film used.

NOTE J Instrument is Schmidt camera.

DATE: 16 NOV 1985

DATE: 16 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
16.000	811874	5.8		57	15	12	7		0.081	B		22	6	Y	2	Sternwarte Hof	
16.01	811875	5.1	S	57						EY			6.3		1	Shanklin,J.D	
16.01	811876	7.5	B	M					0.15	N	5	25			1	Korneev,V	
16.028	811877	7.4	B	57			5		0.035	B		7	4.0C	Y	1	Pilch,R	
16.04	811878	6.9	S	57					0.20	R	12	40	6.3		1	Shanklin,J.D	
16.04	811879	7.5	B	M				0.3	0.15	N	5	25			1	Korneev,V	A
16.042	811880	6.6	S	57	7		4		0.050	B		10	6.0	Y	2	Rogers,J.H	B
16.049	811881	6.0	S	57	20		6		0.140	SN	3.6	16	6.0	Y	7	Linder,J	C
16.06	811882	6.3	B	57	16		6		0.140	SN		16	6.0	Y	3	Wagner,G	
16.097	811883	7.9	B	57	20		0		0.05	B		7	4.3			Lairret,R	
16.099	811884								0.035	B		7	5.4	Y	1	Stephan,C	D
16.135	811885	7.4	B	57	14		3		0.05	B		7	5.0C	Y	6	Chmielewski,W	
16.141	811886	7.6	B	57	1.5		2		0.06	R	12	56	5.5	Y	1	Onofre D.,D	
16.15	811887	6.1	S	57	15		4		0.040	B		8	6.5	Y	1	Keen,R	E
16.177	811888	6.9	S	57	8		1		0.080	B		11	4.3C	Y	1	Bailey,G	
16.20	811889	5.7	S	AA	20		3		0.050	B		7				Green,D.W.E	F
16.229	811890	7.3	B	57			6		0.200	SC	10	169	4	Y	1	Gellinas,M.A	
16.240	811891		B				2		0.08	R	6.3	16	3	Y	1	Burch,J.Q	G
16.257	811892			57	6.7		5		0.15	N	8	68	5.4	Y	1	Robertson,T	H
16.260	811893	6.3	M	57	18		7	0.10	0.05	B		10	6.0	Y	2	Fabre,R	I
16.292	811894	7.2	S	57	25		4		0.08	R	6	20	4	Y	1	Bracken,R	J
16.33	811895	5.9	M	57	14		7	0.28	0.080	B		20	6.0	Y	14	Morris,C.S	
16.333	811896	7.6	S	57	6		6		0.20	SC	6	30	6.0	Y	1	Saxon,V.P	
16.34	811897	6.0	M	57	6.4		7		0.256	N	4.5	45	6.0	Y	14	Morris,C.S	
16.35	811898	7.6	M	57	4.8				0.256	N	4.5	156	6.0	Y	12	Morris,C.S	
16.365	811899	6.8	B	57			2		0.050	B		10	5.0C	Y	1	Stapleton,J	K
16.368	811900			57	25		6		0.279	SC	10	166	5.5	Y	1	Kemble,L.J	L
16.415	811901	9.0	S	57	2.7		5		0.15	N	8	50	6.5	Y	1	Donth,D	
16.426	811902	7.0	M		6		5		0.10	N	10	55	4.0C	Y	1	Kato,T	M
16.429	811903	7.5	B	57			5		0.10	R	16	65	6.0	Y	2	Bembrick,C	
16.462	811904			57	5		1		0.035	B		7	4	Y	1	Watanabe,H	
16.465	811905	7.5	M	57	5		1		0.035	B		7	4	Y	1	Watanabe,A	
16.48	811906	6.7	S	57	10		7		0.07	B		10	4.5	Y	1	Yasuki,M	
16.49	811907	5.6	S	57	16		7		0.08	B		15	6.0	Y	1	Lovejoy,T	
16.49	811908	7.4	B	M	3.7		6		0.21	N		80				Knyazyuk,N	
16.51	811909	7.9	B		7		5		0.15	N	8	43	4.0	N	1	Uda,K	
16.58	811910	6.9	M	57	11		6		0.08	B		11	5	Y	1	Mitsuma,S	N
16.59	811911	7.2	S	57	15		6		0.15	N	5.3	32	6.0	Y	2	Oka,A	
16.63	811912	7.5	B	57	11		7		0.16	N	6.2	31	6.0	Y	1	Makino,J	
16.65	811913	7.5	S	57	9		7		0.41	N	4.2	86	6.4	Y	4	Clark,M.L	
16.66	811914	7.1	S	57	10		7		0.125	R	5	31	6.6	Y	4	Clark,M.L	O
16.66	811915	6.6	S	57	12		5		0.03	R		6	6.4	Y	4	Clark,M.L	
16.70	811916	6.8	B	E	10		5		0.05	B		7				Zagaynov,V.A	
16.75	811917	6.8	B	E	12		6		0.08	R	10	28				Gostev,A	
16.76	811918	6.7	B	E					0.05	B		7				Zagaynov,V.A	
16.78	811919	7.4	B	M	17		0		0.04	R	6	18				Drapun,I	
16.78	811920	7.4	B	M	17				0.04	R	6	18				Drapun,A	
16.79	811921	6.9	B	E	12		6		0.08	R	10	28				Gostev,A	
16.795	811922	8.6	M	57	3.5		4	0.17	0.153	N	8.5	65		Y	1	Torres,E	P
16.80	811923	6.4	B	AAVSO	5				0.06	R		30				Golubev,V	
16.80	811924	6.8	B	AAVSO					0.11	R						Churyumov,K	
16.801	811925	7.5	M	CZ					0.10	B		25	5 C	Y	1	Valasek,V	Q
16.813	811926	6.8	B	CZ			3		0.08	B		10	5.5	Y	1	Elias,P	
16.815	811927	6.9	B	CZ			3		0.10	O		25	5.5	Y	1	Janecek,V	
16.82	811928	6.5	B	57	7		4		0.056	B		8	4.4	Y	1	Kraling,W	
16.82	811929	7.5	B	AAVSO					0.20	R						Churyumov,K	
16.8264	811930	6.5	S		19		6		0.08	B		10	5.0	Y	1	Znasik,M	
16.83	811931	6.8	B	57	6		5		0.100	B		14	4.4	Y	1	Kraling,W	R
16.83	811932	6.8	B	E	13		6		0.08	R	10	28				Gostev,A	
16.854	811933	7.8	S	57	5		5		0.080	B		15	4.5C	Y	1	Korth,S	S
16.858	811934	8.0	S	57	2.3		4		0.076	R	12	23	5.4C	Y	1	Taylor,M.D	T
16.86	811935	7.2	S	57	24		2		0.05	B		10	4	Y	1	Zanut,S	
16.872	811936	7.0	M	57	6		4		0.09	M	11	56	5.0M	Y	10	Westlund,M	
16.875	811937	7.2	B	CZ	15		4		0.080	B		10	5.3	Y	1	Bilek,V	
16.875	811938	7.6	B		4		5		0.130	N	8	40	4.0	Y	1	Lieder,F	
16.882	811939	7.2	M	57	15		3		0.030	B		8	5.6	Y	2	Kosinski,J	
16.885	811940	6.5	B	57	14		5		0.050	B		7	4.5	Y	1	Linder,J	
16.889	811941	7.1	M	SC2000	9.0		5		0.08	B		11	5.6	Y	1	Fleet,R.W	U
16.889	811942	6.6	B	57	7		5	0.05	0.08	B		20	6	N	2	Knain,E	
16.896	811943	7.1	B	57	16		3		0.07	M	10	58	5.7C	Y	1	Nieboerek,T	
16.896	811944				4		5		0.20	SC	10	111	6.0	Y	1	Bromseth,P.-J	
16.896	811945	6.7	S						0.05	B		10	6.0	Y	1	Bromseth,P.-J	
16.899	811946	7.2	M	57					0.060	R	4.5	10	5.2	Y	1	Chodorowski,F	
16.899	811947	7.3	B	57	6		6		0.080	R	6.3	50		Y	1	Pfitzer,E	V
16.903	811948	7.2	M	SC2000	6.5		6		0.15	N	4	50	5.6	Y	1	Fleet,R.W	W
16.903	811949	8.1	M	CZ	10		7		0.16	R		50	5.7	Y	1	Silhan,J	
16.903	811950	6.2	S	57	7		6		0.05	B		10	5.5	Y	1	Vanin,G	
16.906	811951	6.3	B	57	14		5		0.050	B		7	4.5	Y	1	Linder,J	
16.910	811952				6		3		0.064	R	12	32		Y	1	Chodorowski,F	
16.911	811953	7.1	M	57	13		7		0.04	B		12	6.1	Y	1	Henshaw,C	
16.917	811954	7.8	B	57					0.04	B		8	4.5	Y	1	Czerniewski,W	
16.917	811955	7.2	M	57	20		3		0.030	B		8	5.6	Y	1	Honko,M	
16.917	811956	7.3	M	117	2.4		4		0.114	N	8	36	5.5	Y	1	Pennelli,G	
16.918	811957	6.8	B	57	0.2		5	0.01	0.28	SC	5	70	5.2	Y	1	Amoratti,M	
16.928	811958	7.7	M	CZ	20		5		0.10	B		25	5.6	Y	1	Silhan,J	
16.93	811959	5.2	S	DCS 3B	23		4		0.046	R	4	8	5.5	Y	1	van de Weg,R.L.W	
16.93	811960	5.6	B	DCS 3B	23		4		0.046	R	4	8	5.5	Y	1	van de Weg,R.L.W	
16.93	811961	6.8	B	AAVSO					0.11	R						Churyumov,K	
16.938	811962	6	B	57	7				0.08	B		15		N	2	Losada,R	X
16.94	811963	6.5	B	AA	15		5		0.050	B		7	5.0	N	1	Schmeer,P	
16.94	811964	6.2	B	57			8		0.050	B		10	4.5	Y	1	Wagner,G	
16.942	811965	7.1	M	57	1.3	1	1	0.04	0.125	N	5.8	28	5.5C	Y	2	Riccabone,G	
16.944	811966	7.4	M	SC2000	6.5		6		0.075	R	16	50	5.6	Y	1	Fleet,R.W	W
16.944	811967	6.8	M	57	1.3	1	1	0.04	0.125	N	5.8	28	5.5C	Y	2	Riccabone,G	
16.946	811968	6.9	M	57	1.3	1	1	0.04	0.125	N	5.8	28	5.5C	Y	2	Riccabone,G	
16.947	811969	6.8	M	57	1.3	1	1	0.04	0.125	N	5.8	28	5.5C	Y	2	Riccabone,G	
16.949	811970	6.8	M	57	1.3	1	1	0.04	0.125	N	5.8	28	5.5C	Y	2	Riccabone,G	
16.956	81																

DATE: 16 NOV 1985

DATE: 16 NOV 1985

Date(UT)	ACN#	ml	NM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
16.969	811975	6.5	B	57	12				0.15	N	5	38		N	2	Rodriguez C., J.A	
16.970	811976	6.8	N	57		1			0.125	N	5.8	28	5.0C	Y	2	Riccabone, G	
16.972	811977	6.8	M	57		1			0.125	N	5.8	28	5.0C	Y	2	Riccabone, G	
16.983	811978	6.8	M	C2	30.2				0.060	B		12	6	Y	1	Barak, R	
16.993	811979	6.6	B	57	6.0	5			0.050	B		7	5.5	N	1	Lunde, R	

NOTE A Tail length approximate.  
 NOTE B Diffuse and still circular.  
 NOTE C Coma diameter approximate. Jet or streamer?  
 NOTE D 0.362 f/5 Newtonian with magnifications 145 and 302 also used. At 302x nucleus stellar with pin points around it, almost grainy. Tail fan shape PA 110-170, dim.  
 NOTE E Modified Sidgwick method used.  
 NOTE F Coma diameter approximate.  
 NOTE G Neighbor put on outside light.  
 NOTE H Pillar micrometer used for coma diameter.  
 NOTE I (PA value appears to be measured incorrectly. Ed.)  
 NOTE J Slight haze.  
 NOTE K Some high clouds, star close to coma? Interfered.  
 NOTE L Superb night, comet observed from Nov. 16.104 to 16.368 with varying optical aids. Seen naked eye at 0710 UT, confirmed repeatedly by fellow observer. Coma measured with declination vernier - surprisingly large; only slight elongation on N.  
 NOTE M Diffuse cloud.  
 NOTE N Tail not seen.  
 NOTE O Finder scope.  
 NOTE P (Observer gave limit as 11.5. Ed.)  
 NOTE Q Adapted to the actual (rather bad, street lights visible) observing conditions.  
 NOTE R Nucleus approximately magnitude 10.0.  
 NOTE S Coma diameter 10-15 arc min.  
 NOTE T Some haze.  
 NOTE U 16' coma, averted vision.  
 NOTE V Haze. (Observer gave limit as 10.5. Ed.)  
 NOTE W 12' coma, averted vision.  
 NOTE X Near M45.  
 NOTE Y (Observer gave limit as 8.3. Ed.)  
 NOTE Z Pleiades in field of view. (Translated by IHW staff. Observer indicated "A" method [Argelander?]. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
16.005	830250	1.76	0.050	B	12		6	5.5	1	Donatiello, G	
16.026	830251	0.34	0.067	R	13.3	35,133	14	5.5	1	Donatiello, G	
16.084	830252	1	0.229	R	10	45,100	30	6.0	1	Nowak, G.T	A
16.144	830253		0.203	SC	10	50	25	5	1	Arpin, P	B
16.436	830254	0.3	0.15	N	8	50	59	6.5	1	Donth, D	C
16.802	830255	0.70	0.153	N	8.5	65	30		1	Cifuentes, E	D
16.866	830256	1.6	0.090	M	11	56	15	5.0	10	Westlund, M	E
16.887	830257	0.23	0.20	SC	10	111	15	6	3	Bremseth, P.-J	F
16.905	830258	0.08	0.125	N	5.8	28, 40, 80	23	5.5	2	Riccabone, G	G
16.911	830259	1.2	0.080	B		20	15	6	1	Knain, E	H
16.938	830260	2.38	0.080	B		15			4	Losada, R	I
16.958	830261	0.60	0.210	N	5.7	30, 66			1	Temprano, J	J
16.969	830262		0.150	N	5	38			2	Rodriguez C., J.A	K
16.970	830263	0.64	0.200	SC	10	50	4	4	1	Schumacher, K	L

NOTE A Jet at PA 135; jet at PA 190; jet at PA 230.  
 NOTE B The coma looks like an unresolved globular cluster and the condensation is almost stellar. A faint star (arrowed) is visible at the edge of the coma.  
 NOTE C This drawing shows a 9.0 mag. C. Halley among a small group of stars located southeast of the Pleiades, approximately 3hr, 51m, +22 deg. the degree of coma condensation I would estimate at 5 with a coma diameter of 2.7 min. of arc. A hazy nucleus was visible at 50x, but offered no detail at higher magnification.  
 NOTE D Two tails visible on south (PA 190), or one tail with a dark intermediate "aisle", and another to the north. Much growth of the northern tail as well as slightly increasing its inclination. Nucleus has become more extensive on east side. Nucleus less stellar on other occasions. Limiting magnitude 11.5.  
 NOTE E Moonlight.  
 NOTE F Central condensation very small, diameter 3 arc sec. No "dusty" east of the coma. [sic] The coma was round. The brightness steadily decreasing from the center.  
 NOTE G Area of white nebulosity at PA 131.5. Magnifications of 60 and 144 also used. Two drawings. (Translated by IHW staff. Ed.)  
 NOTE H Coma diffuse, brightness steadily decreasing from center toward edge. Tail very diffuse.  
 NOTE I Halley near Pleiades (M45). Observed against background light pollution. Scale is approximate. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE J Without tail. (Duration not indicated. Time of observation is assumed to be roughly mid time. Ed.)  
 NOTE K Traces of tail? (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE L Round, considerably strong condensation. No tail perceptible. (Translated by IHW staff. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
16.026	850209	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y		102/P		Jager, M	A
16.086	850210	0.200	4.5		10.3 x 6.9	4.50	Kodak Tri-X		N	T	13/C	1	Priestaz, D.C	B
16.103	850211	0.300	1.5	0.200	6.9 x 4.6	1.00	Kodak 2415		Y		564/S		Alvarez, M.L	
16.107	850212	0.300	1.5	0.200	6.9 x 4.6	1.00	Kodak 2415		Y		565/S		Alvarez, M.L	
16.122	850213	0.300	1.5	0.200	6.9 x 4.6	10.00	Kodak 2415		N	C	567/P		Alvarez, M.L	C
16.123	850214	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	234/P	1	Sabia, J.D	D
16.144	850215	1.8	3	0.6	1.1 x 0.8	10.00	Kodak IIA-O		N		000/P	1	Antal, M	
16.146	850216	0.205	3.8		10.0 x 6.7	5.00	Kodak VR 200	200/24	N	T	13/P	1	Cunningham, J	
16.155	850217	0.205	3.8		10.0 x 6.7	15.00	Kodak VR 200	200/24	N	T	14/P	1	Cunningham, J	
16.163	850218	0.300	1.5	0.200	6.9 x 4.6	1.00	Kodak 2415		Y		570/S		Alvarez, M.L	
16.189	850219	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	S	3/P	1	Dilsizian, R	
16.208	850220	0.610	3.5	0.174	3.4 x 2.3	30.00	Kodak 098-04		N	O	000/P	1	Lilge, A	E
16.265	850221	0.135	2.8		15.2 x 10.2	4.00	Kodak Tri-X		N	C	613/N	1	Lazerson, H	F
16.425	850222	0.75	5	0.15	2.7 x 1.8	25.00	Ilford HP5		N		3/P	1	Barclay, J	G
16.809	850223	0.400	5.5		5.2 x 3.4	13.00	ORWO NP 27	400/27	N	O	1/N	1	Kamenickj', M	H
16.823	850224	0.400	5.5		5.2 x 3.4	13.00	ORWO NP 27	400/27	N	O	2/N	1	Kamenickj', M	H
16.830	850225	0.135	1.8		15.2 x 10.2	1.00	Ilford HP-5	400/	N		4/P	1	Olesen, J.O	I
16.831	850226	0.135	1.8		15.2 x 10.2	2.00	Ilford HP-5	400/	N		5/P	1	Olesen, J.O	I
16.835	850227	0.135	1.8		15.2 x 10.2	4.00	Ilford HP-5	400/	N		6/P	1	Olesen, J.O	I
16.839	850228	0.135	1.8		15.2 x 10.2	5.00	Ilford HP-5	400/	N		7/P	1	Olesen, J.O	I
16.842	850229	0.400	5.5		5.2 x 3.4	10.00	ORWO NP 27	400/27	N	O	3/N	1	Kamenickj', M	H
16.852	850230	0.400	5.5		5.2 x 3.4	15.00	ORWO NP 27	400/27	N	O	4/N	1	Kamenickj', M	H
16.855	850231	0.750	6.3		2.7 x 1.8	35.00	ORWO	400/27	N	C	3/N	1	Znasik, M	J
16.871	850232	0.400	5.5		5.2 x 3.4	12.00	ORWO NP 27	400/27	N	O	5/N	1	Kamenickj', M	H
16.884	850233	0.400	5.5		5.2 x 3.4	15.00	ORWO NP 27	400/27	N	O	6/N	1	Kamenickj', M	H
16.888	850234	0.400	5.6		5.2 x 3.4	7.00	Fujichrome	400/	N		01/P		Bremseth, P.-J	

DATE: 16 NOV 1985

DATE: 16 NOV 1985

Date(UT)	ACON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
16.893	850235	1.690	5.6	0.305	1.2 x 0.8	3.00	Agfachrome	1000/31	N		2/S	1	Korth,S	K
16.904	850236	0.400	5.5		5.2 x 3.4	10.00	ORWO NP 27	400/27	N	O	7/N	1	Kamenickj',M	H
16.919	850237	0.400	5.5		5.2 x 3.4	10.00	ORWO NP 27	400/27	N	O	8/N	1	Kamenickj',M	H
16.927	850238	0.600	1.7	0.350	3.4 x 2.3	10.00	Ilford HP5	400/27	N	O	001/T	1	Battaini,P	L
16.934	850239	0.400	5.5		5.2 x 3.4	15.00	ORWO NP 27	400/27	N	O	9/N	1	Kamenickj',M	H
16.968	850240	1.000	5	0.200	2.1 x 1.4	15.00	3M 1000	1000/	N	X	2/S	1	Vadin,G	
16.984	850241	0.300	5.6		6.9 x 4.6	6.00	Agfachrome	1000/31	N		3/S	1	Korth,S	K

NOTE A Coma 20 arc min., magnitude 6.0, faint outer glow 40 arc min., tails 30 arc min. at PA 30, 20 arc min. at PA 67, 15 arc min. at PA 270, 10 arc min. at PA 293. Instrument is Schmidt camera.

NOTE B Push processed to 800 ASA.

NOTE C Very good, computer guiding(!). [sic]

NOTE D Light cloud cover.

NOTE E Red Wr. 25 filter used.

NOTE F (Observer's image identifier is 16-13. Ed.) "Push" processed to 800 ASA.

NOTE G (Photographer rated film at ISO 5000. Ed.)

NOTE H 6x6 cm format film used.

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

NOTE J Large format (11.8x8.6 cm) film used.

NOTE K City lights interfered with the observation. (Observer indicated both type O and type X guiding. Ed.)

NOTE L Instrument is Celestron 14 inch Schmidt camera.

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)	Notes
17.00	811980	7.5	B	AAVSO					0.20	R						Churyumov, K	
17.015	811981	7.6	B	57					0.05	B			20	4.5	Y	da Silva, L.A.L	
17.016	811982	6.3	S	57	8	3			0.25	N	5.6		56	6	M	Jordan, J	A
17.017	811983	6.9	M	57	6.7	5	0.50	24	0.070	B			16	5.7C	Y	Taylor, M.D	
17.031	811984	8.1	B		6	6			0.07	B			20	6	Y	Fillimon, E	
17.031	811985	5.5		57		5			0.20	SC	10		70	5.0	Y	Williams, D.J	B
17.040	811986	6.8	M	57	1.2	2	0.03	144	0.125	N	5.8		28	4.5C	Y	Riccabone, G	
17.042	811987	8	B	57		5			0.08	B			11	4.5	Y	Gorski, L	
17.042	811988	6.8	M	57	1.2	2	0.03	145	0.125	N	5.8		28	4.5C	Y	Riccabone, G	
17.042	811989	6.8	M	57	1.2	2	0.03	140	0.125	N	5.8		28	4.5C	Y	Riccabone, G	
17.044	811990	6.8	M	57	1.2	2	0.03	140	0.125	N	5.8		28	4.5C	Y	Riccabone, G	
17.076	811991	6.0	B	57	17				0.06	R	11.7		25		Y	Gallego, J	C
17.076	811992			57	1.4	6			0.210	N	5.0		43	5.7C	Y	Taylor, M.D	
17.083	811993	6.0	S	57	3	1			0.152	N	8	135	5		Y	Lewis, D.E	D
17.087	811994	6	B	57	15				0.256	N	5.6		45		Y	Pedraz, S	
17.090	811995	6.0	B	57	17				0.256	N	5.6		45		Y	Gallego, J	
17.094	811996	7.0	B	57	5				0.15	N	5		75		Y	Velasco, P	
17.097	811997	7.3	B	57	1	5			0.035	B			7	4.0C	Y	Pilch, R	
17.104	811998	7.3	B	57	10.5	3			0.140	SN	3.6		28	4.3	Y	Rousom, J	E
17.132	811999	7.5	B	57	6.9	3			0.127	SC	10		50	4.3	Y	Rousom, J	F
17.142	812000	6.9	S	57	21.6	7			0.32	N	4.4		56	5.1	Y	Arsail, R.B	
17.15	812001	6.4	B	57	15	6			0.080	B			20	4.5	Y	Kronk, J	
17.167	812002	6.2	S	57	13.5	8			0.108	N	4		24	5.5	Y	Franch, J	
17.167	812003	5.3	B	57	20	8			0.20	SC	10		77	6.0	Y	Hodonsky, K	G
17.19	812004	7.8	B	57	10.8	8			0.335	N	4.5		56	4.5	Y	Kronk, G	
17.20	812005	5.2	S	58	22	5			0.080	B			11	5.6	Y	Spratt, C.E	
17.208	812006	6.8	B	57					0.080	B			20	5.5	Y	Smith, D	
17.22	812007	5.3	S	58	20	5			0.080	R	3.7		19	5.6	Y	Spratt, C.E	
17.24	812008	6.1	S	57	22	5			0.040	B			8	7.0	Y	Keen, R	H
17.24	812009	6.0	V	57						BY					Y	Keen, R	
17.260	812010	6.2	S		15	6			0.080	B			11		Y	Pratt, J	I
17.30	812011	5.4	S	58	18	4			0.140	SN	3.6		28	6.1	Y	Spratt, C.E	J
17.32	812012	5.0	S	58	22	2				BY					Y	Spratt, C.E	
17.396	812013	6.1	M	57	18	7	0.13	290	0.05	B			10	5.0	Y	Fabre, R	K
17.41	812014	5.9	M	57	14	7	0.25		0.080	B			20	6.0	Y	Morris, C.S	
17.44	812015	6.7	S	57	11.5	7			0.07	B			10	5.0M	Y	Yasuki, M	
17.488	812016	7.2	M		5	6			0.10	N	10		55	4.0M	Y	Kato, T	L
17.49	812017	6.4	M	57			1	125	0.05	B			10	6.5	Y	Hale, A	M
17.49	812018						1	125	0.20	N	6		61	6.5	Y	Hale, A	
17.51	812019	7.4	B	M	4.2	6			0.21	N			80			Knyazyuk, N	
17.521	812020	7.1	B	57	6	5			0.050	B			7	5.8C	Y	Parkinson, M	N
17.529	812021	7.0	S	57					0.06	R	15		91	4.0	Y	Ichikawa, K	
17.54	812022	6.8	B		14	5			0.16	N	4.8		24		Y	Maeda, S	
17.542	812023	7.0	S	57	1.5	1			0.05	R	16		20	5.0C	Y	Feisheng, J	
17.542	812024	7.0	S	57	5	5			0.153	N	8.6		33	5.0	Y	Iwaki, Y	
17.542	812025	7.5	B	57					0.05	B			7	5.5	Y	Hasegawa, T	
17.549	812026	6.8	S	57		6			0.05	B			10	5.0	Y	Williams, P.F	
17.549	812027	7.1	B	57					0.07	B			10	5.5	Y	Date, M	
17.555	812028				5	9	0.2	15	0.15	N	8		50	5.0	Y	Williams, P.F	O
17.575	812029	6.8	M	57	13	7			0.08	B			11	6	Y	Mitsuma, S	P
17.59	812030	7.6	B	M					0.05	B			7			Konstantinov, S	
17.611	812031	6.5	B		12				0.035	B			7		Y	Okada, M	
17.66	812032	7.8	B	57	15	6			0.15	N	8.6		41	5.5	Y	Makino, J	
17.665	812033	6.2	M	57	8	6			0.030	B			8	5.0C	Y	Kato, T	
17.684	812034	6.5	M	57	5	6			0.035	B			7	5	Y	Watanabe, A	
17.70	812035	6.4	B	57	21.5	6			0.05	B			7	6.0	Y	Kanai, K	
17.70	812036	6.2	M	57	21.5	6			0.05	B			7	6.0	Y	Kanai, K	
17.70	812037	6.1	S	57	21.5	6			0.05	B			7	6.0	Y	Kanai, K	
17.72	812038	7.2	S	AAVSO	8	5	0.17		0.13	N	6.3		24	6.0	Y	Hayashi, A	
17.785	812039	7.1	M	57					0.06	R	4.5		10	5.2C	Y	Chodorowski, F	
17.788	812040				7	3			0.064	R	12		32		Y	Chodorowski, F	
17.797	812041	6.7	B	CZ		3			0.08	B			10	5.5	Y	Elias, P	
17.800	812042	6.6	B	CZ		3			0.08	B			10	5.5	Y	Janecek, V	
17.80	812043	7.4	B	AAVSO					0.20	R						Churyumov, K	
17.802	812044			57		2			0.07	B			10	4.2	N	Deconinck, M	
17.813	812045	6.7	B	CZ		3			0.08	B			10	5.5	Y	Kral, M	
17.829	812046	7.9	B	57	2.7	5			0.063	R	13.3		52	4.5	Y	Bretschneider, H	
17.83	812047	8.0	B	57	10	6			0.080	B			20		C	Jannink, D.W	Q
17.83	812048	7.3	B	DCS 3B					0.080	B			15	5	CM	Keijmel, P.C	
17.83	812049	7.6	S	BD	9	4			0.05	B			7			Kabalin, V	
17.830	812050	7.6	M	CZ	15	7			0.10	B			25	6.2	Y	Silhan, J	
17.832	812051	6.3	S	57	5	6			0.060	R	8		12	5.7	N	Moeller, M	R
17.837	812052	7.1	B	CZ	15	4			0.080	B			10	5.0	Y	Bilek, V	
17.837	812053	7.6	M	CZ	6	4			0.31	N	8		62	4.7	Y	Hajek, P	
17.844	812054	7.1	S	57	15	6			0.070	B			20	5.5	Y	Thomas, A	
17.844	812055	7.5	M	CZ					0.10	B			25	5	C	Valasek, V	T
17.8541	812056	6.3	S		18	7			0.11	R	11		36	5.5	Y	Znasik, M	
17.86	812057	6.6	S	DCS 3B		4			0.080	B			15	5.5	Y	Brill, H.J	
17.861	812058	6.0	B	57	17	7			0.33	N	4.5		63	5.3	Y	Gomez, A	
17.865	812059	7.6	S	57	15	5			0.080	B			15	5	C	Korth, S	U
17.868	812060	7.3	B	57	6	6			0.080	R	6.3		50		Y	Pfitzer, E	V
17.87	812061	6.8	B	DCS 3B					0.080	B			15	5.5	Y	Brill, H.J	
17.87	812062	7.5	B	AAVSO					0.11	R						Churyumov, K	
17.871	812063	6.7	M	AAVSO	10	7			0.063	R	13.3		52		Y	Csukas, M	
17.8733	812064	6.2	S		24	5			0.08	B			10	5.5	Y	Znasik, M	
17.875	812065	6.8	M	CZ	20	6			0.05	B			7	6.2	Y	Silhan, J	
17.875	812066	7.8	B	CZ		3			0.06	R			15	5.5		Vaclik, F	W
17.888	812067	6.8	S	SAO					0.31	N	5		62			Giampaolo, G	
17.89	812068	6.7	S	57	6	6			0.08	B			15	4.5C	Y	Glowinski, C	U
17.89	812069	5.8	S	DCS 3B	12	3			0.080	B			15	4.5C	Y	Wils, P	
17.898	812070	6.6	M	AAVSO	9	7			0.063	R	13.3		52			Koss-Kiss, A	X
17.91	812071	7.4	B	DCS 3B	4.5	9			0.115	N	8		45	5.5C	Y	van Munster, T	
17.92	812072	6.3	S	57	20	4			0.050	B						Luthen, H	
17.92	812073	7.3	S	DCS 3B	10	4			0.102	R			37	4.0C	Y	van Asperen, H	
17.92	812074	6.4	S	DCS 3A	12	6			0.040	R			10	5	C	van Lo, F.R	
17.93	812075	6.8	B	DCS 3B		6			0.063	B			9	4.5C	N	Swart, E.T	
17.944	812076	7.0	M	SC2000	8.5	6			0.08	B			11	5.6	Y	Fleet, R.W	Y
17.958	812077	5.5	S	57	20	6											

DATE: 17 NOV 1985

DATE: 17 NOV 1985

Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes	
17.97	812081	7.0	S	DCS 3B	12	3			0.150	R	15	31	4	C	N	1	Geenen,J.J	
17.979	812082	7.6	M	CZ	10	7			0.16	R		50	6.3	Y	1	Silhan,J		
17.98	812083	6.2	B	AA	18	5			0.050	B		7	5.0	N	1	Schmeer,P		
17.997	812084	7.5	M	SC2000	5.5	6			0.15	N		50	5.6	Y	1	Fleet,R.W	c	

NOTE A Skies partly cloudy and moonlit.  
 NOTE B Hazy, partly cloudy.  
 NOTE C Enormous.  
 NOTE D First sighting.  
 NOTE E Haze.  
 NOTE F Increasing haze.  
 NOTE G No tail seen.  
 NOTE H Modified Sidgwick method used.  
 NOTE I Coma very bright. (Observer gave limit as 9. Ed.)  
 NOTE J Strong nucleus. DC approximate.  
 NOTE K (PA value appears to be measured incorrectly. Ed.)  
 NOTE L Diffuse cloud.  
 NOTE M First naked-eye sighting was on this night.  
 NOTE N Star-like central condensation.  
 NOTE O Tail only suspected.  
 NOTE P Tail not seen.  
 NOTE Q Telescopic limit is 9.  
 NOTE R Cloudy.  
 NOTE S (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE T Adapted to the actual (rather bad, street lights visible) observing conditions.  
 NOTE U Coma diameter approximate.  
 NOTE V (Observer gave limit as 10.0. Ed.)  
 NOTE W Probably well adapted, not dark adapted, of course - there is no dark sky in Czechoslovakia.  
 NOTE X (Observer calls coma diameter value halo diameter. Ed.)  
 NOTE Y 15' coma, averted vision.  
 NOTE Z (Observer gave limit as 8.6. Ed.)  
 NOTE a Notably brighter.  
 NOTE b 8.0' coma, averted vision.  
 NOTE c 11' coma, averted vision.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes	
17.010	830264	1.76	0.050	B		12		9	5.0	1	Donatiello,G	
17.026	830265	0.34	0.067	R	13.3	35,133	14	5.0	1	Donatiello,G		
17.031	830266		0.203	SC	10	70		5.0			Williams,D.J	A
17.076	830267		0.060	R	11.7	25			3	Gallejo,J	B	
17.078	830268		0.06	R	5.7	20			2	Cardiel,N	C	
17.087	830269		0.256	N	5.6	45			2	Pedraz,S	D	
17.090	830270		0.256	N	5.6	45			3	Gallejo,J	E	
17.094	830271		0.15	N	5	75			1	Velasco,P	F	
17.097	830272		0.256	N	5.6	45		5.5	2	Cardiel,N	G	
17.116	830273		0.203	SC	10	81			1	Lohvinsenko,T.W	H	
17.128	830274	0.33	0.20	N	8	70	17	6	1	Vargas B.,A.G	I	
17.139	830275	0.25	0.20	N	8	120	6	6	1	Vargas B.,A.G	J	
17.214	830276	0.99	0.15	N	5	30			1	Zanette,D		
17.246	830277	0.19	0.254	N	5.6	53, 60,120	12	6.5	3	Knisely,D	K	
17.278	830278	3	0.050	B		7		6.0	4	Cook,A.J	L	
17.861	830279		0.33	N	4.5	63			4	Gomez,A	M	
17.862	830280	0.89	0.063	R	13.3	52	104			Kosa-Kiss,A	N	
17.871	830281		0.063	R	13.3	52				Csukas,M	O	
17.911	830282	0.04	0.83	R	19.7	800	23		3	Soc. Astro. de France P		
17.924	830283	0.05	0.83	R	19.7	800	22	5.6	3	Soc. Astro. de France Q		
17.927	830284		0.356	SC	11	200	30		1	Verdenet,M	R	

NOTE A The nucleus was brighter and I think I caught a glimpse of a very faint tail! (Duration not indicated. Time of observation is start time. Ed.)  
 NOTE B Very big. Spherical. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE C The "false nucleus" appeared stellar. Coma very big. (Duration not indicated. Time of observation is assumed to be mid time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE D Observed 3 R. after where marks the cross. [sic] Two "spots" in the stellar central condensation. (Drawing data inferred from magnitude report form. Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE E (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE F Bright and condensed nucleus, (1'. Diffuse coma boundaries. Spherical. Observed with J.M. Cuadra. Temp. -3 C. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE G DC = 6. (Duration not indicated. Time of observation is assumed to be mid time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE H The famous Halley is seen here much brighter than last observed. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE I Some instants during the observations a clear rays appear around the central condensations, the PA was estimated in 70 grades more less. [sic]. The coma present a large general aspect. Some times a diffuses filaments (like rays) in radial distribution appears around the central coma. [sic]  
 NOTE J Some instants during the observations a clear rays appear around the central condensations, the PA was estimated in 70 grades more less. The coma aspect was better with 120x. [sic] The air fluctuations permit a good vision in some times when a rays like filaments are very clear around the central nucleo. PA 70. [sic]  
 NOTE K Bright stellar central condensation (magnitude +9?). Darker portion of coma on north side of nucleus from about 4' arc out to 6 or 7 min. from nucleus. Area roughly circular. Faint tail as broad as coma out to approximately 20' arc from nucleus. 7x35 binoculars and star in Pleiades magn. 6.9 used for magnitude determination. Dark spot? (north of nucleus) at PA 30; broad faint tail at PA 110. Magnification of 240x also used.  
 NOTE L Comet was seen through high cirrus just as a storm moved in. (Duration not indicated. Time of observation is start time. Ed.)  
 NOTE M Very condensed. More extended than 3 days before (?). Perhaps a little tail pointing NE. (Duration not indicated. Time of observation is assumed to be roughly mid time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE N Nucleus eccentric. Schematic drawing.  
 NOTE O The nucleus isn't in center. (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE P Jet at PA 103, 13" long; jet at PA 155, 11" long; ion tail at PA 218, 132" long; jet at PA 237, 15" long; streamer at PA 238, 92" long; jet at PA 290, 17" long; jet at PA 340, 8" long. Drawing made by Serge Thebault.  
 NOTE Q Jet at PA 97, 18" long; jet at PA 120, 20" long; streamer at PA 150, 31" long; streamer at PA 201, 75" long; tail at PA 211, 105" long; streamer at PA 267, 33" long. Drawing made by Alain Perez.  
 NOTE R (Additional drawing submitted made with 11x80 binoculars (1.95"/mm). Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
17.035	850242	0.200	4.5		10.3 x 6.9	9.00	Kodak Tri-X		N	T	18/C	1	Priester,D.C	A

DATE: 17 NOV 1985

DATE: 17 NOV 1985

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
17.047	850243	0.135	2.8		15.2 x10.2	20.00	Kodak 2415		Y	S	1/P	1	de Luis,J	
17.058	850244	0.200	4.5		10.3 x 6.9	2.00	3M	1000/	N	O	9/T	1	Martin,D	
17.061	850245	0.200	4.5		10.3 x 6.9	2.00	3M	1000/	N	O	10/T	1	Martin,D	
17.064	850246	0.200	4.5		10.3 x 6.9	3.00	3M	1000/	N	O	11/T	1	Martin,D	
17.070	850247	0.200	4.5		10.3 x 6.9	3.00	3M	1000/	N	O	12/T	1	Martin,D	
17.074	850248	0.200	4.5		10.3 x 6.9	4.00	3M	1000/	N	O	13/T	1	Martin,D	
17.081	850249	0.200	4.5		10.3 x 6.9	4.00	3M	1000/	N	O	14/T	1	Martin,D	
17.091	850250	2.400	4	0.600	0.9 x 0.6	40.00	Kodak IV-F		N	O	003/T	1	Battaini,P	
17.098	850251	0.400	6.3		5.2 x 3.4	3.00	3M	1000/	N	O	15/T	1	Martin,D	
17.239	850252	0.305	2.5	0.122	6.8 x 4.5	20.00	Kodak 2415		N	S	139/P	1	Minton,R.B	B
17.253	850253	0.135	2.8		15.2 x10.2	4.00	Kodak Tri-X		N	C	615/N	1	Lazerson,H	C
17.398	850254	0.500	5		4.1 x 2.7	6.00	Sakura 1600	1600/	N	S	15/P	1	Sanford,J	D
17.603	850255	0.850	3.4	0.25	2.4 x 1.6	15.00	Kodak 6415		Y	C	3/P	1	Kojima,T	E
17.901	850256	0.950	4.7	0.20	2.2 x 1.4	5.00	Kodak 2415		Y	C	4/P	1	Conrad,R	F
17.964	850257	0.135	2.8		15.2 x10.2	15.00	HN 29		N	S	1/P	3	Portela,A	G

NOTE A Push processed to 800 ASA.

NOTE B (Prints submitted by observer are composites of two contiguous 10 min. Ed.) Instrument is Aero-Ektar aerial camera lens.

NOTE C (Observer's image identifier is 16-15. Ed.) "Push" processed to 800 ASA.

NOTE D Frontal obscuration ends exposure after 6 minutes.

NOTE E Instrument is Wright-Schmidt. Large format (120 size) film used.

NOTE F City lights interfered with the observation; Vienna, from room!

NOTE G Push processed to 1000 ASA.



DATE: 18 NOV 1985

DATE: 18 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
18.004	812085	6.0:	B	57	11				0.114	N	8.7	100		Y	1	Rodriguez C., J.A	A
18.010	812086	7.4	M	SC2000	4.5	6			0.075	R	16	50	5.6	Y	1	Fleet, R.W	B
18.010	812087				5	6			0.200	R	14	40	6.1	Y	1	Rogers, J.H	C
18.017	812088	6.6	S	57	10	3			0.080	B		10	6.1	Y	1	Rogers, J.H	
18.05	812089	6.2	S	57					0.08	B		10	6.0	Y	1	Shanklin, J.D	
18.058	812090	7.0	B	58					0.203	N	6	75	4.0	Y	10	Troiani, D.M	
18.06	812091	5.2	S	57						EY			6.0		1	Shanklin, J.D	D
18.07	812092								0.20	R	12	40	6.0		1	Shanklin, J.D	E
18.073	812093	6.0	S	57	17	3			0.050	B		10	6.1	Y	2	Rogers, J.H	F
18.09	812094	6.1	S	57	12	4			0.040	B		8	6.0	Y	1	Keen, R	G
18.108	812095	6.8	S	57	15	6			0.32	N	4.4	56	5.1M	Y	1	Ariail, R.B	
18.133	812096	6.7	M	57	20.0	5			0.05	B		7	6.3	Y	5	DeYoung, J.A	H
18.135	812097	6.3	S	57	7	4			0.050	B		10	5.4	Y	1	Sabia, J.D	
18.149	812098				24	1			0.05	B		7	3.7			Lairret, R	
18.15	812099	5.4	S	58	20	3			0.080	B		11	6.2	Y	1	Spratt, C.E	I
18.15	812100	5.5	S	58, 57	18	4			0.080	R	3.7	19	6.2	Y	1	Spratt, C.E	I
18.160	812101	6.0	B	57	20	6			0.035	B		7	5.0	Y	1	Stephan, C	J
18.20	812102	5.8	S	SAO	20	5			0.050	B		10				Bortle, J.E	K
18.20	812103	6.0	S	SAO						EY						Bortle, J.E	L
18.20	812104				16	6			0.080	B		20				Bortle, J.E	
18.20	812105				13	7			0.317	N	6	55				Bortle, J.E	
18.2132	812106	6.3	S	SAO	13	6			0.080	B		20	5.6		3	Machholz, D	
18.24	812107	5.5	M	AA	14	6			0.056	R	10	20				Green, D.W.E	M
18.24	812108	6.1:	M	AA	14	8			0.229	R	12	86				Green, D.W.E	M
18.24	812109	5.6	S	AA	14	6			0.056	R	10	20				Green, D.W.E	M
18.273	812110	7.0	M	58	3	5			0.152	N	4.4	28	4.6	Y	5	Glassett, W	N
18.30	812111	6.3	M	57					0.05	B		10	5.9	Y	21	Hale, A	O
18.30	812112	5.7	S	AA	18	6			0.080	B		20				Green, D.W.E	M
18.30	812113	5.6	M	57, 58	13	7			0.080	B		20	6.0	Y	6	Morris, C.S	
18.313	812114	6.9	S	57	30	5			0.08	R	6	20	6.0	Y	1	Bracken, R	P
18.32	812115	5.5	M	57, 58	14	7			0.050	R		8	6.0	Y	6	Morris, C.S	
18.34	812116						0.67	101	0.256	N	4.5	45	6.0	Y	6	Morris, C.S	
18.351	812117	6.1:		57					EY				5.9	Y	4	Krisiunas, K	Q
18.396	812118	5.9	M	57	18	7	0.13	290	0.05	B		10	5.5	Y	1	Fabre, R	R
18.406	812119	7.7	B	57		2			0.08	R	6.3	16	4.5	Y	1	Burch, J.Q	S
18.52	812120	5.5	S	57					0.025	B		3	6	Y	1	Seargent, D	T
18.52	812121				18	8			0.08	B		15				Seargent, D	
18.53	812122	6.5	B		15	5			0.16	N	4.8	24		Y	1	Maeda, S	
18.54	812123	7.3	B		7	5			0.15	N	8	43	5.0	N	1	Uda, K	
18.55	812124	6.8	M	57	14	7			0.08	B		11	6	Y	1	Mitsuma, S	U
18.556	812125	6.4	B		20				0.035	B		7		Y	2	Okada, M	
18.558	812126	6.0	M	57	10	5			0.030	B		8	5.0C	Y	1	Kato, T	
18.56	812127	7.2	S		5.6	6			0.15	N	8	43	3.5	N	1	Uda, K	
18.583	812128	7.0	S	57	1.5	1			0.05	R	16	20	5.0C	Y	1	Felsheng, J	
18.60	812129	7.1	B	57	7	5	0.1	90	0.15	N	8.6	41	5.5	Y	1	Makino, J	
18.61	812130	7.3	B	SAO	10	6			0.20	N	5.6	44	6.5	Y	5	Nakamura, A	
18.61	812131	6.9	M	SAO	14	6			0.06	R	12	22		Y		Nakamura, A	
18.61	812132	8.3	B	SAO	10	7			0.15	N	5.7	34	4.0	Y	7	Tanikawa, M	V
18.615	812133	8.2	S	57	1.1	6			0.15	N	6	45	3.6C	Y	1	Wakatsuki, M	
18.622	812134	6.8	M	57	19.4	6	0.33	100	0.1	N	10	40	6.5	Y	1	Ichikawa, K	
18.663	812135	7.5	M	57	2.4	7			0.12	N	6	36	4.0	Y	1	Kishi, A	
18.68	812136	7.0	M		10	6			0.05	B		7	6.0	Y	2	Hiraga, M	
18.681	812137	7.0	B	57					0.07	B		10	5.5	Y	1	Date, M	
18.69	812138	5.9	S	57	19.1	6	0.3	20	0.05	B		7	6.0	Y	1	Kanai, I	
18.69	812139	6.5	B	57	19.1	6	0.3	20	0.05	B		7	6.0	Y	1	Kanai, I	
18.753	812140	7.2	B	57		7			0.063	R	13.3	21	5.1C	N	1	Pilski, A	
18.76	812141	7.1	S	AAVSO	7	5	0.1		0.13	N	6.3	24	6.0	Y	1	Hayashi, A	
18.79	812142	6.9	B	E	14	5			0.05	B		7				Mormil, V	
18.83	812143	6.9	B	E	14	5			0.05	B		7				Mormil, V	
18.83	812144	6.5	B	AAVSO					0.11	R						Churyumov, I	
18.844	812145			57		2			0.07	B		10	4.0	N	1	Deconinck, M	
18.85	812146	8.0	B	M	17				0.03	B		8				Zin'yev, V.A	
18.87	812147	6.9	B	E	14	5			0.05	B		7				Mormil, V	
18.875	812148				2.1	6			0.076	R	16	100	5.0C	Y	1	Kukkonen, I.T	W
18.882	812149	6.0:	B	57	13				0.15	N	5	38		N	2	Rodriguez C., J.A	A
18.885	812150	7.3	B	57					0.05	B		7	5.0C	Y	1	Kukkonen, I.T	
18.896	812151	6.0:	B	57	18				0.05	B		20		N	4	Gallego, J	M
18.90	812152	5.7	S	PLEIADE					0.05	B		7	4.5		1	Shanklin, J.D	X
18.90	812153	5.9	S	57	20	5			0.050	B		7			1	Luthen, E	
18.90	812154				20	6	1	110	0.200	SC	10	36		Y	1	Luthen, E	Y
18.906	812155	6.7	B	M	17.6	6			0.20	R	15	150				Gostev, A	
18.92	812156	6.7	B	57	6	4			0.114	N	3.7	47	4.0	N	3	Gomez, T.L	Z
18.93	812157	6.7	B	M	21	7			0.20	R	15	150				Gostev, A	
18.93	812158	6.7	B	M	17.6	7			0.20	R	15	150				Gostev, A	
18.98	812159	6.2	S	59	5.5	6			0.050	R	10	15	5.5	N	2	Jahn, J	
18.98	812160				3.7	2.9			0.050	R	10	67	5.5	N	2	Jahn, J	
18.99	812161	5.8	S	USNOC	14	5			0.050	B		10				Bortle, J.E	a

NOTE A Tail traces?

NOTE B 9.0' coma, averted vision.

NOTE C Still faint nucleus at 170x. Circular.

NOTE D Mist.

NOTE E Central condensation magnitude 7.8.

NOTE F Coma now asymmetric.

NOTE G Modified Sidgwick method used.

NOTE H Seen naked eye first time.

NOTE I DC approximate.

NOTE J Some haze in sky. Only 10 minutes dark adapted.

NOTE K Like a slightly diffuse star.

NOTE L Trace of blue to coma.

NOTE M Coma diameter approximate.

NOTE N Surprised to see it!

NOTE O Observed from within Los Angeles city limits, but would consider light pollution in this part of the sky as negligible.

NOTE P Magnitude estimate probably trustworthy.

NOTE Q Very good seeing.

NOTE R Comet suspected naked eye with 7 day moon still 10 deg. up, comet not seen naked eye for certain.

NOTE S (PA value appears to be measured incorrectly. Ed.)

NOTE T Inner city lights.

NOTE U Glimpsed with naked eye, Nov. 18.54.

NOTE V Tail not seen.

NOTE W Core mag. (observer's symbol believed to mean "approximately equal to", Ed.) 11.5.

DATE: 18 NOV 1985

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NOTE W Coma diameter determined as an average of five transit time observations.

NOTE X Chart from Sky Telesc. V. 70, 465.

NOTE Y Tail length and PA approximate.

NOTE Z Light pollution.

NOTE a Moonlight.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
18.004	830285		0.114	N	8.7	100			1	Rodriguez C.,J.A	A
18.005	830286	1.76	0.050	B		12		6 5.0	1	Donatiello,G	
18.026	830287	0.33	0.067	R	13.3	35,133		14 5.0	1	Donatiello,G	
18.097	830288		0.203	R	13	110			1	Phillips,J	B
18.271	830289		0.200	SC	10	167,500		20 5.2	1	Ashley,J.B	C
18.62	830290	1.38	0.15	N	5.7	34		14 4.0	2	Tanikawa,M	D
18.882	830291		0.15	N	5	38			2	Rodriguez C.,J.A	A
18.885	830292	0.39	0.076	R	16	100		10 5.0	1	Kukkonen,I.T	
18.896	830293		0.050	B		20			4	Gallejo,J	E

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

NOTE B City lights. Comet noted in finder for the first time. Finder has an 80 mm lens. Halley now much easier to see. Movement noted for the first time. Comet position changed from 0140 to 0220 UT. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C No specific structure could be seen. However, a very slight central condensation was apparent at 167x. The degree of condensation was less pronounced when observing at 500x. Reticule/PA eyepiece yielded 167x. 500x used in inspection for details.

NOTE D Core (observer's symbol believed to mean "approximately equal to", Ed.) 11.5.

NOTE E Observation made inside Madrid (light pollution). (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
18.118	850258	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	236/P	1	Sabia,J.D	
18.126	850259	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	237/P	1	Sabia,J.D	
18.128	850260	0.210	3.5		9.8 x 6.5	10.00	Kodak 2415		Y	S	33/C	2	Chester,G.R	
18.166	850261	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	S	4/P	1	Dilisizian,R	
18.175	850262	0.050	1.8		39.6 x27.0	5.00	Kodak Tri-X	400/	N		1/P	2	Tatum,R	
18.225	850263	0.135	2.8		15.2 x10.2	4.00	Kodak Tri-X		N	C	617/N	1	Lazerson,H	A
18.274	850264	0.500	3.6	0.140	4.1 x 2.7	10.00	3M 1000	1000/31	N	O	1/N	3	Edberg,S.J	
18.274	850265	0.260	5.2	0.050	7.9 x 5.3	10.00	Ilford HP 5	500/	N	O	23/C	3	Edberg,S.J	
18.280	850266	0.500	3.6	0.140	4.1 x 2.7	5.00	3M 1000	1000/31	N	O	2/N	3	Edberg,S.J	
18.280	850267	0.260	5.2	0.050	7.9 x 5.3	5.00	Ilford HP 5	500/	N	O	24/C	3	Edberg,S.J	
18.292	850268	0.260	5.2	0.050	7.9 x 5.3	5.00	3M 1000	1000/31	N	O	3/N	3	Edberg,S.J	
18.298	850269	0.260	5.2	0.050	7.9 x 5.3	10.00	3M 1000	1000/31	N	O	4/N	3	Edberg,S.J	
18.322	850270	0.500	3.6	0.140	4.1 x 2.7	5.00	3M 1000	1000/31	N	O	5/N	3	Edberg,S.J	
18.322	850271	0.260	5.2	0.050	7.9 x 5.3	5.00	Ilford HP 5	500/	N	O	25/C	3	Edberg,S.J	
18.328	850272	0.500	3.6	0.140	4.1 x 2.7	10.00	3M 1000	1000/31	N	O	6/N	3	Edberg,S.J	
18.328	850273	0.260	5.2	0.050	7.9 x 5.3	10.00	Ilford HP 5	500/	N	O	26/C	3	Edberg,S.J	
18.332	850274	0.500	3.6	0.140	4.1 x 2.7	1.00	3M 1000	1000/31	N	O	7/N	3	Edberg,S.J	
18.332	850275	0.260	5.2	0.050	7.9 x 5.3	1.00	Ilford HP 5	500/	N	O	27/C	3	Edberg,S.J	
18.340	850276	0.260	5.2	0.050	7.9 x 5.3	10.00	3M 1000	1000/31	N	O	8/N	3	Edberg,S.J	
18.345	850277	0.260	5.2	0.050	7.9 x 5.3	1.05	3M 1000	1000/31	N	O	9/N	3	Edberg,S.J	
18.349	850278	0.260	5.2	0.050	7.9 x 5.3	4.00	3M 1000	1000/31	N	O	10/N	3	Edberg,S.J	
18.355	850279	0.050	2		39.6 x27.0	1.00	3M 1000	1000/31	N	O	11/N	3	Edberg,S.J	

NOTE A (Observer's image identifier is 16-17. Ed.) "Push" processed to 800 ASA.

DATE: 19 NOV 1985

DATE: 19 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	
19.000	812162	7.1	M	SC2000	4.0	6			0.08	B		11	5.3	Y	1	Fleet,R.W	A	
19.007	812163	7.2	B	57	17	3			0.05	B		7	5.0C	Y	7	Chmielewski,W		
19.024	812164	6.5	S	57	25	7			0.32	N	4.4	56	5.2	Y	1	Ariail,R.B	B	
19.04	812165	6.9			5				0.034	B		9		Y	1	Pereira,A	C	
19.05	812166	6.3	S	DCS 3B	15	5			0.050	B		10	6	Y	3	Comello,G	D	
19.10	812167	5.4	M	AA	11	6			0.080	B		20		Y		Green,D.W.E	E	
19.104	812168	7.0		57	4.5	8			0.203	N	8	128	5.0	Y		Hannon,J	F	
19.133	812169	5.3	B	57	15				0.05	B		7	5.3	N	1	Fox,J.H	G	
19.146	812170	6.5	B	57					0.080	B		20	5.5M	Y		Smith,D		
19.187	812171	6.0	S	57	10	8	3		0.25	N	5.6	56	6	Y	1	Jordan,J	H	
19.208	812172	6.1	M	57	15.0	6			0.05	B		12	6.3	Y	1	Knight,S		
19.23	812173	5.3	S	AA	25	5			0.050	B		7				Green,D.W.E	I	
19.23	812174	5.7	S	USNOC	17	5			0.050	B		10				Bortle,J.E	J	
19.23	812175				15	5			0.080	B		20				Bortle,J.E	K	
19.23	812176					8			0.500	N	5	96				Bortle,J.E	L	
19.24	812177	5.4	S	AA	22	7			0.080	B		20				Green,D.W.E	M	
19.247	812178			57	5.4	5			0.15	N	8	68	4.3	Y	1	Robertson,T	N	
19.253	812179	6.4	M	57	5	5			0.050	B		7	4.3	Y	1	Robertson,T		
19.260	812180	7.4	S	57	28	3			0.035	B		7	4.5C	Y	1	Gronck,J.D	O	
19.32	812181	5.5	M	57, 58	10	7	0.67	90	0.080	B		20	6.0	Y	14	Morris,C.S	P	
19.357	812182	5.4	S	57	12.6	10	3		0.050	B		20	6	Y	1	Jordan,J		
19.4292	812183	5.9	S	SAO	21	8			0.131	R	7.1	27	6.2		1	Machholz,D		
19.4313	812184	6.2	S	SAO	18	7			0.080	B		20	6.2		1	Machholz,D		
19.451	812185	5.7	M	57	18	7	0.17	290	0.05	B		10	5.5	Y	1	Fabre,R	N	
19.4583	812186	6.0	SAO		45	1				EY		6.2			1	Machholz,D		
19.465	812187	7.2	B	57					0.07	B		10	4.5M	Y	1	Date,M		
19.500	812188	6.5	S	57	9.0	2			0.050	B		12	5.3	Y	1	Batza,B		
19.505	812189	7.1	S	57		8			0.05	B		10	5.0	Y	1	Williams,P.F		
19.517	812190	6.0	M	57	10	5			0.030	B		8	4.5M	Y	1	Kato,T		
19.545	812191	7.1	B	57	8	5			0.050	B		7	5.8C	Y	1	Parkinson,M	O	
19.547	812192	6.6	S	57	5	4			0.153	N	8.6	33	4.0	Y	1	Iwaki,Y		
19.573	812193	6.4	B	57	10	6			0.060	B		10	3.5	Y	1	Moriya,M	P	
19.583	812194	7.0	S	57	1.5	1			0.05	R	16	20	5.0C	Y	1	Feisheng,J		
19.61	812195	5.4	S	57					0.025	B		3	6.1	Y	1	Seargent,D		
19.61	812196	6.5	S	57	10	7			0.07	B		10	5.5	Y	1	Yasuki,M		
19.62	812197	8.0	B	57	15	7	0.1	150	0.15	N	8.6	41	6.0	Y	1	Makino,J		
19.757	812198	6.5	B	57	10	5			0.060	B		10	2.5	Y	1	Moriya,M	Q	
19.76	812199	6.8	B	E	7	5			0.05	B		7				Morvil,V		
19.771	812200	7.0	M	57					0.06	R	4.5	10	4.4M	Y	1	Chodorowski,F		
19.771	812201	6.7	B	57	6	7	0.03		0.08	B		20	5	M	Y	2	Knain,E	R
19.778	812202				8	3			0.064	R	12	32		Y	1	Chodorowski,F		
19.824	812203	7.4	B	57		3			0.05	B		10		Y	2	Frosina,A	S	
19.865	812204	6.5		57		6			0.050	B		10	5.6C	Y	1	Kaila,K		
19.87	812205	6.7	B	AAVSO	16	6			0.12	R	5	35				Chernis,K		
19.965	812206	7.3	M	SC2000	8.5	6			0.08	B		11	5.6	Y	1	Fleet,R.W	T	
19.969	812207	7.7	M	SC2000	5.5	6			0.075	R	16	50	5.6	Y	1	Fleet,R.W	U	
19.990	812208	7.6	M	SC2000	6.0	6			0.15	N	4	50	5.6	Y	1	Fleet,R.W	V	

NOTE A 13' coma, averted vision, between clouds.

NOTE B Possible jets. (Observer gives PA 250 and PA 280 for tail PA. Ed.)

NOTE C (Observer gave limit as 8.8. Ed.)

NOTE D Involved with bright star (Tau Ari). Coma diameter approximate.

NOTE E Coma diameter approximate.

NOTE F Hazy sky.

NOTE G Scattered clouds. Tau Arietis comparison star.

NOTE H Skies very clear and transparent, although air was turbulent due to high winds. Coma appeared oblong with nucleus off center in coma.

NOTE I Obs. made after moonset.

NOTE J Almost stellar nuc. of 9-10 mag.

NOTE K Filar micrometer used for coma diameter.

NOTE L Exc. see.

NOTE M Tail was straight and became narrower with distance from coma.

NOTE N (PA value appears to be measured incorrectly. Ed.)

NOTE O Star-like central condensation.

NOTE P Seeing 3/5.

NOTE Q Seeing 2/5.

NOTE R Moonlight.

NOTE S Limit = 9.4.

NOTE T 15' coma, averted vision.

NOTE U 8.5' coma, averted vision.

NOTE V 9.5' coma, averted vision.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
19.095	830294	0.25	0.203	N	8	128	4	5.0	1	Hannon,J	A
19.102	830295	0.99	0.15	N	5	30	5		1	Zanette,D	B
19.157	830296	0.75	0.318	N	8	40	73	5.5	1	Hathaway,W	
19.767	830297	1.2	0.080	B		20	12	5	1	Knain,E	C

NOTE A Central condensation observed offset.

NOTE B It's see perfectly circular. [sic]

NOTE C Not sure of tail. Movement among stars clearly seen.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
19.090	850280	0.305	1.5	0.203	6.8 x 4.5	1.00	Kodak 2415		Y	X	239/P	1	Sabia,J.D	A
19.150	850282	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	S	5/P	1	Dilsizian,R	
19.167	850283	0.135	2.8			5.00	Kodak Tri-X	400/	N	O	9/P	1	Valeriani,G	
19.179	850284	0.135	2.8			14.50	Kodak Tri-X	400/	N	O	10/P	1	Valeriani,G	
19.293	850285	0.135	2.8		15.2 x 10.2	4.00	Kodak Tri-X		N	C	621/N	1	Lazerson,H	B

NOTE A Moon 20 deg. above western horizon.

NOTE B (Observer's image identifier is 16-21. Ed.) "Push" processed to 800 ASA.

DATE: 20 NOV 1985

DATE: 20 NOV 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

Date(UT)	AON#	al	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
20.02	812209	6.5	B	E	14	5			0.05	B		7				Mormil,V	
20.076	812210	8.0	S	57	1.8	7			0.203	N	6	101	5.3M	Y	1	Hudak,D.M	
20.194	812211	7.0	B	57	17	3			0.05	B		7	5.0M	Y	8	Chmielewski,W	A
20.197	812212	6.0	S	56		5			0.318	N	8	40		Y	1	Hathaway,W	
20.240	812213	7.3	S	57	30	3			0.035	B		7	4.5C	Y	1	Gronok,J.D	B
20.240	812214	7.5	S	57	3.0	4			0.254	N	5.6	55	5	Y	2	Swavely,M.E	C
20.30	812215	6.9	M	E	18	5			0.04	B		12				Maydik,A	
20.36	812216	5.5	M	57, 58	11	7			0.080	B		20	6.0	Y	6	Morris,C.S	
20.36	812217	5.4	M	57, 58	13	6			0.050	R		8	6.0	Y	6	Morris,C.S	D
20.365	812218	7.1	B	57		3			0.050	B		10	6.0C	Y	1	Stapleton,J	E
20.403	812219	6.7	M		5	4			0.18	N	10	55	3.5M	Y	1	Kato,T	F
20.41	812220	5.3	S	AA	14	2			0.080	B		20				Green,D.W.E	G
20.45	812221	6.1	M	57					0.05	B		10	6.5	Y	2	Hale,A	
20.451	812222	6.5	M	57	5	6			0.035	B		7	5	Y	1	Watanabe,A	
20.451	812223	6.2	M	57	5	6			0.035	B		7	5	Y	1	Watanabe,H	
20.46	812224	5.9	B	57					EY				6.5	Y	2	Hale,A	
20.46	812225						0.67	105	0.20	N	6	61	6.5	Y	2	Hale,A	
20.483	812226	7.1	B	57					0.07	B		10	4.5M	Y	1	Date,M	
20.490	812227	6.2	S	57	11	3			0.050	B		10		Y	1	Tregaskis,T.B	H
20.50	812228	5.3	S	57					EY				5.8M	Y	1	Lovejoy,T	
20.521	812229	7.3	B	57					0.05	B		7	3.0MC	Y	1	Hasegawa,T	
20.541	812230	6.5	S	57	9.0	2			0.050	B		12	5.5	Y	1	Batza,H	
20.59	812231	6.7	S	57	8				0.045	R	6	13	3.5	Y		Jones,A	I
20.59	812232					7			0.317	N	5	86		Y		Jones,A	
20.590	812233	7.9	S	57	1.3				0.15	N	6	32	3.6C	Y	1	Nakatsuki,M	
20.615	812234	6.5	M	57	19.5	6	0.32	100	0.1	N	10	40	6.0	Y	1	Ichikawa,K	
20.63	812235	7.7	B	57	11	7			0.15	N	8.6	41	5.5	Y	2	Makino,J	
20.65	812236	6.8	S	57	20	6			0.15	N	5.3	32	6.0	Y	2	Oka,A	
20.65	812237	6.6	M	56	13	7	0.25	100	0.08	B		11	6	Y	1	Mitsuma,S	J
20.65	812238	6.5	S		11	7			0.08	B		11	4.0	N	1	Momose,M	
20.65	812239	6.9	M	57	20	6			0.080	B		11	5.5	Y	3	Watanabe,N	
20.66	812240	6.5	S	57	12	7			0.07	B		10	5.5	Y	1	Yasuki,M	
20.669	812241	7.5	M	57	2.5	6			0.12	N	6	36	4.0	Y	1	Kishi,A	
20.70	812242	6.4	B	M					0.05	B		7				Martis,A	
20.72	812243	6.0	B	AAVSO					0.11	R						Churyumov,K	
20.73	812244	6.9	S	AAVSO	8	5	0.17		0.13	N	6.3	24	5.5	Y	1	Hayashi,A	
20.76	812245	6.2	S	57	12.1	6			0.05	B		7	5.0	Y	1	Kanai,K	
20.76	812246	6.6	B	57	12.1	5			0.05	B		7	5.0	Y	1	Kanai,K	
20.79	812247	6.0	B	E	10	6			0.05	B		7				Mormil,V	
20.896	812248			57	10	6			0.089	R	5.5	18	4.3	N	1	Ventura,F	K
20.902	812249	6.0	S	56	18	7			0.050	B		7	5.0MC	N	5	Meozzi,D	
20.92	812250	7.0	B	57	4	4			0.08	B		20	5.0	Y	1	Spell,J	L
20.929	812251	6.8	M	57		2			0.050	B		10	4.2MC	Y	1	Losada,R	
20.938	812252	6.5	B	57	13				0.08	B		15		N	2	Losada,R	
20.96	812253	6.8	B	M	5		0.2		0.08	R		29				Nestorov,Yu	
20.976	812254	6.1	M	57	13	5			0.05	B		12	5.5	Y	1	Tanti,T	M

NOTE A Coma elongated to east.

NOTE B Exc. see.

NOTE C Coma diameter timings were made using the eyepieces' of the field of view and the drift method. [sic] During this procedure I was unable to use averted vision and therefore the timings reflect the size of brighter central "directly viewed" regions. I could see no outstanding features or major tail formation, however, there was a slight but distinct "fanning" visible towards the wester or following edge. [sic].

NOTE D Fan shaped tail suspected.

NOTE E In Aries, moon set.

NOTE F Very poor condition.

NOTE G Coma diameter approximate.

NOTE H Broken cloud and moon. Faintest star seen in instrument approximately 8.

NOTE I Drifting clouds.

NOTE J 9.5

NOTE K Coma size is lower limit. Moon.

NOTE L Faint aurora and fog.

NOTE M Seeing good, transparency good.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
20.241	830298	0.44	0.254	N	5.6	55,155	26	5	2	Swavely,M.E	A
20.286	830299	0.19	0.254	N	5.6	53, 60,120	15	5.9	1	Knisely,D	B
20.938	830300		0.080	B		15			1	Losada,R	C

NOTE A (Two drawings included. The first at 55x should be considered primary (0.44"/mm). The second at 155x was included to better show coma shape. The coma showed a slight but distinct fanning-out towards the following or western edge. Timings of the coma by drift method measured only the brighter central area where averted vision was not needed and resulted in timings of 13 seconds average time or 3.04 arc min. The outer edges of the coma in the drawing were too faint to measure and are shown here as seen by averted vision. The second drawing is uncertain in scale and included as a better indication of coma size and shape as observed with direct and averted vision.

NOTE B Hint of very faint broad tail. Central condensation magnitude 9? Hint of coma brightening at PA 80 about 5' arc from nucleus. Nucleus centered in coma (stellar). City lights reflecting off recent snowfall made observations difficult. Tail? at PA 135.

NOTE C (Duration not indicated. Time of observation is assumed to be end time. Ed.)

DATE: 21 NOV 1985

DATE: 21 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	
21.021	812255	6.1	M	57	17	5			0.05	B		12	5.5	Y	1	Tanti,T	A	
21.021	812256	5.5		57		6			0.106	N	4.4	16	4.6	Y	1	Williams,D.J	B	
21.028	812257	7.1	M	SC2000	7.5	6			0.08	B		11	5.7	Y	1	Fleet,R.W	C	
21.038	812258	7.2	M	SC2000	6.0	6			0.075	R	16	50	5.7	Y	1	Fleet,R.W	D	
21.049	812259	7.1	M	SC2000	5.0				0.15	N	4	50	5.6	Y	1	Fleet,R.W	E	
21.060	812260	6.0	B	57	20	6			0.035	B		7	4.5	Y	1	Stephan,C	F	
21.062	812261	6.1	B	57	7.7	9			0.15	N	8	30	4.6	N	1	McBride,P	G	
21.069	812262	7.4	B	57	5.8	3			0.127	SC	10	50	4.3	Y	1	Roussem,J	H	
21.07	812263	6.4	M	SC 2000	5	7			0.03	R		6	5.5	Y	1	Granslo,B.H		
21.07	812264				5	7			0.203	SC	10	80	5.5	Y	1	Granslo,B.H		
21.07	812265	5.2	S	AA	22	2			0.050	B		7				Green,D.W.E	I	
21.083	812266	6.0	S	56	3	1			0.152	N	8	135	5	Y	1	Lewis,D.E		
21.10	812267	6.4	B	56	14	8			0.080	B		20	4.5	Y		Kronk,G		
21.101	812268	7.1	M	56	55.4	3			0.06	B		20	4.3	N	1	de la Rosa Jr,A	J	
21.104	812269	6.5	S	56	10	6			0.203	SC	10	67	4.0	Y	1	Jacobs,T		
21.104	812270	5.7	M	AAVSO					0.050	B		10				O'Meara,S.J	K	
21.156	812271	6.2	M	56	6	5			0.050	B		7	4.3	Y	1	Robertson,T		
21.232	812272	5.8	B	57		6			0.06	R		35	5	Y	1	Ward,A	L	
21.240	812273	6.2	S		10	5			0.080	B		11		Y	6	Pryal,J	M	
21.243	812274	7.2	S	57	31	3			0.035	B		7	4	CM	Y	1	Gronck,J.D	N
21.258	812275	6.9	B	56		6		110	0.152	N	4.5	45	6.0	Y	1	Troiani,D.M		
21.36	812276	5.3	M	57, 58	16	7			0.050	R		8	6.0	Y	15	Morris,C.S		
21.365	812277	5.8	S	56	13.9	8			0.075	R	12	32	5.5	Y	2	Franch,J		
21.406	812278	6.2	M	56	3.5	4			0.10	N	10	55	3.0M	Y	1	Kato,T	O	
21.413	812279	5.5	M	56	18	7	0.25	290	0.05	B		10	6.0	Y	2	Fabre,R	P	
21.54	812280	7.0	B	M	5.2	5			0.21	N		80				Knyazyuk,N		
21.563	812281	6.9	B	56					0.05	B		7	4.0M	Y	2	Kasegawa,T		
21.572	812282	6.5	S	56	9.0	2			0.050	B		12	5.2	Y	1	Batza,B		
21.60	812283	6.2	S	56	7.5				0.045	R	6	13	4.6	Y		Jones,A	Q	
21.601	812284	6.6	M	56	11.6	6	0.25	95	0.1	N	10	40	4.5	Y	1	Ichikawa,K		
21.608	812285	7.0	B	56					0.07	B		10	4.5M	Y	1	Date,M		
21.64	812286	5.9	B	E	15	5			0.05	B		7				Mormil,V		
21.67	812287	6.1	B	AAVSO	8				0.05	B		7				Golubev,V		
21.767	812288	6.9	B	56		3			0.05	B		10		Y	2	Frosina,A	R	
21.813	812289	5.9	B	56	11.2	5			0.050	B		7	4.5	N	1	Lunde,R	S	
21.868	812290				6	6			0.20	SC	10	50	5.3	Y	1	Bramseth,P.-J		
21.868	812291	6.5	S						0.05	B		10	5.3	Y	1	Bramseth,P.-J		
21.92	812292	5.5	B	AAVSO					0.03	B		3				Churyumov,K		
21.946	812293	6.8	M	56					0.050	B		10	3.7MC	Y	1	Lozano,L		
21.990	812294	6.3	S	Y TAU	32.0	5			0.08	B		30	4.5	Y	1	Campos,J	T	

NOTE A Seeing good, transparency excellent. Clouds.  
 NOTE B Clear, first quarter moon.  
 NOTE C 16' coma, averted vision.  
 NOTE D 11' coma, averted vision.  
 NOTE E 10' coma, averted vision.  
 NOTE F Haze and moon, sky not very clear.  
 NOTE G 8 mag. nucleus.  
 NOTE H Moonlight interfering.  
 NOTE I Coma diameter approximate.  
 NOTE J Street lights, moonlight.  
 NOTE K Jets at PA 90 deg. and PA 180 deg.  
 NOTE L Some cloud.  
 NOTE M Near first quarter moon. (Observer gave limit as 9. Ed.)  
 NOTE N Coma approx. 50% times larger than 11/9 + noticeably brighter. Ex. see.  
 NOTE O Diffuse clouds.  
 NOTE P (PA value appears to be measured incorrectly. Ed.)  
 NOTE Q Comet low altitude.  
 NOTE R Limit = 9.1.  
 NOTE S Moon interferes.  
 NOTE T Some haze.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
21.129	830301	0.38	0.203	N	6	61,116,183	10	6.0	1	Williams,J	A
21.135	830302		0.060	B		20		99	4.3	1	de la Rosa Jr,A
21.273	830303	2.5	0.30	R	15	161	25	5.5	2	Franch,J	B
21.295	830304		0.203	N	6	58	13	6.0	1	Troiani,D.M	C
21.872	830305		0.20	SC	10	50	30	5.3	3	Bremseth,P.-J	D

NOTE A The center of the coma was definitely star-like. The coma appeared to slightly brighten towards the center. No further detail could be seen. Moonlight interfered with the observation.  
 NOTE B Tail PA 82. The comet's coma had begun to assume a strongly parabolic shape and had swelled in size to about 14'. The nucleus was seen to be very bright and not completely starlike. Only the first few minutes of arc of a gas tail were observed stretching east. Halley's total estimated magnitude was 5.8.  
 NOTE C Condensation in coma at PA 180 deg. Rays at PA 90 deg. DC = 5.5.  
 NOTE D Very special-looking Halley. Round coma, but with central condensation out off-center, to northwest. The northwestern part of coma was weak. The brightest parts of coma was between PA 95 and PA 180. A brighter "streak" against PA 180. Another structure against PA 95. A very weak "structure" was observed against PA 40. The central cond. was about 13-14 arc sec. in diameter. [sic]

DATE: 22 NOV 1985

DATE: 22 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	
22.00	812295	6.7	B	M	4				0.08	R		29				Nesterov,Yu		
22.028	812296	6.9	M	SC2000	8.5	6			0.08	B		11	5.7	Y	1	Fleet,R.W	A	
22.030	812297	6.4	S	56	13	1			0.05	B		10	6	C	N	House,R.R		
22.073	812298	6.0	M	57		4			0.05	B		12	3	Y	1	Tanti,T	B	
22.10	812299	4.9	S	AA	17	4			0.050	B		7				Green,D.W.E	C	
22.104	812300	6.0	B	56	20	6			0.035	B		7	4.5	Y	1	Stephan,C	D	
22.108	812301	6.1	S	56	17	3			0.035	B		7	5.3M	N	3	Morrison,W	E	
22.15	812302	6.2			9				0.034	B		9			1	Pereira,A	F	
22.16	812303	5.7		56	17	4			0.040	B		8	5.5	Y	1	Keen,R	G	
22.198	812304	6.8	B	56	18	14.5		110	0.05	B		7	5.5	Y	9	Chmielewski,W		
22.42	812305	5.3	M	57, BSC	16	6			0.050	R		8	6.0	Y	14	Morris,C.S		
22.43	812306	5.5	M	57, BSC	13	7	0.33	75	0.080	B		20	6.0	Y	14	Morris,C.S	H	
22.4340	812307	5.3	M	56	24	6	0.75	86	0.05	B		7	6.4	Y	5	Cook,A.J		
22.469	812308	6.5	S	56	10	2			0.050	B		12	5.0	Y	1	Batza,H	I	
22.497	812309	6.1	S	56	11	2			0.050	B		10		Y	1	Tregaskis,T.B	J	
22.503	812310			56	9.4	4			0.152	N	8	64		Y	1	Tregaskis,T.B	K	
22.519	812311			56	1.9	5	0.5	70	0.32	N	8	150		Y	1	Tregaskis,T.B	L	
22.65	812312	5.8	B	AAVSO					0.08	B		20				Churyumov,K		
22.743	812313	6.5	B	56	4	5	0.06		0.08	B		20	5	M	Y	2	Knain,E	M
22.83	812314	5.9	B	E	15	5			0.05	B		7				Mormil,V		
22.87	812315	5.9	B	E	15	5			0.05	B		7				Mormil,V		
22.91	812316	5.7	B	AAVSO					0.08	B		20				Churyumov,K		
22.92	812317	6.7	B	M	5				0.07	N	8	33				Bezrodny,A		

NOTE A 14' coma, averted vision.

NOTE B Seeing good, transparency fair/poor. Clouds.

NOTE C Coma diameter approximate.

NOTE D Moon approx 70% sunlit. No tail visible in 7x35's.

NOTE E Moon nearby.

NOTE F (Observer gave limit as 9.2. Ed.)

NOTE G Modified Sidgwick method used.

NOTE H Main tail was stubby and ill-defined. Sunward tail appeared to wrap around the southern part of the coma and join with the main tail.

NOTE I Moon.

NOTE J Clear and moonlight. Faintest star seen in instrument 8.3.

NOTE K Clear and moonlight. (Observer gave limit as approximately 11.5. Ed.)

NOTE L Doubtful tail; length and PA uncertain. Bright moonlight. (Observer gave limit as approximately 13. Ed.)

NOTE M Moonlight.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
22.116	830306	3	0.050	B		7	5	6.4	5	Cook,A.J	A
22.755	830307	1.2	0.080	B		20	15	5	1	Knain,E	B

NOTE A Tail very diffuse and ghostly.

NOTE B Interfering moonlight. Coma diffuse. Conspicuous tail.

DATE: 23 NOV 1985

DATE: 23 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
23.01	812318	6.4			8				0.034	B		9			1	Pereira,A	A
23.031	812319	6.5	M	SC2000	8.5	6			0.08	B		11	5.6	Y	1	Fleet,R.W	B
23.111	812320	5.9	M	57		4			0.05	B		12		Y	1	Tanti,T	C
23.118	812321	7.0	M	56	6	3			0.09	M	11	56	4.5	Y	3	Westlund,M	
23.13	812322	5.5	M	56	15	6			0.06	R	4	10	5.5	Y	1	Granslo,B.H	
23.14	812323	5.4	S	57, 56	18	3			0.080	B		11	4.5	Y	1	Spratt,C.E	D
23.16	812324	6.3	M	56	15	7			0.080	B		20	4.5	Y	1	Kronk,C	E
23.198	812325	8	B	56		5			0.08	B		11	4	Y	1	Gorski,L	
23.493	812326	6.1	S	56	12	2			0.05	B		10		Y	1	Tregaskis,T.B	F
23.500	812327	6.5	S	56	10	2			0.050	B		12	4.5	Y	1	Batza,H	G
23.507	812328			56		6			0.32	N	8	150		Y	1	Tregaskis,T.B	H
23.60	812329	8.6	B	SAO	10	5			0.15	N	5.7	34	4.0	Y	7	Tanikawa,M	I
23.632	812330	7.0	M	56	3.5	6			0.12	N		6	3.5M	Y	1	Kishi,A	
23.962	812331	6.8	M	56	6	3			0.09	M	11	56	3.5M	Y	3	Westlund,M	J
23.99	812332	5.0	S	AA	15	6			0.080	B		20				Green,D.W.E	K

NOTE A (Observer gave limit as 8.8. Ed.) Moonlight.

NOTE B 16' coma, averted vision.

NOTE C Seeing good, transparency excellent. Clouds.

NOTE D Moon. DC approximate.

NOTE E Mostly cloudy.

NOTE F Bright moonlight. (Observer gave limit as approximately 8.0. Ed.)

NOTE G Moon.

NOTE H Bright moonlight. (Observer gave limit as approximately 13. Ed.)

NOTE I Core mag. (observer's symbol believed to mean "approximately equal to", Ed.) 12.

NOTE J Bright moon.

NOTE K Coma diameter approximate.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
23.113	830308	1.6	0.090	M	11	56	15	4.5	3	Westlund,M	
23.61	830309	1.36	0.15	N	5.7	34, 92	14	4.0	2	Tanikawa,M	A
23.957	830310	1.6	0.090	M	11	56	15	3.5	3	Westlund,M	B

NOTE A Core (observer's symbol believed to mean "approximately equal to", Ed.) 12.

NOTE B Bright moon.

DATE: 24 NOV 1985

DATE: 24 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
24.00	812333	5.7	S	AAVSO	10	5			0.050	B		10				Bortle,J.E	A
24.00	812334	5.8	S	AAVSO	7.5	5			0.080	B		20				Bortle,J.E	A
24.042	812335	5.9	M	56	10.6	4			0.05	B		7	3.9	Y	1	DeYoung,J.A	B
24.049	812336	6.7	M	SC2000	4.3	6			0.08	B		11	4.5	Y	1	Fleet,R.W	C
24.313	812337	6.4	S		7	3			0.080	B		11	8	Y	3	Pryal,J	D
24.525	812338				5	6	0.10	70	0.10	N	10	55	4.0M	Y	1	Kato,T	
24.548	812339	5.7	M	56	6				0.030	B		8	4.0M	Y	1	Kato,T	
24.552	812340	7.2	B	56					0.07	B		10	4.0M	Y	1	Dats,M	
24.597	812341	6.1	B	56	15	4			0.060	B		10	3.0M	Y	1	Moriya,M	E
24.70	812342	6.0	B	AAVSO					0.15	N						Korneev,V	F
24.83	812343	5.8	B	M	2	3			0.07	N	8	33				Shitikov,A	

NOTE A Moonlight.

NOTE B Moon close to field.

NOTE C 10' coma, averted vision, low altitude.

NOTE D Waxing gibbous moon approximately 20 deg. from Halley.

NOTE E Seeing 3/5.

NOTE F Brightness flash (851124.72).



DATE: 25 NOV 1985

DATE: 25 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
25.14	812344	4.8:	S	AA	12	3			0.080	B		20				Green,D.W.E	
25.57	812345	6.8	S	AAVSO	4	4			0.13	N	6.3	24	3.5M	Y	1	Hayashi,A	A
25.573	812346	6.3	M	56	10.7	6	0.33	90	0.1	N	10	40	5.0	Y	1	Ichikawa,K	
25.80	812347	7.4	S	DCS 4B	2	7		190	0.254	JB	6	72	3 MC	Y	5	Bus,E.P	B
25.847	812348				3				0.07	B		16	5.0CM	Y	1	Taylor,M.D	C
25.906	812349	5.4	S	56	9.9				0.08	B		15	2.6M	N	1	Hurst,G.M	
25.94	812350	5.0	S	AA	12	6			0.080	B		20				Green,D.W.E	A

NOTE A Coma diameter approximate.

NOTE B Coma asymmetric in PA approximately 190 deg. Indicated tail PA is approximate.

NOTE C Moon - bright sky!

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
25.781	830311	1.6	0.090	M	11	56	10	3.0	3	Westlund,M	A

NOTE A Very bright moonlight.

DATE: 26 NOV 1985

DATE: 26 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
26.2910	812351	8.6	S	SAO	3	3			0.152	N	8.0	76	4.6		3	Machholz,D	A
26.458	812352	7.1	M		3.5	5			0.10	N	10	55	4.0M	Y	1	Kato,T	
26.674	812353	7.1	S	55					0.12	N	6	36	1.0M	Y	1	Kishi,A	
26.87	812354	7.0			2	4			0.08	B		20	4.0M	Y	1	Spell,J	B
26.920	812355	5.7	S	55	20	3			0.050	B		7	4.8MC	N	5	Meozzi,D	
26.975	812356	5.4	S	55	7.5	5			0.08	B		15	4.0M	Y	1	Haver,R	C
26.990	812357	5.4	S	55	8.0	4			0.05	B		7	4.0M	Y	1	Haver,R	

NOTE A 98.2% moon 15 deg. away.

NOTE B Full moon, bright skies.

NOTE C Nucleus of mag. 8. (Translated by IEW staff. Ed.)

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
26.828	830312	0.08	0.40	N	5	254	15	3.5	2	Merlin,J.-C	A

NOTE A Jet at PA 29; jet at PA 35; jet at PA 224, then curved toward PA 281, about sunward. Full moon at 25 deg. from the comet, only inner coma visible.

DATE: 27 NOV 1985

DATE: 27 NOV 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
27.067	812358	8.3	B	55	15	3			0.203	R	13	85	4.8	N	1	Fox, J.H	A
27.389	812359	6.5	M	55	5	6			0.035	B		7	5	Y	1	Watanabe, A	
27.43	812360	5.1	S	55					0.08	B		15	5.8M	Y	1	Lovejoy, T	
27.491	812361	6.5	M		4	4			0.10	N	10	55	3.0M	Y	1	Kato, T	B
27.512	812362	6.0	S	55		1			0.05	B		10		Y	1	Tregaskis, T.B	C
27.517	812363			55	6	3			0.152	N	8	64		Y	1	Tregaskis, T.B	D
27.517	812364			55		1			0.03	R	7	8		Y	1	Tregaskis, T.B	E
27.747	812365	6.6	S	55	6	3	0.1	55	0.07	B		16	5.0CM	Y	1	Taylor, M.D	F
27.752	812366	5.8	S	55	12	3			0.08	B		11		N	1	Gainsford, M.J	G
27.76	812367	5.6	S	55					0.08	B		10	4.5		1	Shanklin, J.D	
27.762	812368	6.0	S	55		5			0.25	N	6	60	3.5	N	1	Gainsford, M.J	G
27.81	812369	7.2	S	DCS 4B	2.5	7			0.254	JB	6	73	4.5MC	Y	5	Bus, E.P	
27.819	812370	5.2	S	56	12.0	6			0.05	B		10	3.9M	N	1	Hurst, G.M	
27.833	812371	5.9	B		2.5	3			0.07	B		20	3 M	N	1	Fillmon, E	G
27.836	812372				10.0	7			0.08	B		15	3.9M	N	1	Hurst, G.M	
27.84	812373	5.0	S	DCS 4B	2.5	7			0.254	JB	6	72	4 MC	Y	5	Bus, E.P	
27.892	812374				4	6			0.127	SC	10	50	3.9	N	4	Foulkes, M	G
27.917	812375				3	6			0.356	SC	10	100	3.9	N	4	Foulkes, M	G
27.927	812376	6.8	S	55	7.5	3	0.1	55	0.07	B		16	5.0CM	Y	1	Taylor, M.D	H
27.93	812377	4.9	S	55, 56	15	1			0.05	B		10	4 MC	N	9	Bouma, R.J	I
27.944	812378	6.5	S	55	9	5			0.065	B		12	3.9	N	4	Foulkes, M	G
27.951	812379	5.6	S	55	14.2	5			0.050	B		10	5.1M	Y	3	Abbott, J	J
27.958	812380	5.1	S	56	15				0.05	B		10	3.9M	N	1	Hurst, G.M	K

NOTE A Strong moonlight. SAO 092667 comparison star.

NOTE B Diffuse cloud; condensation mag. = 10.

NOTE C Full moon. Scattered cloud. (Observer gave limit as approximately 8. Ed.)

NOTE D Full moon. Scattered cloud. (Observer gave limit as approximately 11. Ed.)

NOTE E Comet just visible. Full moon. Scattered clouds. (Observer gave limit as approximately 7. Ed.)

NOTE F Seeing Antoniadi II. Moon full - bright.

NOTE G Full moon.

NOTE H Seeing Antoniadi III. Moon full - bright sky!

NOTE I Coma diameter is approximate lower limit. Comet definitely seen with naked eye.

NOTE J Comparison stars 6.8, 6.3, 5.2. Full moon.

NOTE K Coma diameter approximate.

SUB-NETWORK: DRAWING

Date(UT)	ACON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
27.066	830313	0.6	0.203	R	13	85	10	4.8	1	Fox, J.H	A

NOTE A Boundary of coma indistinct due to interfering moonlight.

DATE: 28 NOV 1985

DATE: 28 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	
28.007	812381	6.2:	M		5.5	1			0.10	N	8.6	21	5.8	N	1	Gaucher,C	A	
28.125	812382	6.0	S	55	3	2			0.152	N	8	135	5	Y	1	Lewis,D.E		
28.14	812383	5.3:	S	55					0.050	R		8	3.0M	Y	6	Morris,C.S	B	
28.488	812384	5.9	S	55	6				0.05	B		10		Y	1	Tregaskis,T.B	C	
28.510	812385	6.6	S	55		6			0.05	B		10	4.5M	Y	1	Williams,P.F	D	
28.514	812386	6.0	S	55	13	3			0.050	B		12	5.0	Y	1	Batza,H	E	
28.542	812387	7.0	M	55	5	7			0.060	R	15	45	4.3M	Y	1	Purvinskis,R		
28.559	812388	6.2	B	55	10	5			0.060	B		10	2.0M	Y	1	Moriya,M	F	
28.660	812389	5.3	M	55	12	6			0.070	B		10	3.5M	Y	1	Kato,T	G	
28.667	812390	6.8	S	55	1.4	4			0.08	R	11.4	46	3.6M	Y	1	Wakatsuki,M		
28.698	812391	6.4	B	55	15.4	5			0.165	N	8.7	57		M	Y	1	Bohme,D	
28.722	812392	6.3	B	SAO	6.5	4			0.125	R	6	17	4.0	Y	1	Guthier,O	H	
28.729	812393	6.4	B	SAO					0.080	B		20	4.0	Y	1	Guthier,O		
28.73	812394	5.3	S	55					0.08	B		10	4.0		Y	1	Shanklin,J.D	
28.73	812395	5.7	S	AA	9	5			0.080	B		20	4.0M	N	1	Schmeer,P		
28.730	812396	6.0	M	55	25	6			0.103	R	13	25	3.6	Y	1	McBain,J		
28.736	812397	6.5	B	55	30	12			0.22	N	4	35	5.6	Y	2	Vincent,J	I	
28.747	812398	7.4	S	55	3.8	7			0.08	R	15	30	4.0	N	2	Storey,D	J	
28.75	812399	5.9	S	DCS 4B	10	6			0.050	B		10	4.5CM	Y	1	Wils,P		
28.760	812400	6.9	B	55		2			0.07	B		10	3.5	N	1	Deconinck,M	K	
28.760	812401	7.0	S	55	6	5			0.114	N	3.7	47	3.9CM	N	3	Gomez,T.L	L	
28.76	812402	6.0:	B	55	6	5			0.100	B		14	3.5	N	1	Kraling,W	M	
28.767	812403	5.6	S	55	20	5			0.050	B		7	4.5MC	N	5	Meozzi,D		
28.77	812404	5.2	S	DCS 4B	15	5			0.050	B		10	5	MC	N	1	van Loo,F.R	
28.79	812405	7.0	B	55	12	5			0.080	B		20		CM	N	1	Jannink,D.W	N
28.792	812406	5.1	M	55	25	7			0.05	B		20		N	4	Gallego,J		
28.813	812407	6.1	B	C2		4			0.08	B		10	4.6M	N	1	Kral,M		
28.813	812408	4.9	S	55	15.0	7			0.05	B		10	4.8	Y	1	Hurst,G.M		
28.816	812409	6.2	B	C2		7			0.08	B		10	4.4M	N	1	Elias,P		
28.822	812410				15	7			0.08	B		15	4.8	Y	1	Hurst,G.M	O	
28.825	812411	6.0	S	55	5.8	4			0.08	B		11	3.9	Y	1	Gainsford,M.J	D	
28.832	812412	6.0	S	55	3.7	6			0.25	N	6	60	3.9	Y	1	Gainsford,M.J	D	
28.833	812413	10.5:	S	55					0.15	N	6.6	100		Y	1	Dal Santo,M	P	
28.837	812414	5.3	S	55	13.0	5			0.050	B		7	4.0	N	1	Lunde,R	Q	
28.858	812415	5.7	S	55	9.6	6			0.050	B		10	4.9M	Y	3	Abbott,J	R	
28.865	812416		S	55	7	8			0.080	R	7.5	17	4.0M	N	1	Li Causi,G	S	
28.865	812417		S	55	5	4			0.080	R	6.3	31	3.0M	N	2	Richert,M	T	
28.896	812418	5.1	S	55	12	7			0.065	B		12	4	N	5	Foulkes,M	K	
28.903	812419	6.0	S	55	6	6			0.060	R	12	25	4.1	N	2	Moeller,M	U	
28.906	812420	6.3	S	55	4	6			0.100	B		14	4.5	Y	2	Weissferdt,F	V	
28.910	812421	6.0	S	55	8	5		220	0.08	B		15	3.7	Y	1	Dietrich,M	W	
28.917	812422	5.6	S		30	6			0.20	SC	11	50	4.5M	Y	3	Parasio,R		
28.93	812423	4.9	S	DCS 4B	18	4			0.040	B		7	4.5MC	Y	5	Bus,E.P	X	
28.965	812424	6.1	B	55	6.6	6			0.050	B		10	5.0M	N	1	Rossi,L		
28.965	812425	6.0	M	55					0.050	B		10			1	Rossi,L		
28.98	812426	4.5	S	DCS4B5A	15	4	0.33	70	0.046	R	4	8	5	M	Y	1	van de Weg,R.L.W	Y
28.990	812427	6.3	B	55	15	4			0.05	B		7	5.0C	Y	10	Chmielewski,W		

NOTE A Coma diameter approximate.

NOTE B Very poor conditions.

NOTE C Bright moon. Clear. (Observer gave limit as approximately 8.5. Ed.)

NOTE D Full moon.

NOTE E Haze.

NOTE F Seeing 2/5.

NOTE G Diffuse cloud.

NOTE H Beginnings of tail. (Translated by IHW staff. Ed.)

NOTE I Moon up but shrouded by bank of heavy cloud. Comparison stars just above track.

NOTE J Full moon risen. High cirrus towards end of observation.

NOTE K Moon.

NOTE L Drawing 1.

NOTE M Coma diameter and DC approximate. Moonlight.

NOTE N Telescopic limit is 8.

NOTE O Coma diameter approximate.

NOTE P Moon (full). Haze. Central condensation magnitude.

NOTE Q Strong moon.

NOTE R Comparison stars 5.5, 6.3, 5.2. Full moon + 1 day.

NOTE S Magnification approximate.

NOTE T Moonphase: 1 day after full moon. (Translated by IHW staff. Ed.)

NOTE U Moon, hazy.

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

NOTE W Tail length 8x12 arc min. Moon. (Observer indicated "A" method [Argelander?]. Ed.)

NOTE X Comet visible in 3x18 binoculars.

NOTE Y In 12x60 binoculars, DC = 7.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
28.651	830314		0.08	R	11.4	101	4	3.6	1	Wakatsuki,M	
28.655	830315		0.08	R	11.4	33	5	3.6	1	Wakatsuki,M	
28.726	830316	0.06	0.125	N	5.8	28, 40, 60	26	1.5	1	Riccabone,G	A
28.792	830317		0.050	B		20			4	Gallego,J	B
28.875	830318	0.5	0.080	R	7.5	14		4.0	1	Li Causi,G	C

NOTE A Diameter of the false nucleus is 31 arc sec. Magnification of 90 also used. Two drawings included. Moonlight and intense city lights interfered with the observation. (Translated by IHW staff. Ed.)

NOTE B Nearly full moon at 30 deg. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

NOTE C Full moonlight interfered with the observation. Comet had no tail. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 29 NOV 1985

DATE: 29 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	
29.113	812428	6.8	B	55	36	1			0.05	B		7	3.6			Lalret,R		
29.142	812429	6.2	S	55	30	8		230	0.32	N	4.4	56	4.8M	Y	1	Ariail,R.B	A	
29.28	812430	5.3		55	15	4			0.040	B		8	5.0	Y	1	Keen,R	B	
29.378	812431	5.4	M	55	12	5			0.030	B		8	5.5M	Y	1	Kato,T		
29.405	812432				8	7	0.17	90	0.10	N	10	55	5.5M	Y	1	Kato,T		
29.417	812433	4.7	S	55	30	7				EY			6.3	Y	1	Lovejoy,T	C	
29.424	812434	6.0	M	55	10	6			0.035	B		7	5	Y	1	Watanabe,A		
29.431	812435	6	M	55	10	6			0.035	B		7	5	Y	1	Watanabe,H		
29.469	812436	5.8	S	55		2			0.05	B		10		Y	1	Tregaskis,T.B	D	
29.476	812437			55	7.2	4			0.152	N	8	64		Y	1	Tregaskis,T.B	E	
29.510	812438	6.1	B	55	15	6			0.060	B		10	3.5M	Y	1	Moriya,M	F	
29.542	812439	6.8	M	55		7			0.060	R	15	45	4.8M	Y	1	Purviskis,R		
29.55	812440	6.0	M	55					0.05	B		7	4.5M	Y	2	Suzuki,K		
29.58	812441	6.0	B		13	5			0.05	B		10	4.0	N	1	Uda,K		
29.597	812442	6.5	B	55					0.07	B		10	4.5M	Y	1	Date,M		
29.606	812443	6.0	S	55	8	5	0.17	80	0.07	B		10	6.0	Y	1	Kobayashi,J		
29.625	812444	5.4	M	55	15	6			0.030	B		8	5.0M	Y	1	Kato,T		
29.630	812445				9	7	0.15	80	0.10	N	10	55	5.0M	Y	1	Kato,T		
29.67	812446	5.5	B	M						EY						Poroshin,A		
29.68	812447	6.4	B	E	13	4			0.05	R	8	20				Rudakov,G		
29.697	812448	6.8	B	55	18.7	5			0.165	N	8.7	57	M	Y	1	Bohme,D		
29.698	812449	5.9	B	CZ		4			0.08	B		10	4.5	N	1	Elias,P		
29.698	812450	5.8	B	CZ		4			0.08	B		10	4.5	Y	1	Janecek,V		
29.701	812451	6.0	B	CZ		4			0.08	B		10	4.5	Y	1	Kral,M		
29.715	812452	5.8	M	55	13	6			0.089	R	5.5	18	5.0	N	1	Ventura,F		
29.7152	812453	5.5	S		32	22	5		0.08	B		10	5.0M	Y	1	Znasik,M	G	
29.719	812454	6.4	M	CZ				76	0.10	B		25	5 C	Y	1	Valasek,V	H	
29.720	812455	6.5	B		5	4			0.080	R	6	12	4.0	Y	1	Lieder,F		
29.722	812456	7.5	M	CZ	20	4			0.10	B		25	5.7M	N	1	Silhan,J		
29.722	812457	5.3	M	55		6			0.05	B		12		Y	1	Tanti,T	I	
29.729	812458	6.0	M	55	15	11			0.08	B		11	6.0	Y	1	Fleet,R.W	J	
29.733	812459	5.8		55		9				EY			6.0	Y	1	Fleet,R.W		
29.733	812460	6.9	M	CZ	30	3			0.05	B		7	5.5M	Y	1	Silhan,J		
29.736	812461	5.7	M	AAVSO	12	7	0.55	100	0.063	R	13.3	52				Csukas,M		
29.736	812462	5.7	M	AAVSO	14	8	0.4	95	0.063	R	13.3	52				Kosa-Kiss,A	K	
29.74	812463	4.8	S	55, 56	15	3			0.05	B		10	4	MC	N	9	Bouma,R.J	L
29.74	812464	5.4	B	55	25	4			0.050	B		7	4.5	Y	2	Merlin,J.-C		
29.74	812465	6.4	B	E	14	4			0.05	R	8	20				Rudakov,G		
29.740	812466	6.1	B	55	35	12	5		0.25	SC	13.5	135	5.8	Y	2	Vincent,J	M	
29.743	812467	6.6	B	55		5			0.05	B		10	2.5M	Y	1	Bretschneider,H		
29.750	812468	5.5		55						EY			5.6	Y	1	McBain,J		
29.771	812469	5.5	B	55	20	3			0.04	B		8		Y	1	Morrisby,A	N	
29.78	812470	6.3	B	M	6				0.05	B		7				Konstantinov,S		
29.788	812471	6.5	B	CZ	15	5			0.10	O		25	6.0MC	Y	1	Micek,I		
29.799	812472	7.5	M	55	4.4	5	0.08	25	0.153	N	8.5	65		Y	2	Torres,E	O	
29.802	812473	6.5	M	CZ	12	4			0.10	B		25	4.5M	Y	1	Hajek,P		
29.851	812474	7.0	S	55	5	7			0.114	N	3.7	47	3.9C	Y	3	Gomez,T.L	P	
29.9166	812475	6.1	S	55	3.5	6			0.05	B		10	5.4MC		2	Franciosi,C	Q	
29.926	812476	5.9	S	55	7.5	5			0.060	R	12	25	4.3	N	2	Moeller,M	G	
29.962	812477	5.6	M	55	15.0	5			0.05	B		12	4.8M	Y	1	Knight,S	R	

NOTE A Possible ray.

NOTE B Modified Sidgwick method used.

NOTE C Tails seen through 20 cm reflector. PA of 0.5 deg. tail approximately 280. PA of second tail = approximately E.

NOTE D Hazy. (Observer gave limit as approximately 10. Ed.)

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

NOTE F Seeing 3/5.

NOTE G Moon.

NOTE H Adapted to the actual (rather bad, street lights visible) observing conditions.

NOTE I Seeing good, transparency excellent. Moon.

NOTE J 20"x16" coma, averted vision.

NOTE K 7.4 mag. nucleus. (Observer calls coma diameter value halo diameter. Ed.)

NOTE L Coma diameter is approximate lower limit. Comet definitely seen with naked eye.

NOTE M Comp. star 6.3 mag. at 1h 43m + 20 deg.

NOTE N Just visible to the naked eye.

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

NOTE P Stellar nucleus.

NOTE Q Veiled ski. [sic]

NOTE R Aurora Borealis.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
29.057	830319	0.203	SC	10		81			1	Lohvinenko,T.W	A
29.068	830320	0.203	SC	10		226			1	Lohvinenko,T.W	B
29.736	830321	0.063	R		13.3					Csukas,M	C
29.736	830322	0.89	R		13.3	52				Kosa-Kiss,A	D
29.800	830323	0.7	0.153	N	8.5	65	35		2	Cifuentes,E	E

NOTE A Comet Halley is seen here at a nuclear magnitude of 8.6 (check star: AGK 3+23 deg. 0199) and an integrated magnitude of 5.6 (check star: HR 69). There is a spectrum of the nucleus since the coma is too dim to be observed by the spectrum prism. It is interesting to note the large amount of yellow and green in the spectrum. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B A closer look at the comet gives a coma diameter of 108.60" and shows the comet leaning [sic] to the southwest; the PA of the tail is 30 east of north. The nucleus also seems to be elongated, ION TAIL??? (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C Tail 0.55 deg. at PA 100 and tail 0.55 deg. at PA 131. (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)

NOTE D 0.4 degree feature at PA 95. 0.3 deg. feature at PA 60. Schematic drawing. (Duration not indicated. Time of observation is assumed to be end time. Ed.)

NOTE E The northern tail is more visible and more important than the southern. The coma has extended to the east. Clearly, fuzzily, both for this area. [sic] The appearance of the comet is similar to that of a total solar eclipse. Clearly visible in binoculars (8x and viewfinder (15x)). (Observer gave limit as 11.8. Translated by IBW staff. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
29.542	850286	0.268	2.6	0.102	7.7 x 5.1	10.00	3M 1000	1000/	N	X	2/S	1	Richardson,C	
29.556	850287	0.268	2.6	0.102	7.7 x 5.1	10.00	Fuji	400/	N	X	1/S	1	Richardson,C	A

DATE: 29 NOV 1985

DATE: 29 NOV 1985

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
29.705	850288	0.750	6.3		2.7 x 1.8	11.00	ORWO	400/27	N	C	4/N	1	Znasik,M	B
29.795	850289	0.950	4.7	0.20	2.2 x 1.4	3.00	Kodak 2415		Y		5/P	1	Conrad,R	C

NOTE A Instrument is Meade Schmidt camera.

NOTE B Large format (11.8x8.6 cm) film used.

NOTE C City lights interfered with the observation; Vienna, from room!

DATE: 30 NOV 1985

DATE: 30 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	
30.021	812478	6.3	B	55	15	4			0.05	B		7	5.5C	Y	10	Chmielewski,W		
30.042	812479					6			0.05	B		20	5.5	Y	3	da Silva,L.A.L		
30.219	812480	5.3	M	55	19	7	0.33	290	0.05	B		10	6.0	Y	2	Fabre,R	A	
30.382	812481	5.7	B		13				0.035	B		7		N	2	Okada,M		
30.40	812482	5.8	S	55	25	7			0.15	N	5.3	32	5.0C	Y	1	Oka,A		
30.40	812483	5.7	M	55	13	6			0.08	B		11	4.5M	N	1	Mitsuma,S		
30.40	812484	6.0			25	5			0.12	B		20	5.5	Y	1	Washi,S	B	
30.417	812485				10	7	0.13	85	0.10	N	10	55	4.5M	Y	1	Kato,T		
30.420	812486	5.4	M	55	15	6			0.030	B		8	4.5M	Y	1	Kato,T		
30.422	812488	6	S	55	30	8	0.75		0.23		4.4	40	6.0	Y	1	Washi,I	C	
30.44	812489	5.9	B		20	5	0.42	75	0.07	B		10	5.0	Y	1	Kobayashi,J		
30.46	812490	5.8	M	55	8				0.05	B		10	5.0	N	1	Uda,K		
30.49	812491	6.2	S	AAVSO	8	5			0.080	B		11	4	C	N	1	Watanabe,N	
30.52	812492	5.8	S	AAVSO	10	3			0.13	N	6.3	24	4.5M	Y	1	Hayashi,A		
30.55	812493	5.8	B	M	10				0.07	B		10	4.5M	Y	1	Hayashi,A		
30.583	812494	5.8	S	55	8.5	2			0.05	B		7				Konstantinov,S		
30.597	812495	6.5	B	55					0.05	B		10		Y	1	Tregaskis,T.B	D	
30.604	812496	6.6	M	55	5	7			0.07	B		10	4.5M	Y	1	Date,M		
30.604	812497	7.0	S	55	5	4			0.153	N	10	56	4.0	Y	1	Ichikawa,K		
30.708	812498	6.1	B	55	15	4			0.060	B		33	3.0	Y	1	Iwaki,Y		
30.71	812499	4.6	S	55	20	3			0.05	B		10	2.0M	Y	1	Moriya,M	E	
30.71	812500	4.3	S	DCS4B5A	23	3			0.018	B		3	5	T	Y	2	Bouma,R.J	F
30.71	812501	6.0	B	E	20	3			0.03	B		8				Bus,E.P	G	
30.715	812502	5.5	S	55	17	6			0.05	B		10	6.0	Y	3	Zagaynov,V.A		
30.719	812503	5.0	S	55	25	4	0.5	120	0.050	B		7	5.4	Y		Vanin,G	H	
30.719	812504	5.8	S	55	8.5	6	1	80	0.152	N	5	44	5.1	Y	2	Luthen,H	I	
30.722	812505	5.2	S	55	23	5			0.050	B		7	5.4	Y	1	Moeller,M	J	
30.7271	812506	6.8	M	55	1.9	1.6	3	0.10	93	0.125	N	5.8	28	3.0C	Y	1	Meozi,D	
30.7285	812507	6.8	M	55	1.9	1.6	3	0.09	95	0.125	N	5.8	28	3.0C	Y	1	Riccabone,G	K
30.729	812508	6.9	M	55	3.0	6			0.090	R	14	46	5.0	Y	1	Riccabone,G	K	
30.729	812509	6.6			15	3			0.050	R	11	22	5.5	Y	1	Birth,G		
30.7299	812510	6.6	M	55	1.9	1.6	3	0.09	93	0.125	N	5.8	28	3.0C	Y	1	Kliche,J	
30.731	812511	6.6	M	55	1.9	1.6	3	0.10	100	0.125	N	5.8	28	3.0C	Y	1	Riccabone,G	K
30.740	812512	5.8	B	55	35	20	5		0.105	R	15	86	5.7	Y	2	Riccabone,G	K	
30.741	812513	6.0	B	55	30	20	5		0.25	SC	13.5	135	5.7	Y	2	Vincent,J	L	
30.743	812514	5.3	M	55	26	6			0.05	B		12		Y	1	Vincent,J		
30.743	812515	5.8	M	55	14	10	6		0.089	R	5.5	18	5.5	N	1	Tanti,T	M	
30.745	812516	5.5	M	55	35			0.33	135	0.065	B	20	5.6	Y	1	Ventura,F	N	
30.7465	812517	5.8	B	55	9	6			0.05	B		10	6.4	Y	1	McBain,J	O	
30.750	812518	6.2	B	55	4.5	5	0.17	80	0.330	N	4.5	59	6.5	Y	1	Franciosi,C	P	
30.750	812519	5.9	B	54,55		4			0.050	B		7	4.0C	N	1	Castino,R		
30.75	812520	6.0	B	E	20	3			0.03	B		8				Ruiz,J		
30.757	812521	5.9	M	55	18	13	6	1.0	76	0.08	B	11	6.0	Y	1	Zagaynov,V.A		
30.77	812522	5.8	B	M	5	5			0.08	B		11	6.0	Y	1	Fleet,R.W	Q	
30.77	812523	7	B	E	5	5			0.03	B		8				Tsygankov,D		
30.771	812524				10	6	0.6	74	0.07	N	8	15				Rudenko,S		
30.778	812525	5.8		55		9			0.22	N	EY	8	90	6.0	Y	1	Fleet,R.W	R
30.785	812526	6.3	M	55	10	6			0.075	R	16	50	6.0	Y	1	Fleet,R.W		
30.785	812527	5.9	M	55					0.04	B		12		Y	1	Fleet,R.W	S	
30.785	812528	6.2	B	55					0.050	B		7	6.0	Y	1	Henshaw,C	T	
30.788	812529	6.6			15	2			0.050	R	11	22	5.5	Y	2	Lavarack,N		
30.792	812530	5.8	B	55	12.6	7			0.050	B		7	5.0M	Y	1	Kliche,J		
30.802	812531	5.9	S	55	27.0	6			0.08	B		30	5.7	Y	2	Rossi,L		
30.814	812532	7.6	M	55	4.2	5	0.07	15	0.153	N	8.5	65		Y	2	Campos,J	U	
30.816	812533	5.7		55		9			EY			5.7		Y	2	Torres,E	V	
30.854	812534			55	8	6			0.114	N	7.9	45	4.0CM	N	1	Campos,J	W	
30.87	812535	6.5	B	AAVSO	8	3			0.08	R		8				Bernardis,A		
30.936	812536	6.6	M	55	2	1.7	0.05	130	0.125	N	5.8	28	4.0CM	Y	1	Shirokov,A		
30.938	812537	6.7	M	55	2	1.7	0.05	135	0.125	N	5.8	28	4.0CM	Y	1	Riccabone,G	K	
30.939	812538	6.6	M	55	2	1.7	0.05	125	0.125	N	5.8	28	4.0CM	Y	1	Riccabone,G	K	
30.940	812539	6.5	M	55	2	1.5	0.05	130	0.125	N	5.8	28	4.0CM	Y	1	Riccabone,G	K	
30.96	812540	5.4	B	55	25	4			0.050	B		7	5.0	Y	2	Riccabone,G	K	
																Merlin,J.-C		

NOTE A (PA value appears to be measured incorrectly. Ed.)

NOTE B (Observer indicated "Y" method. Ed.)

NOTE C Instrument is Wright-Schmidt. (Observer indicated "Y" method. Ed.)

NOTE D Bright moon and cloud. (Observer gave limit as approximately 8. Ed.)

NOTE E Seeing 2/5.

NOTE F Coma diameter is approximate lower limit.

NOTE G Also visible to the naked eye. DCS 6A also used for comparison stars. Coma diameter is lower limit.

NOTE H Tail PA approximate. Visible to naked eye.

NOTE I Misty, moonrise. Broad tail.

NOTE J High clouds.

NOTE K Intense city lights.

NOTE L Nucleus and/or central condensation visible.

NOTE M Clouds.

NOTE N Oval coma.

NOTE O Tail fan-shaped; E side longer.

NOTE P 10x50 Zeiss. No moon.

NOTE Q 25"x23" coma, averted vision.

NOTE R 18"x13" coma, averted vision.

NOTE S 15"x13" coma, averted vision.

NOTE T Haze. Comet seen naked eye.

NOTE U Tail not visible.

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

NOTE W Best seen with averted vision.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
30.720	830324	0.11	0.125	N	5.8	28, 40, 60	33	3.0	1	Riccabone, G	A
30.814	830325	0.7	0.153	N	8.5	65	35		2	Cifuentes, E	B
30.856	830326	0.25	0.356	SC	11	200			1	Verdenet, M	C
30.925	830327	0.07	0.125	N	5.8	29, 40, 60	63	4.0	1	Riccabone, G	D

NOTE A Region of greater luminosity at PA 97. Diameter of the nucleus measured with an illuminated reticle is 39 arc sec. Magnification of 90 also used. Two drawings included. Intense city lights interfered with the observation. (Translated by IHW staff. Ed.)

NOTE B Appearance similar to yesterday, 29/11/85. Pair (of tails) more uniform in intensity. The coma and tail have become more

DATE: 30 NOV 1985

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compact. Bright nucleus. (Observer gave limit as 11.8. Translated by IHW staff. Ed.)  
NOTE C Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Additional drawing submitted made with 11x80 binoculars (2.0"/mm). Ed.)  
NOTE D Area of greater luminosity at PA 244 deg. and at PA 290 deg. Diameter of the false nucleus is 37 arc sec. Magnification of 90 also used. Two drawings included. Moonlight and intense city lights interfered with the observation. (Translated by IHW staff. Ed.)



DATE: 1 DEC 1985

NETWORK: AMATEUR OBSERVATION

DATE: 1 DEC 1985

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	
1.00	812541	6.4	B	M	8	5			0.20	N	5	35				Tsvetkov,L		
1.021	812542	6.2	B	55	16	5			0.05	B		7	5.0C	Y	10	Chmielewski,W		
1.10	812543	4.9	M	55	22	6	1.0		0.050	R		8	6.0	Y	6	Morris,C.S		
1.104	812544	6.7	S		10	6			0.080	B		11		Y	3	Pryal,J	A	
1.11	812545	5.0	S	55, 54	30	5			0.080	B		11	4.9	Y	1	Spratt,C.E	B	
1.11	812546	5.3	S	55, 54	25	5	0.17	75	0.200	SC	10.0	64	5.0	Y	1	Spratt,C.E		
1.15	812547	5.2	54		12	4			0.040	B		8	5.5	Y	1	Keen,R	C	
1.15	812548	5.5	SKY&TEL		10.0	8			0.035	B		7	6.0	Y	1	McBride,P		
1.167	812549	6.7	S	55	32	4			0.203	SC	10	80	4 CM	Y	1	Gronek,J.D	D	
1.17	812550				10	5	0.33	120	0.32	N	4	40	5.5	Y	1	Keen,R		
1.403	812551	6.4	B	55	15	5			0.12	N	6	40	4.5C	Y	1	Hayashi,H		
1.403	812552	6.0	B	55	30				0.05	B		7		Y	1	Hayashi,H		
1.41	812553	5.5	S	54	16.7	6	0.5	80	0.05	B		7	5.0	Y	1	Kanai,K		
1.41	812554	6.1	B	54	16.7	6	0.5	80	0.05	B		7	5.0	Y	1	Kanai,K		
1.42	812555	6	B	M	7.7	5			0.21	N		80		Y	1	Knyazyuk,N		
1.438	812556	6.3	S	55, 54	1.7	1			0.05	R	16	20	5.5CM	Y	1	Feisheng,J		
1.45	812557	6.3	S	54					0.050	B		7	3.9C	Y	1	Matchett,V		
1.458	812558	6.3	B	54					0.05	B		7	4.0C	Y	1	Hasegawa,T		
1.47	812559	6.2	S	AAVSO	8	5			0.13	N	6.3	24	4.0M	Y	1	Hayashi,A		
1.521	812560	5.9	M	54	15.3	4			0.1	N	10	40	5.5	Y	1	Ichikawa,K	E	
1.53	812561	6.0	B	M	7.7				0.05	B		7		Y	1	Konstantinov,S		
1.547	812562	6.7	M	55	4.8	5			0.12	N	6	36	3.0	Y	1	Kishi,A		
1.57	812563	6.0	M	54, 55	12	6	0.25	70	0.08	B		11	5	M	N	1	Mitsuma,S	
1.599	812564	6.0	S	55	6	4			0.153	N	8.6	33	3.5	Y	1	Iwaki,Y		
1.637	812565	5.4	M	55	14	6			0.070	B		10	4.0M	N	1	Kato,T		
1.65	812566	6.0	M	E	15				0.03	B		8				Zagaynov,V.A		
1.67	812567	6.2	B	E	16				0.03	B		8				Zagaynov,V.A		
1.68	812568	6.4	B	55	4	4			0.08	B		20	4.5M	Y	1	Speil,J	F	
1.692	812569	6.4	M	54		4			0.066	R	15.2	30	5.0T	Y	1	Gora,D		
1.705	812570	6.2	M	54	14	5			0.08	B		11	5.0	Y	1	Gubo,H		
1.708	812571	6.2	M	55, 54					0.06	R	4.5	10	3.6C	Y	1	Chodorowski,F		
1.71	812572	5.9	B	AA	23	5			0.050	B		7	5.5	N		Schmeer,P		
1.71	812573	5.8	B	M					0.08	B		40				Palko,Yu		
1.715	812574		M		10	3			0.064	R	12	32		Y	1	Chodorowski,F		
1.7187	812575	5.5	S		30	23		73	0.08	B		10	4.8	Y	1	Znasik,M	G	
1.722	812576	5.9	B	54	10.6	3			0.10	B		14	5.0	Y	1	Hasubick,W		
1.726	812577	5.8	M	54	16	5			0.05	B		12	4.5	Y	1	Tanti,T	H	
1.729	812578	6.2			8	7			0.175	R	15	43	5.0C	Y	1	Marx,H	I	
1.73	812579	5.2	S	DCS 5A	15	5			0.050	B		10	5	C	N	1	Aerts,L	
1.73	812580	4.1	S	DCSSA6A	28	4			0.018	B		3	6.5	Y	2	Bus,E.P		
1.73	812581	5.3	S	DCS 5A	25	5			0.050	B		10	6	Y	3	Comello,G	J	
1.73	812582	5.4	S	DCS 5A	12	6			0.050	B		10	5	C	Y	1	Wils,P	
1.73	812583	5.3	B	54	25	3			0.060	B		9	6.5	Y	2	Merlin,J.-C		
1.73	812584	5.2	V	54	30	2				Y		6	5	Y	2	Merlin,J.-C		
1.74	812585	5.4	M	54	15.9	6			0.05	B		10	4.5	Y	1	Bottger,B		
1.740	812586				7	5	0.25	100	0.20	SC	10	50	6.0	Y	1	Bremseth,P.-J	K	
1.740	812587	6.3	S						0.05	B		10	6.0	Y	1	Bremseth,P.-J		
1.740	812588	6.0	B	55	11	5			0.050	B		10	5.7M	Y	1	Kalla,K	L	
1.74	812589	4.3	S	78	25	4	0.50	60	0.046	R	4	8		Y	1	van de Weg,R.L.W	M	
1.74	812590				20	15	0.50	60	0.060	B		12	6	Y	1	van de Weg,R.L.W		
1.74	812591	5.4	S	DCS 5A	9	7	0.25	83	0.050	B		10	6	C	N	1	van Loo,F.R	
1.74	812592	5.6	S	DCS 5A		6				Y		6	6	C	N	1	van Loo,F.R	
1.75	812593											30	4.5	Y	1	Bottger,B		
1.750	812594	6.4	S	55	3.6	6	12.7	55	0.15	N	8	14	46	5.0	Y	1	Birth,G	
1.75	812595	6.2		VAS 161	5	5	0.27	114	0.090	R	6	80	5.5	Y	1	Germann,R		
1.750	812596	6.2				3			0.205	N		15	5	Y	1	Nagele,A	N	
1.753	812597	5.9	B	55, 54	4.8	5	0.17	80	0.080	B		15		Y	1	Castino,R		
1.753	812598	5.4	54	SAO	20	6	1	80	0.330	N	4.5	59	6.5	Y	1	Kammerer,A	O	
1.753	812599	5.2	S	55	25	6			0.063	B		9	4.0	Y	1	Meorzi,D		
1.757	812600	5.6	M	AAVSO	14	8	0.4		0.050	B	13.3	7	6.0	Y	1	Kosa-Kiss,A	P	
1.757	812601	6.3	54		8	5			0.063	R		52				Knain,E	Q	
1.76	812602	6.5	B	54	14	4			0.08	B		20	5	M	Y	2	Jannink,D.W	R
1.760	812603	5.5	B	55	30	3	3	70	0.080	B		20		C	Y	1	Morrisby,A	S
1.770	812604	6.0	B	54		3			0.04	B		8		Y	1	Ruiz,J		
1.77	812605	7.0	B	M	4.5	4			0.050	B		7	4.0C	Y	1	Rudenko,S		
1.771	812606	6.5	B	54		5			0.07	N	8	35				Li Causi,G	T	
1.771	812607				9	5	0.4	90	0.080	R	7.5	17	4.5C	Y	1	Li Causi,G	U	
1.775	812608				6	5			0.208	N	5.8	48	4.0C	Y	1	Ruiz,J		
1.777	812609	5.8	B	54	8	6			0.05	B		10	6.2C	Y	2	Franciosi,C		
1.778	812610	5.3	B	54, 55	21	5			0.050	B		7	4.5	N	1	Linder,J	V	
1.781	812611	5.0	M	55, 54	20	5			0.06	R	11	25		Y	2	Gallego,J		
1.781	812612	5.5	55							Y		5.6		Y	1	McBain,J		
1.781	812613	6.0	55		4	6			0.040	B		8	5.0	Y	2	Weissferdt,F	W	
1.785	812614	5.8	B	54	18.2	3			0.03	B		8	5.0	Y	1	Hasubick,W		
1.790	812615	4.9	S	54	23	6			0.05	B		7	6.2	Y	3	Haver,R		
1.790	812616	4.9	S	54						Y		6.2		Y	3	Haver,R		
1.79	812617	5.5	B	DCS 5A	25	2			0.063	B		8	4.5C	N	1	Geenen,J.J	J	
1.792	812618	5.5	S	55	10	5			0.05	B		10	5.5	Y	1	Vanin,G		
1.800	812619	5.8	S	55	25.0	6			0.08	B		30	5.2	Y	3	Campos,J	X	
1.819	812620	6.1	M	54	7.7	7			0.080	B		11	5.5M	Y	1	Rossi,L	Y	
1.82	812621	6.5	B	DCS 5A	12	8			0.115	N	8	45	5	MC	Y	1	van Munster,T	
1.826	812622	6.0	B	54	20				0.050	B		7	6.0	Y	4	Lavarack,N		
1.833	812623	6.2	S	55	25	6	1	60	0.080	B		15	5	C	Y	1	Korth,S	Z
1.833	812624	6.4	M	54		3	0.33	312	0.050	B		16	4.5C	Y	1	Lozano,L	a	
1.844	812625	6	55		7	4			0.114	N	7.9	30	5.1		1	Kerber,F	b	
1.847	812626	6.2	M	55	8.3	3			0.07	B		16	5.0C	N	1	Taylor,M.D	c	
1.896	812627	5	55, 54		10	5			0.050	B		10	3.5	N	1	Marekfa,G	b	
1.917	812628	8.5	B	55	2.9	7			0.112	N	8	36	3.5M	N	1	Koschny,D		
1.948	812629	6																

NOTE A Bright nucleus. (Observer gave limit as 9. Ed.)

NOTE B DC approximate.

NOTE C Modified Sidgwick method used.

NOTE D Exc. see.

NOTE E PA = E.

NOTE F Icy wind.

NOTE G Cirrus.

NOTE H Seeing good, transparency good/fair. Haze.

NOTE I Comparison stars SAO 92230, 92183. (Observer indicated "A" method [Argelander?]. Ed.)

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NOTE J Coma diameter approximate.  
 NOTE K Inner coma bright. (Instrument used for this note not specified. Ed.)  
 NOTE L Moonlight out of city.  
 NOTE M For naked eye elongated.  
 NOTE N (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are SAO 92183, SAO 92250.  
 NOTE O (Observer indicated "K" method. Ed.) Ground fog.  
 NOTE P Tail PA 93; 63 deg. Naked eye!  
 NOTE Q Moonlight.  
 NOTE R Telescopic limit is 11.  
 NOTE S Tail very faint with a central spine.  
 NOTE T Magnification approximate.  
 NOTE U PA computed by drawing.  
 NOTE V Thin fog?  
 NOTE W Fog. (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE X Some haze. No tail visible.  
 NOTE Y PA approximate.  
 NOTE Z Coma diameter approximate. Tail very diffuse.  
 NOTE a Tail appear.  
 NOTE b (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE c Seeing Antoniadi III.  
 NOTE d Cloud.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
1.016	830328		0.203	SC	10		15	6.0		Williams,D.J	A
1.016	830329		0.105	N	4.2	16	15	6.0		Williams,D.J	
1.275	830330		1.5	C		260	9	5.5	5	Bragadin,A	B
1.706	830331	0.10	0.125	N	5.8	28, 40, 60	14	4.0	1	Riccabone,G	C
1.734	830332		0.20	SC	10	50	23	6	3	Bremseth,P.-J	D
1.755	830333	0.25	0.356	SC	11	200	45		1	Verdenet,M	E
1.766	830334	1.2	0.080	B		20	15	5	1	Knain,E	F
1.781	830335		0.060	R	11	25			2	Gallego,J	G
1.795	830336		0.076	N	9.2	35,140	10	4.5	1	Li Causi,G	H
1.811	830337	0.08	0.40	N	5	81,254	15	6.5	2	Merlin,J.-C	I
1.899	830338	2	0.05	R	7	15, 25, 40	50	4.5	1	Kopp,M	J
1.904	830339	0.08	0.125	N	5.8	28, 40, 60	45	4.5	1	Riccabone,G	K
1.908	830340	0.50	0.305	N	5.6	56	4	5	1	Korth,S	L

NOTE A It is very condensed at the center. The degree of condensation is 6. The comet seems to fan outward toward the east. This is more evident when seen through the 8".  
 NOTE B Coma diameter 5-6 arc min. DC 2.  
 NOTE C Nebular region of greater luminosity at PA 142. Diameter of the false nucleus (a very fine, very small zone, almost stellar in appearance) is 15 arc sec. Magnification of 80 also used. Two drawings included. Intense city lights interfered with the observation. (Translated by IHW staff. Ed.)  
 NOTE D Tail at PA 100. Inner part of the coma was brighter than before, and the southern part was brightest. From this area, the tail began. A straight but short tail was weak about 1/4 deg. from the coma. The central condensation was very small, about 3 arc sec. (not star-like). Some diffuse was also observed at PA 80-85, about 4 arc min. from the coma. Close to the central condensation (at PA 85), there were seen a small star-like point (star? See drawing). [sic]  
 NOTE E (Two drawings submitted. Additional drawing submitted made using 11x80 binoculars (2.01"/mm). Ed.)  
 NOTE F Coma bright in center, diffuse toward the edge. Not sure of tail, very diffuse.  
 NOTE G Asymmetrical coma. Visible at naked eye. [sic] Front part of coma more crisp. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE H To see the tail at PA 90, it seemed easier with yellow Kodak Wratten 4 filter. The tail at PA 35+/-10 was very little contrasted and to see it was very difficult. [sic]  
 NOTE I Tail at PA 63; jet at PA 131, diffuse; jet at PA 174, diffuse. Large parabolic hood nearly sunward. Several "flakes" clearly detached from the central condensation.  
 NOTE J Only coma (diffuse) with brightness increasing towards the center visible. No tail visible.  
 NOTE K Diameter of the false nucleus is 61 arc sec. Magnification of 80 and 144 also used. Two drawings included. Intense city lights interfered with the observation. (Translated by IHW staff. Ed.)  
 NOTE L Jet 8' long at PA 140; jet extremely diffuse. City lights interfered with the observation.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	POV	ExpM	Emulsion	ISO	Typ	Gdng	Id/Typ	Site	Observer(s)	Notes
1.058	850290	2.400	4	0.600	0.9 x 0.6	3.50	Kodak 103a-O		N	O	001/T	1	Belli,V	
1.423	850291	0.850	3.4	0.25	2.4 x 1.6	23.08	Kodak 6415		Y	C	4/P	1	Kojima,T	A
1.717	850292	2.400	4	0.600	0.9 x 0.6	6.17	Kodak 103a-O		N	O	001/T	1	Belli,V	
1.725	850293	1.820	5.2	0.350	1.1 x 0.8	15.00	Kodak 103a-O		N	O	4/C	2	Cimatti,A	
1.742	850294	1.820	5.2	0.350	1.1 x 0.8	12.00	Kodak 103a-O		N	O	5/C	2	Cimatti,A	B
1.777	850295	0.600	1.6	0.375	3.4 x 2.3	4.05	Kodak 103a-O		N	O	002/T	1	Belli,V	C
1.778	850296	1.000	5	0.200	2.1 x 1.4	15.00	3M 1000	1000/	N	X	3/S	1	Vanin,G	
1.845	850297	1.690	5.6	0.305	1.2 x 0.8	3.00	Agfachrome	1000/31	N		4/S	1	Korth,S	D
1.855	850298	1.690	5.6	0.305	1.2 x 0.8	3.00	Agfachrome	1000/31	N		5/S	1	Korth,S	D
1.870	850299	1.690	5.6	0.305	1.2 x 0.8	5.00	Agfachrome	1000/31	N		6/S	1	Korth,S	D
1.881	850300	1.690	5.6	0.305	1.2 x 0.8	7.00	Agfachrome	1000/31	N		7/S	1	Korth,S	D
1.893	850301	1.690	5.6	0.305	1.2 x 0.8	9.00	Agfachrome	1000/31	N		8/S	1	Korth,S	D

NOTE A Instrument is Wright-Schmidt. Large format (120 size) film used.  
 NOTE B Interrupted by clouds.  
 NOTE C Instrument is Celestron 14" Schmidt Camera.  
 NOTE D City lights interfered with the observation. (Observer indicated both type O and type X guiding. Ed.)

DATE: 2 DEC 1985

DATE: 2 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	
2.003	812632	6.2	M	54	3.9	6			0.114	N	8	45	4.8	N	1	Mac Kenzie,G		
2.010	812633	6.1	B	54	15	5			0.05	B		7	5.5C	Y	10	Chmielewski,W		
2.066	812634	6.0	S	54	28	7			0.32	N	4.4	57	5.2	Y	1	Arsail,R.B		
2.14	812635	5.6		SKY&TEL	10.0	8			0.035	B		7	5.5	Y	1	McBride,P		
2.271	812636	5.2	M	54	19	7	0.42	290	0.05	B		10	6.0	Y	2	Fabre,R	A	
2.397	812637	7.0	M		5.5	6	0.13	85	0.10	N	10	55	4.5C	Y	1	Kato,T		
2.410	812638	5.6	M	54	9	6	0.25	90	0.030	B		8	4.5C	Y	1	Kato,T	B	
2.415	812639	6.0	M	54, 55	13	7	0.25	70	0.08	B		11	5.5	Y	1	Mitsuma,S	C	
2.42	812640	6	B	M	8.2	5			0.21	N		80				Knyazyuk,N		
2.44	812641	5.8	M		20	7	2	70	0.05	B		7	5.5	Y	2	Hiraga,M		
2.44	812642	5.5	S	54	17.9	6	0.5	65	0.05	B		7	5.0	Y	1	Kanai,K		
2.44	812643	6.0	B	54	17.9	6	0.5	65	0.05	B		7	5.0	Y	1	Kanai,K		
2.441	812644	6	B	55	15	5	0.33	80	0.07	B		10	3.5	Y	1	Kobayashi,J	D	
2.45	812645	5.8	B		17	5	0.6	70	0.16	N	4.8	24		Y	1	Maeda,S		
2.458	812646	6.3	B	54		7			0.05	B		7	4.0C	Y	1	Hasegawa,T		
2.458	812647	4.4	S	78	30	7				EY			6.3C	Y	1	Lovejoy,T	E	
2.47	812648	5.8	S	54	15	6			0.07	B		10	5.0M	Y	1	Yasuki,M		
2.49	812649	5.8	S	AAVSO	10	5			0.13	N	6.3	24	4.0M	Y	1	Hayashi,A		
2.51	812650	5.7	S	AAVSO	12	4			0.07	B		10	4.0M	Y	1	Hayashi,A		
2.512	812651	6.0	B	54	15	5			0.060	B		10	4.0	Y	1	Moriya,M	F	
2.52	812652	5.9	B		15	5			0.05	B		10	5.0	N	1	Uda,K		
2.531	812653	6.0	M	54	15	5			0.035	B		7	5	Y	1	Watanabe,A		
2.54	812654	4.9	S	54	10	4			0.065	B		20	5.3	Y	1	Pearce,A		
2.54	812655	5.8	M	54					0.05	B		7	4.5M	Y	2	Suzuki,K		
2.542	812656	5.9	B						0.035	B		7		N	1	Okada,M		
2.559	812657	6.3	B	54					0.07	B		10	4.5M	Y	1	Date,M		
2.599	812658	5.6	M	54	10	6			0.030	B		8	5.0M	Y	1	Kato,T		
2.615	812659	5.8	M	54	22	5			0.1	N	10	40	6.0	Y	1	Ichikawa,K	G	
2.62	812660	6.0	S			6			0.08	B		11	4.0	N	1	Momose,M		
2.67	812661	5.7	B	E	16				0.03	B	7	7				Zagaynov,V.A		
2.69	812662	6.4	B	M	4.5				0.05	R		20				Nesterov,Yu		
2.69	812663	5.4	B	E	15	5			0.05	B		7				Mormil,V		
2.70	812664	5.7	B	E	16				0.03	B		8				Zagaynov,V.A		
2.705	812665	6.1	M	54	13	10			0.08	B		11	5.5	Y	1	Gubo,H		
2.71	812666	5.9	B	E	15	6			0.03	B		8				Zagaynov,V.A		
2.71	812667	5.9	B	E	16				0.03	B		8				Zagaynov,V.A		
2.715	812668	6.0	B	54	12.6	5			0.10	B		14	5.5	Y	1	Hasubick,W		
2.719	812669				6.0	5			0.080	B		20	3.9C	Y	1	Baroni,S		
2.719	812670	5.4	M	54	24	6			0.05	B		12	5.0	Y	1	Tanti,T	H	
2.72	812671	5.6	M	54	13	5			0.05	B		10	4.8	Y	1	Bottger,B		
2.72	812672	5.8	B	E	15				0.03	B		8				Zagaynov,V.A		
2.72	812673	5.6	B	E	16				0.03	B		8				Zagaynov,V.A		
2.7229	812674	6.1	S	AAVSO		5			0.05	B		7	5.0	N	1	Sicoli,P		
2.728	812675	6.5	54		0.5	5			0.06	R	6.9	20	4.5	Y	1	Guerrini,F		
2.729	812676	10.0	B	54	11.3	4			0.203	SC	10	92	5.5	Y	1	Hasubick,W	I	
2.729	812677	6.0	B	54	10.5	5			0.080	B		20	6.0	Y	1	Koch,V		
2.73	812678	5.9	B	AA	15	5			0.050	B		7	5.0	N		Schmeer,P		
2.74	812679	5.5	B	E	17				0.03	B		8				Zagaynov,V.A		
2.750	812680			54	9				0.030	B		8	5.5C	Y	1	Villa,M		
2.757	812681	5.3	M	54, SAO	20	5			0.063	B		9	5.0	Y	3	Kammerer,A	J	
2.76	812682	5.8	B	E	16				0.03	B		8				Zagaynov,V.A		
2.762	812683	5.4	B	54	10.5	5			0.080	B		20	6.0	Y	1	Koch,B.O		
2.763	812684	5.8	B	55, 54	4.5	6	0.17	80	0.330	N	4.5	59	6.1	Y	1	Castano,R		
2.764	812685	6.0	M	54					0.030	B		8	5.5C	Y	1	Villa,M		
2.767	812686	5.6	S	54	10	6			0.076	R	5.5	17	4.2C	N	1	Piccinini,M		
2.77	812687	5.7	B	54	16	4			0.050	B		7	C	N	1	Jannink,D.W	K	
2.77	812688	5.4	S	DCS 5A					0.050	B		10	C	N	1	van Lee,F.R		
2.77	812689	5.0	V	54	60	1	1.00	75		EY		6.5	Y	2	Merlin,J.-C			
2.771	812690	8.1	B	55	5.0	6			0.112	N	8	36	4.0M	N	1	Koschny,D		
2.771	812691	5.5	B	54	12	4			0.050	B		10	3.5	N	1	Marekcia,G	L	
2.7777	812692	5.8	B	54	8	7			0.05	B		10	6.0C	Y	2	Franciosi,C		
2.779	812693			54	17				0.114	N	8.7	50		Y	1	Rodriguez C.,J.A		
2.78	812694	5.8	B	E	16				0.03	B		8				Zagaynov,V.A		
2.783	812695	5.2	B	54, 55	11	6			0.050	B		7	4.5	Y	2	Linder,J	M	
2.784	812696	5.8	B	54	15	5			0.08	B		11	4	N	1	Gainsford,M.J	N	
2.784	812697	5.0	S	54	26	6			0.050	B		7	6.2	Y	1	Meozzi,D		
2.785	812698	5.9	B	54	16.8	4			0.03	B		8	5.5	Y	1	Hasubick,W		
2.785	812699	5.8	S		11	6			0.050	B		7	5.0	Y	1	Nolle,M		
2.785	812700	5.7	S	54, 78	13.9	6	0.12	72	0.05	B		10	4.8	Y	3	Abbott,J	O	
2.790	812701	4.9	S	54	24	6			0.05	B		7	6.3	Y	3	Haver,R		
2.790	812702	4.8	S	54						EY		6.3	Y	3	Haver,R			
2.79	812703	6.2	B	AAVSO	15	3			0.08	R		8				Shirokov,A		
2.79	812704	5.6	B	54		6			0.050	B		10	4.5	Y	2	Wagner,G		
2.792	812705			54	9	6			0.114	N	8.7	25	6.0C	Y	1	Melandri,F		
2.792	812706	6.3				4			0.080	B		15	4	Y	1	Nagele,A	P	
2.80	812707	5.1	S	DCS 5A	20	6			0.050	B		10	6	Y	3	Comello,G	Q	
2.80	812708								0.203	C	10	50	6	Y	3	Comello,G	R	
2.80	812709	6.1	S	DCS 5A	50	5			0.050	B		16	5	C	Y	1	van Asperen,H	
2.80	812710	5.7	B	E	16				0.03	B		8				Zagaynov,V.A		
2.823	812711	6.3	B	54		3			0.07	B		10	4.8	Y	1	Deconinck,M		
2.826	812712	6.4	M	54	11	3	0.33	310	0.050	B		10	4.3C	Y	1	Lozano,L	S	
2.826	812713	6	M	54	5	5			0.114	N	7.9	30	5.2	Y	1	Kerber,F	L	
2.830	812714	6.2	M	54	12	6			0.08	B		11	5.5	Y	1	Fleet,R.W	T	
2.833	812715	6.1	B		10	4			0.150	N	4.8	36	5.5	Y	1	Emrich,G		
2.84	812716	6.2	B	DCS 5A	15	12			0.115	N	8	45	5.5MC	Y	1	van Munster,T		
2.843	812717	5.5	B		10	5			0.07	B		20	5.5	Y	2	Fillimon,E		
2.84375	812718	6.1	B	54	4.5	5			0.114	N	7.8	23	4.5	Y	1	Gozzoli,E		
2.85	812719	5.0	S	DCS 4B	16	5			0.040	B		7	4	MC	Y	5	Bus,E.P	
2.86	812720	6.1	M	AA	8	6			0.1.0									

NOTE A (PA value appears to be measured incorrectly. Ed.)

NOTE B Tail length approximate.

NOTE C 10.5.

NOTE D Magnitude estimation method = F.

NOTE E 0.5 deg. tail, PA about E, visible in 15x80 binoculars. Magnitude probably slightly optimistic. (Approximately 0.2 mag.?). [sic] Delta Psc also used for comparison.

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NOTE F Seeing 4/5.  
 NOTE G PA = E.  
 NOTE H Seeing good, transparency good.  
 NOTE I  $m_2 = 10.0$ .  
 NOTE J Clouds.  
 NOTE K Telescopic limit is 8.  
 NOTE L (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE M Bazy. Coma diameter approximate.  
 NOTE N Cloud.  
 NOTE O Comparison stars 5.1, 5.8, 6.3, 4.3. Cloud. The "tail-lobe" structures seen in 10x50 binoculars corresponded to fountain-like features seen in larger instruments. The northern "tail-lobe" was 0.12 deg. long at PA 72. The southern "tail-lobe" was 0.1 deg. at PA 110.  
 NOTE P (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are SAO 92123, SAO 92080.  
 NOTE Q Coma diameter approximate.  
 NOTE R PA approximate.  
 NOTE S Meteor act. [sic]  
 NOTE T 21' coma, averted vision, between clouds.  
 NOTE U + 7x50 B and 10 mag. nucleus. [sic]  
 NOTE V Mag. method = "A".  
 NOTE W (Observer gave limit as 11.0. Ed.)  
 NOTE X Short tail at PA 100.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
2.005	830341	0.21	0.114	N	8	45	14	4.6	1	Mac Kenzie,G	
2.732	830342		0.06	R	6.9	20	11	4.5	1	Guerrini,F	
2.750	830343	0.25	0.356	SC	11	200			1	Verdenet,M	A
2.771	830344		0.40	N	5	81,254,407	30	6.5	2	Merlin,J.-C	B
2.826	830345	1.0	0.254	N	6.4	41	10	4.8	3	Abbott,J	C
2.838	830346	0.37	0.406	N	5	68	18		2	Farroni,G	D
2.850	830347	0.98	0.106	R	5.7	24, 48, 60	27	5.3	1	Keszthelyi,S	E
2.878	830348	0.7	0.153	N	8.5	65	40		2	Cifuentes,E	F
2.933	830349	0.08	0.125	N	5.8	28, 40, 60	39	4	1	Riccabone,G	G

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Additional drawing submitted made using 11x80 binoculars (2"/mm). Ed.)  
 NOTE B Jet at PA 213, jet at PA 260, then curved about southward, jet at PA 357. Four very small and bright condensations seen at 407x; I can't say which one could be the "false nucleus". Diffuse extensions ill defined tailward. (Two drawings supplied, at 1820 UT with scale 0.16"/mm and at 1837 UT with scale 0.05"/mm. Ed.)  
 NOTE C Central condensation approximately 4 arc min. diameter. Southernmost fountain at PA 110 deg., approximately 6 arc min. length. Northernmost fountain at PA 72 deg., approximately 7 arc min. length. Vertex distance approximately 4 arc min. Semi latus rectum approximately 5 arc min. (both). Two faint tail lobes were observed with the 10x50 binoculars and these appeared as fountain-like structures with the 25.4 cm Newtonian reflector. The central condensation appeared as a reasonably well defined disk of a considerable fraction of the total coma diameter. There was however clearly an intensity peak within the central condensation.  
 NOTE D Apparent dimensions of the comet 9.2'x7.3'.  
 NOTE E Magnification of 150x also used.  
 NOTE F Rather diffuse. The coma was off-center to the east, as usual. The tail is less visible and less bright than on previous day. (Observer gave limit as 11.0. Translated by ISW staff. Ed.)  
 NOTE G Nebular regions of greater luminosity at PA 18, PA 160, and PA 91. Diameter of the false nucleus is 134 arc sec. Magnifications of 80 and 144 also used. Two drawings included. Intense city lights interfered with the observation. (Translated by ISW staff. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gang	Id/Typ	Site	Observer(s)	Notes
2.718	850302	1.820	5.2	0.350	1.1 x 0.8	30.00	Kodak 103a-O		N	O	6/C	2	Cimatti,A	
2.750	850303	1.820	5.2	0.350	1.1 x 0.8	30.00	Kodak 103a-F		N	O	1/C	2	Cimatti,A	A
2.760	850304	0.135	3.2		15.2 x10.2	3.00	Agfa-Pan Pro	400/27	N	M	24/C	2	Trixler,F	B
2.768	850305	0.225	1.7	0.136	9.1 x 6.1	1.50	Kodak 2415		Y	O	1/S	1	Valisa,J	C
2.774	850306	0.225	1.7	0.140	9.1 x 6.1	3.00	Kodak Tri-X		N		04/P	2	Linder,J	D
2.789	850307	1.820	5.2	0.350	1.1 x 0.8	30.00	3M CRT-4		Y	O	1/C	2	Cimatti,A	E
2.801	850308	0.180	2.8		11.4 x 7.6	20.00	Kodak 2415		Y	O	1/P	4	Uberti,M	
2.807	850309	0.135	3.2		15.2 x10.2	3.50	Agfa-Pan Pro	400/27	N	M	26/C	2	Trixler,F	B
2.811	850310	0.135	3.2		15.2 x10.2	5.00	Agfa-Pan Pro	400/27	N	M	28/C	2	Trixler,F	B
2.817	850311	0.135	3.2		15.2 x10.2	2.50	Agfa-Pan Pro	400/27	N	M	32/C	2	Trixler,F	B
2.818	850312	1.820	5.2	0.350	1.1 x 0.8	30.00	Kodak 103a-O		N	O	7/C	2	Cimatti,A	F
2.842	850313	1.820	5.2	0.350	1.1 x 0.8	20.00	Kodak 103a-O		N	O	8/C	2	Cimatti,A	G

NOTE A Red Wratten 25 filter used.  
 NOTE B City lights interfered with the observation.  
 NOTE C Instrument is Celestron Schmidt camera.  
 NOTE D Instrument is Schmidt camera.  
 NOTE E Large format film used.  
 NOTE F Guided by G. Mengoli.  
 NOTE G Moonlight interfered with the observation.

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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	
3.01	812726	4.8	S	AA	20	5			0.050	B		7				Green,D.W.E		
3.022	812727	6.0	B	54	20	3		90	0.203	R	13	85	4.8	N	1	Fox,J.H	A	
3.063	812728	5.1	B	54		4			0.05	B		20	5.0	Y	5	da Silva,L.A.L	B	
3.083	812729	6.5	B	54					0.080	B		20	5.5	Y		Smith,D		
3.090	812730	5.5	S	58	34	8	0.67	35	0.32	N	4.4	57	6.2	Y	1	Ariail,R.B		
3.10	812731	5.3	S	54	20	5	0.40	70	0.040	B		8	6.0	Y	1	Keen,R	C	
3.104	812732	6.3	B	54		4			0.08	B		11	5	Y	1	Gorski,L		
3.11	812733	4.6	B	78					0.08	B		6	6.0	Y	1	Keen,R		
3.12	812734	5.8	M	54	20	6	0.67	70	0.32	N	4	40	6.0	Y	1	Keen,R		
3.125	812735	5.4	S	54	15	8	1.5	64	0.108	N	4	24	5.5	Y	2	Franch,J	D	
3.15	812736	5.8	B	54	16	7			0.080	B		20	5.5	Y		Kronk,G	E	
3.17	812737	6.8	B	54	11.5	8		77	0.335	N	4.5	56	5.5	Y		Kronk,G	E	
3.21	812738	5.1	S	54					0.050	R		8	4.0	Y	10	Morris,C.S	F	
3.229	812739	5.2	M	54	19	7	0.46	290	0.05	B		10	5.5	Y	1	Fabre,R	G	
3.3271	812740	5.9	S	SAO	18	3			0.080	B		20	5.6	Y	3	Machholz,D		
3.42	812741	6.3	S	54		2			0.050	B		7		Y	1	Matchett,V		
3.421	812742	6.4	M		5.5	6			0.10	N	10	55	4.5C	Y	1	Kato,T		
3.426	812743	5.7	M	54	17	6			0.030	B		8	4.5C	Y	1	Kato,T		
3.428	812744	4.4	S	78	30	7			0.07	B		10	3.5	Y	1	Lovejoy,T	H	
3.429	812745	5.9	S	54	22	5	0.33	90	0.05	R	16	20	6	Y	1	Kobayashi,J		
3.438	812746	6.3	S	54	1.7	1			0.16	N	4.8	24		Y	1	Feisheng,J		
3.44	812747	5.8	B		18	6	0.7	70	0.035	B		7		Y	2	Maeda,S		
3.493	812748	5.7	B						0.050	B		7	5.8C	Y	1	Okada,M		
3.500	812749	5.5	B	54	16	6			0.07	B		10	5.0	Y	1	Parkinson,M	I	
3.51	812750	5.8	S	54	15	5			0.153	N	8.6	33	4.5	Y	1	Yasuki,M		
3.517	812751	6.2	S	54	11	5			0.06	R	12	22	4.0	Y	2	Iwaki,Y		
3.52	812752	5.8	M	SAO	15	5		60	0.065	B		20	5.3	Y		Nakamura,A		
3.53	812753	5.1	S	54	12	5			0.060	B		10	3.5	Y	1	Pearce,A		
3.533	812754	6.0	B	54	15	5			0.08	R	11.4	33	2.8C	Y	1	Moriya,M	J	
3.538	812755			54	2.2	5			0.31	N	5.7	147	4.0M	Y	2	Suzuki,K	K	
3.54	812756			54	3.3	4			0.05	B		7	4.0M	Y	2	Suzuki,K		
3.54	812757	5.7	M	54					0.080	B		11	5.5	Y	3	Watanabe,N		
3.54	812758	6.0	M	54	23				0.05	B		7	4.0C	Y	1	Hasegawa,T		
3.563	812759	6.3	B	54					0.07	B		10	4.0M	Y	1	Date,M		
3.573	812760	6.3	B	54					0.05	B		10	5.2	Y	1	Konstantinov,S		
3.58	812761	6.1	B	M	12	4			0.03	B		8		Y	1	Ellas,P		
3.681	812762	5.4	B	CZ					0.063	R	13.3	52		Y		Zagaynov,V.A		
3.69	812763	6.1	B	E	16	8	0.45		0.05	R		20		Y		Kosa-Kiss,A	L	
3.705	812764	5.5	M	AAVSO	15				0.10	B		14	5.5	Y	1	Nesterov,Yu		
3.71	812765	6.3	B	M	4.5	4			0.03	B		8	5.5	Y	1	Rasubick,W		
3.712	812766	5.9	B	54	16.8	4			0.140	SN	3.6	19	6.2	Y	1	Rasubick,W		
3.715	812767	5.8	B	54	18.9	4			0.08	B		11	5.5	Y	1	Meozzi,D		
3.718	812768	5.1	S	54	13.2	5			0.018	B		3	6.5	Y	2	Gubo,H		
3.719	812769	6.0	M	54	16	12			0.04	B		12		Y	2	Bus,E.P	M	
3.73	812770	4.1	S	DCS5A6A	25	4			0.113	N	8	22	5.0	Y	1	Maydik,A		
3.73	812771	6.3	M	E	25	5			0.05	B		7	6.3	Y	1	Schambeck,C.M		
3.733	812772	5.6	B	54	8	7			0.08	B		10	5.2	N	1	Silhan,J		
3.733	812773	6.3	M	CZ	35	5			0.08	B		10	4.0	Y	1	Janecek,V		
3.735	812774	5.6	B	CZ	3	3			0.08	B		10	4.0	Y	1	Shanklin,J.D		
3.74	812775	5.3	S	54					0.040	B		7	6.5	Y	2	Bus,E.P		
3.74	812776	4.5	S	DCS4B6A	20	5	2.0	90	0.07	N	8	33		Y	2	Bezrodny,A		
3.747	812778	5.7	B	54		6			0.060	R		8	15	4.5	Y	1	Schambeck,C.M	
3.750	812779	7.3	S	54	3.5	6			0.090	R	14	46	5.0	Y	1	Hirth,G		
3.75	812780	5.8	B	M					0.03	B		8		Y		Tsygankov,D		
3.751	812781				18	6			0.08	B		20	3.0	Y	2	Milani,G	N	
3.755	812782	5.6	S	54	13	5			0.08	B		11	4.5	Y	1	Gainsford,M.J	O	
3.759	812783	5.8	S	54	3.8	6		90	0.25	N	6	60	4.5	Y	1	Gainsford,M.J	P	
3.76	812784	6.1	S	AAVSO	10	3			0.08	R		8		Y		Shirokov,A		
3.764	812785	5.5	B	CZ	20	5			0.08	B		10	5.1	Y	1	Kral,M		
3.788	812786	5.0	S	54	7	1	1.00	80	0.050	B		7	6.2	Y	1	Meozzi,D		
3.79	812787	4.9	V	54	70	3			0.035	B		7	6.0	Y	2	Merlin,J.-C		
3.816	812788	6.5	B	54	7	1			0.10	O		25	6.0C	Y	1	Sciezor,T	Q	
3.826	812789	6.4	B	CZ	13	6			0.05	B		7	6.5	Y	1	Micek,I		
3.833	812790	6.1	S	54		5			0.050	B		7		Y	1	Dziura,W		
3.833	812791	5.1	S		20	4	0.75		0.080	R	6.3	2		Y	1	Luthen,H		
3.84	812792				20	5			0.05	B		2		Y	1	Luthen,H	R	
3.84	812793	5.3	B	E	18	4			0.250	N	4.9	61	5.0	Y	2	Mormil,V		
3.854	812794	5.5	B		12	5			0.07	B		20	5.0	Y	2	Emrich,G		
3.854	812795				5	4			0.106	R	5.7	24		Y	2	Fillimon,E		
3.86	812796	6.0	M	AA	12	6			0.10	O		25	5.8C	Y	1	Keszthelyi,S	S	
3.865	812797	6.4	B	CZ	13	6			0.05	B		10	4.0	Y	3	Micek,I		
3.868	812798	5.8	S	54	8.8	5			0.07	R	5.5	18	5.5	N	1	Abbott,J	T	
3.868	812799	6.7	S	54	6	4	0.05	60	0.089	R		16	5.5C	Y	1	Taylor,M.D	U	
3.868	812800			54	16	6			0.03	B		8		Y		Ventura,F	V	
3.87	812801	6.1	S	AAVSO	18	4			0.08	R		8		Y		Shirokov,A		
3.87	812802	6.1	S	AAVSO	10	7			0.114	N	8	36	5.5	Y	1	Pennelli,G		
3.872	812803	6.2	M	120	3.3	2			0.05	B		10	5.5	Y	1	Vanin,G		
3.875	812804	5.4	S	54	11	5			0.05	B		7		Y		Mormil,V		
3.88	812805	5.3	B	E	18	5			0.21	N	5	43	5.5C	Y	1	Taylor,M.D	W	
3.885	812806			54	8.7	6	0.04	90	0.05	B		7	5.5C	Y	3	Maraziti,A		
3.89	812807	6.1	B	54	5.2	7			0.050	B		12	4	N		Schmeer,P		
3.89	812808	5.9	B	AA	18	5			0.05	B		10	4.3C	Y	1	Tanti,T	X	
3.892	812809	5.4	M	54	22	6			0.114	N	8.7	38		Y	2	Lozano,L		
3.910	812810	6.4	M	54	12	3	0.38	300	0.050	B		7	5.0	Y	1	Rodriguez C.,J.A		
3.948	812811			54	16				0.050	B		7		Y	1	Harrington,P		
3.95	812812	5.3	S	54	25	6	0.5	90	0.06	R	12	28	5.0M	N	1	Green,D.W.E	A	
3.95	812813	5.0	S	AA	20	5			0.203	N	8	128	5.0	Y	1	Rossi,L	Y	
3.972	812814	7.5	B	SC2000	2				0.317	N	6	55		Y	1	Bannon,J		
3.																		

NOTE A Coma diameter approximate.

NOTE B Elongated coma, dark lane. PA approximate. SAO 092080 and SAO 092183 comparison stars.

NOTE C Modified sidgwick method used.

NOTE D Gas tail.

NOTE E Exceptionally clear.

NOTE F Very poor conditions.

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NOTE G (PA value appears to be measured incorrectly. Ed.)  
 NOTE H Magnitude probably slightly optimistic. (Approximately 0.2 mag.?). [sic]  
 NOTE I Dubious mag. estimate; asymmetric coma; faint tail.  
 NOTE J Seeing 3/5.  
 NOTE K Meter: coma diameter is P1 + P2.  
 NOTE L 7.3 mag. nucleus. Tail PA 93; 63 deg. Naked eye!  
 NOTE M Coma diameter is minimum value.  
 NOTE N Clouds.  
 NOTE O Thin cloud.  
 NOTE P Thin cloud. Tail length = 7. PA uncertain.  
 NOTE Q Very good weather.  
 NOTE R PA 80-110. Cloudy.  
 NOTE S + 7x50 B and 9.5 mag. nucleus + naked eye. [sic]  
 NOTE T Comparison stars 5.1, 5.8. Cloud.  
 NOTE U Seeing Antoniadi II.  
 NOTE V A diffuse grayish-blue 'haze' surrounds the coma which consists of a bright, roundish condensation and an outer shell which is less bright.  
 NOTE W Good seeing, Antoniadi II.  
 NOTE X Seeing good, transparency good. Moon.  
 NOTE Y Data are for central cond.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
3.000	830350	0.67	0.102	R	15	47		5.5	1	Cuthill,L	A
3.023	830351	0.6	0.203	R	13	85	7	4.8	1	Fox,J.H	B
3.027	830352	0.23	0.203	R	13	110				Phillips,J	C
3.040	830353	0.46	0.22	R	14.9	50	14		1	Monopoli,M.O	D
3.083	830354	0.99	0.15	N	6	30	10		1	Zanette,D	E
3.127	830355		0.203	N	6	135	17	6.5	1	Troiani,D.M	F
3.238	830356		0.203	SC	10	81			1	Lohvinenko,T.W	G
3.275	830357		1.5	C		260	9	4.5	5	Bragadin,A	H
3.705	830358	0.9	0.063	R	13.3	52			1	Csukas,M	I
3.705	830359	0.89	0.063	R	13.3	52		6.2		Kosa-Kiss,A	J
3.750	830360	0.25	0.356	SC	11	200			1	Verdenet,M	K
3.757	830361		0.362	N	4.9	32	140	6.0	1	Passalacqua,P	
3.799	830362	0.48	0.15	N	5	25	10	6.0	2	Merlin,J.-C	L
3.862	830363	0.98	0.106	R	5.7	24	37	6.2	1	Keszthelyi,S	
3.976	830364	0.16	0.23	R	12	122,250,600			1	O'Meara,S.J	G

NOTE A A 9' across coma shows a strong intensity at the center; DC = 5. Mag. estimate using 10x50 binoculars is about 6.5 (Morris method).  
 NOTE B Distinct dark lane extending E, but offset to southern side of inner coma.  
 NOTE C City lights. Movement of comet definitely apparent. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE D City lights.  
 NOTE E It see less brighter than NGC 2070 and less concentrate than 47 Tuc. [sic]  
 NOTE F Sky darkness (1-5): 4. Very transparent, dark clear skies. Halos at PA 70 deg. Streamers at PA 260 and at PA 270 deg. Rays at PA 73 deg. Gas tail at PA 270 deg. DC = 7.0. Tail was a little fan-shaped.  
 NOTE G (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE H Coma diameter 4.5 arc min. DC 1.  
 NOTE I Halo diameter: 13'; DC 7-8; tail at PA 67, 21'; tail at PA 105, 25'. (Duration not indicated. Time of observation is end time. Ed.) Schematic drawing.  
 NOTE J Features at PA 93 and PA 63. Schematic drawing. (Duration not indicated. Time of observation is end time. Ed.)  
 NOTE K (Duration not indicated. Time of observation is assumed to be start time. Additional drawing submitted made using 11x80 binoculars (2"/mm). Ed.)  
 NOTE L Tail at PA 102; jet at PA 206, then curved toward about PA 150. Large and bright "flake" north of the nucleus. Many diffuse jets. Parabolic hood eastward. Possible tail streamers.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
3.107	850314	1.970	5.5	0.355	1.0 x 0.7	10.00	Kodak 2415		Y	O	27/P	1	Crist,M	A
3.130	850315	1.970	5.5	0.355	1.0 x 0.7	13.00	Kodak 2415		Y	O	28/P	1	Crist,M	A
3.140	850316	0.050	4.0		39.6 x 27.0	8.00	Kodak Tri-X		N		123/P		Gianforte,J.S	B
3.696	850317	1.000	5.6		2.1 x 1.4	20.00	Fomapan	400/27	N	O	3/N	1	Zimnikoval,P	C
3.751	850318	1.000	5.6		2.1 x 1.4	20.00	Fomapan	400/27	N	O	4/N	1	Zimnikoval,P	C
3.765	850319	0.135	3.2		15.2 x 10.2	2.00	Agfa-Pan Pro	400/27	N	M	34/C	1	Trixler,F	
3.768	850320	0.135	3.2		15.2 x 10.2	4.00	Agfa-Pan Pro	400/27	N	M	36/C	1	Trixler,F	
3.778	850321	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y		1/P		Jager,M	D
3.789	850322	0.950	4.7	0.20	2.2 x 1.4	10.00	Kodak 2415		Y		6/P	1	Conrad,R	E
3.789	850323	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y		2/P		Jager,M	F
3.796	850324	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y		3/P		Jager,M	D
3.806	850325	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y		4/P		Jager,M	D
3.815	850326	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y		5/P		Jager,M	D
3.824	850327	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y		6/P		Jager,M	D
3.846	850328	0.803	2.1	0.350	2.6 x 1.7	7.00	Kodak 103a-F		N	M	16/P	1	Guarro,J	
3.899	850329	1.400	5.6	0.260	1.5 x 1.0	10.00	Ilford HP5	400/27	N	O	1/C	1	Paolinetti,R	G
3.907	850330	1.400	5.6	0.260	1.5 x 1.0	10.00	Ilford HP5	400/27	N	O	2/C	1	Paolinetti,R	G
3.912	850331	1.400	5.6	0.260	1.5 x 1.0	2.00	Ilford HP5	400/27	N	O	3/C	1	Paolinetti,R	G
3.916	850332	1.400	5.6	0.260	1.5 x 1.0	4.00	Ilford HP5	400/27	N	O	4/C	1	Paolinetti,R	G
3.923	850333	1.400	5.6	0.260	1.5 x 1.0	8.00	Ilford HP5	400/27	N	O	5/C	1	Paolinetti,R	G

NOTE A Dew on corrector plate may have resulted in thin negatives. (Observer's image identifier is followed by suffix A. Ed.)  
 NOTE B Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.  
 NOTE C (Observer's image identifier is 102-3. Observer listed emulsion speed as ASA 800. Ed.)  
 NOTE D Large format (6x6 cm) film used.  
 NOTE E Instrument is Schmidt camera.  
 NOTE F City lights interfered with the observation; Vienna, from room!  
 NOTE G Composite print of images 2 and 3 notes coma 40x45 arc min.; magnitude 5.0; tails three jets 4 deg. at PA 65, 160 arc min. at PA 62. [sic] Instrument is Schmidt camera.  
 NOTE H (Observer's image identifier is followed by suffix A. Ed.)

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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
4.021	812820	5.3	M	54	13.1	5			0.05	B		7	5.8	Y	1	DeYoung, J.A	
4.052	812821	6.5	M	55					0.050	B		10	5.5	Y	1	Smith, A	
4.081	812822	4.9	S	54		3		62	0.05	B		20	4.0	Y	3	da Silva, L.A.L	
4.104	812823	6.2	B	54					0.080	B		20	5.5	Y		Smith, D	
4.115	812824	5.6	M	54	18.0	5			0.05	B		12	6.4	Y	1	Knight, S	
4.139	812825	6.0	M	54	15	5			0.05	B		7	6.0C	Y	10	Chmielewski, W	A
4.151	812826	5.8	M	54	28	8	0.33	40	0.108	N	4.5	30	5.1	Y	1	Ariail, R.B	
4.1514	812827	6.4	S	SAO	15	6			0.152	N	8.0	76	5.4		3	Machholz, D	
4.1542	812828	6.2	S	SAO	13	4			0.080	B		20	5.4		3	Machholz, D	
4.21	812829	4.7	M	54, 55	15	8			0.050	R		8	6.5	Y	7	Morris, C.S	
4.215	812830	5.7	B	54						EY		1	6.3	Y	2	Krisciunas, K	B
4.23	812831	4.7	M	54, 55	15	7	0.93	70	0.080	B		20	6.5	Y	7	Morris, C.S	C
4.233	812832	5.8	M	54	10	6			0.050	B		7	5.3	Y	1	Robertson, T	
4.240	812833		M	54	8.6	6			0.15	N	8	68	5.3	Y	1	Robertson, T	D
4.25	812834								0.256	N	4.5	45	6.5	Y	7	Morris, C.S	E
4.25	812835								0.256	N	4.5	222	6.5	Y	7	Morris, C.S	F
4.253	812836	6.0	B	54	15	3			0.050	B		10	5.5C	Y	1	Stapleton, J	G
4.257	812837				15	6			0.254	N	5.6	157	5.5C	Y	1	Stapleton, J	H
4.27	812838	5.5	M	54		1			0.05	B		10	6	Y	3	Hale, A	
4.27	812839	5.4	B	54						EY		6		Y	3	Hale, A	
4.368	812840	5.2	M	54	19	7	0.5	290	0.05	B		10	5.5	Y	1	Fabre, R	I
4.43	812841	5.9	B	M	4.4	5			0.21	N		80				Knyazyuk, N	
4.480	812842				5.9	5	0.08	90	0.32	N	8	150		Y	1	Tregaskis, T.B	J
4.484	812843					5		90	0.152	N	8	64		Y	1	Tregaskis, T.B	K
4.492	812844	5.7	S	54	12	3			0.05	B		10		Y	1	Tregaskis, T.B	L
4.515	812845	5.9	M	78	12	7	0.33	75	0.08	B		11	5	N	1	Mitsuma, S	
4.60	812846	6.1	B	E	15				0.05	B		8				Zagaynov, V.A	
4.60	812847	5.8	B	E	14				0.03	B		8				Zagaynov, V.A	
4.60	812848	5.6	B	E	17				0.03	B		8				Zagaynov, V.A	
4.60	812849	6.0	S	E	15				0.05	R	8	20				Zagaynov, V.A	
4.60	812850	6.0	B	E	14				0.05	R	8	20				Zagaynov, V.A	
4.62	812851	6.0	B	E	14				0.05	R	8	20				Zagaynov, V.A	
4.62	812852	5.8	B	E	17				0.03	B		8				Zagaynov, V.A	
4.62	812853	5.8	B	E	14				0.05	R	8	20				Zagaynov, V.A	
4.62	812854	5.7	B	E	17				0.03	B		8				Zagaynov, V.A	
4.63	812855	5.7	B	E	16				0.05	R	8	20				Zagaynov, V.A	
4.64	812856	5.9	B	E	18				0.03	B		8				Zagaynov, V.A	
4.64	812857	6.2	B	M	19				0.05	B		8				Zagaynov, V.A	
4.646	812858	5.8	M	54	20	6			0.035	B		7	4	Y	1	Konstantinov, S	
4.67	812859	5.8	B	E	16				0.03	B		8				Watanabe, A	
4.694	812860	6.2	M	CZ	25	4			0.055	R		12	5.8	Y	1	Zagaynov, V.A	
4.701	812861	6.0	B	54	7	7			0.080	R	6.3	50		Y	1	Silhan, J	
4.705	812862	5.4	M	AAVSO	16	8	0.5		0.063	R	13.3	52				Pfitzner, E	M
4.715	812863	6.1:	B	SAO					0.125	R	6	35	3.5	Y	1	Koss-Kiss, A	N
4.722	812864	6.5	B	54	4.9	6			0.05	B		10	5.5	Y	1	Guthier, C	
4.729	812865	5.8	B	INW, SAO	8.8	5			0.080	B		20	3.8	Y	1	Bretschneider, H	
4.733	812866	6.3	B	54	6	2			0.113	N	8	22	5.0	Y	1	Guthier, O	O
4.74	812867	4.8	V	54	70	5	1.50	73		EY		6	5	Y	2	Schambeck, C.M	
4.743	812868	7.3	S	54	4.1	5			0.090	R	14	46	4.3	Y	1	Merlin, J.-C	
4.750	812869	5			20	7			0.050	B		7	4.5	Y	1	Birth, G	P
4.750	812870				20	3	3	80	0.04	B		8		Y	1	Linder, J	Q
4.751	812871	6.0	M	54					0.030	B		8	4.5C	Y	1	Morrisby, A	R
4.753	812872	5.6	B	54	19.3	4			0.03	B		8	6.0	Y	1	Villa, M	
4.753	812873	5.5	B	54		4				EY		8	6.0	Y	1	Hasubick, W	
4.757	812874				8	5			0.030	B		8	4.5C	Y	1	Hasubick, W	
4.759	812875	5.8	B	54	10.8	5			0.056	B		8	6.0	Y	1	Villa, M	
4.760	812876	6.3	B	54	9	5			0.060	R	8	15	5.5	Y	1	Koch, V	
4.764	812877	5.4	B	CZ		4			0.08	B		10	5.7	N	1	Schambeck, C.M	
4.764	812878	6.2	M	CZ	14	5			0.10	B		25	5.3	Y	1	Janecek, V	
4.764	812879	5.3	B	CZ		4			0.08	B		10	5.7	N	1	Hajek, P	
4.766	812880				15	5			0.114	N	8.7	100		Y	1	Kral, M	
4.771	812881	5.8	M	CZ	20	7			0.080	B		10	4.3	Y	1	Rodriguez C., J.A	
4.771	812882	6.1	M	CZ	30	4	1	80	0.055	R		12	5.9	Y	1	Bilek, V	S
4.772	812883	5.8	M	54	20	6			0.25	N	5.2	50	6.0C	Y	1	Silhan, J	
4.778	812884	5.8	M	54	20	6			0.25	N	5.2	100	6.0C	Y	1	Gonzalez, A	T
4.781	812885	5.7	B	54	16.5				0.050	B		7	6.5	Y	1	Gonzalez, A	U
4.785	812886	5.7	M	54	16	6			0.089	R	5.5	18	5.7	N	1	Bohme, D	
4.79	812887	5.7	B	AA	18	5			0.050	B		7	5.0	N	1	Ventura, F	V
4.79	812888	5.5	B	54	10	5			0.056	B		8	4.5	Y	1	Schmeer, P	
4.790	812889	6.1	B			3			0.080	R	6.2	12	5.0	Y	1	Kraling, W	
4.792	812890	6.3	S	CZ	9	7		10	0.05	R	10	13	6.0	Y	1	Lieder, F	
4.792	812891	5.7	B	54	10.2	7	0.23	70	0.050	B		10	5.5	Y	1	Polak, J	
4.794	812892				7.3	5			0.080	B		20	6.0	Y	1	Rossi, L	
4.794	812893	5.6	B	54	10.8	5			0.056	B		8	6.0	Y	1	Koch, B.O	
4.799	812894				13.8	6			0.165	N	8.7	57	6.5	Y	1	Koch, B.O	
4.80	812895				10	5	0.33	110	0.10	B		14	4.5	Y	1	Bohme, D	
4.806	812896	5			15	4			0.050	B		10	3.5	N	1	Kraling, W	W
4.812	812897				5.5	4			0.130	N	8	40	5.0	Y	1	Marekfa, G	X
4.813	812898	4.9			13.5	9			0.081	B		11	4.5	Y	1	Lieder, F	
4.816	812899	5.8	M	CZ	30	5	2	70	0.05	B		7	5.9	Y	1	Sternwarte Hof	X
4.82	812900				8	4	0.33		0.200	SC	10	80	4.5	Y	1	Silhan, J	
4.823	812901	4.9	M	54	25	5	1.75		0.08	B		15		Y	2	Kraling, W	Y
4.823	812902	6.2							0.080	B		15	3	Y	1	Gallego, J	Z
4.83	812903	5.9	M	AA	10	7			0.106	R	5.7	24			1	Nagele, A	a
4.833	812904	5.7	B	54	6	5			0.114	N	7.9	30	4	Y	1	Keszthelyi, S	b
4.840	812905	5.6	M	54	20	6	0.7	78	0.05	B		12		Y	1	Kerber, F	c
4.854	812906	4.9	B	54	20		1.2		0.08	B		15			1	Tanti, T	
4.86	812907	5.7			13				0.034	B		9			1	Losada, R	
4.86	812908	5.0:	B	54	20	6			0.050	B		10	4.5	N	1	Pereira, A	d
4.875	812909	6.0	B		12	5	0.42	74	0.07	B		20	5.5	Y	1	Wagner, G	
4.878	812910	5.0	B	54	10		0.75		0.256	N	5.6	44		Y	2	Filion, E	
4.88	812911	5.5	M	54	14	5			0.05	B		10	4.5	N	1	Pedraz, S	
4.892	812912	6.5	B	54	9	3			0.035	B		7	4.0C	N	1	Bottoz, B	
4.892	812913	6.3	M	54	14	3	0.40	300	0.050	B		10	4.5C	Y	1	Scieszor, T	e
4.896	812914	5.7	B	54					0.050	B		10	5.0	Y	1	Lozano, L	
4.899	812915	6.0	M	54	11	6			0.08	B		10	5.5C	N	3	Treback, A	
4.917	812916	8.0	B	54	5.0	8			0.400	N	3.6	40	4.5	Y	2	Melandri, F	f
4.962	812917	6.3	S	54	3.7	4			0.063	R	13.3	34					

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NOTE C Coma was irregular with bulge toward the south. Tail in PA 114 only suspected.  
 NOTE D Filar micrometer used for coma diameter.  
 NOTE E  $m_2 = 9.2$ .  
 NOTE F Central condensation was "bumpy" with activity suspected in PAs 0: and 233:.  
 NOTE G In Pac.  
 NOTE H Faint tail, bright center. (PA value may have been incorrectly determined. Ed.)  
 NOTE I (PA value appears to be measured incorrectly. Ed.)  
 NOTE J Starlike in centre. [sic] Tail length doubtful, PA approximate. (Observer gave limit as approximately 14.5. Ed.)  
 NOTE K Doubtful tail short and wide; PA approximate. Clear bright sky. (Observer gave limit as approximately 12.5. Ed.)  
 NOTE L (Observer gave limit as approximately 9.5. Ed.)  
 NOTE M Haze. (Observer gave limit as 10.5. Ed.)  
 NOTE N Tail PA 100; 70 deg. Naked eye.  
 NOTE O Beginnings of tail. (Translated by IHN staff. Ed.)  
 NOTE P Misty, humid.  
 NOTE Q Some hazy or fog. [sic]  
 NOTE R Cirrus.  
 NOTE S Fog.  
 NOTE T See drawing 1.  
 NOTE U Elliptical coma. See drawing 2.  
 NOTE V Bright condensation is slightly west of centre of the coma. A wide tail about 40' long is suspected. It appears as a very diffuse glow in the general E-SE direction.  
 NOTE W Type I. PA approximate.  
 NOTE X (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE Y Type I.  
 NOTE Z Plasma tail.  
 NOTE a (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are SAO 109224, 91971.  
 NOTE b + 7x50 B and 9 mag. nucleus + naked eye. [sic]  
 NOTE c Variable observing conditions. (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE d (Observer gave limit as 8.5. Ed.)  
 NOTE e Slightly foggy.  
 NOTE f Nucleus elliptic, 60 arc sec. x 20 arc sec.  
 NOTE g Due to severe light pollution, just the brighter, inner part of the coma must have been visible.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
4.067	830365	0.12	0.200	SC	10	229,333	13	4	1	Gelinas,M.A	A
4.219	830366	0.10	0.20	SC	10	167,500	20	4.8	1	Ashley,J.B	B
4.245	830367	0.41	0.15	N	8	48	14	5.3	1	Robertson,T	C
4.373	830368	8	0.44	N	4.5	90,222	15	5.5	1	Fabre,R	D
4.481	830369	0.12	0.318	N	8	150	1		1	Tregaskis,T.B	E
4.738	830370	0.9	0.063	R	13.3	52			1	Caukas,M	F
4.740	830371	0.25	0.356	SC	11	200			1	Verdenet,M	G
4.771	830372	0.07	0.40	N	5	81,254,407	20	6.5	2	Merlin,J.-C	H
4.772	830373	0.250	N	5.2	50				1	Gonzalez,A	I
4.778	830374	0.250	N	5.2	100		6.0		1	Gonzalez,A	J
4.823	830375	0.080	B		15				2	Gallejo,J	K
4.832	830376	0.93	0.106	R	5.7	24	16	6.0	1	Keszthelyi,S	L
4.854	830377	0.080	B		15				5	Losada,R	M
4.873	830378	2.6	0.08	B		15	25	6.0	2	Cardiel,N	N
4.878	830379	0.256	N	5.6	44				2	Pedraz,S	O
4.965	830380	0.6	0.063	R	13.3	34, 53	10	4.0	1	Skjaeraasen,O	P

NOTE A Star with visual magnitude estimated to be 9 was at PA 180 at 0137+/-2 min. Distance about 15" from the middle of central condensation. Magnitude extinction 1 to 1.5 mag. but no occultation.  
 NOTE B No specific structure could be seen. However, a very slight central condensation was apparent at 167x. The degree of condensation was less pronounced when observing at 500x. The field star was plotted at the start of the observation. The high humidity of 75% RH reduced the contrast considerably.  
 NOTE C This evening is the first that I have been able to see other than an oval shaped coma - fan-shaped measured by filar micrometer at 8.6' and central condensation at 1.2'.  
 NOTE D Note that the north portion of the semi latus rectum (P1) is extended compared to the southern portion (P2).  
 NOTE E Possible faint tail approximately PA 90, about 4' to 5' wide, about 5' long. Limit approximately mag. 14.5.  
 NOTE F Halo diameter: 12'; DC = 8; tail at PA 38, 20' length; tail at PA 95, 25' length. (Duration not indicated. Time of observation is end time. Ed.) Schematic drawing.  
 NOTE G (Duration not indicated. Time of observation is assumed to be start time. Additional drawing submitted made using 11x80 binoculars (2"/mm). Ed.)  
 NOTE H Jet at PA 9; tail at PA 73; tail at PA 83, straight, narrow and bright; jet at PA 95, tail streamer; jet at PA 237, then curved northward, pretty faint; jet at PA 297, then curved northward.  
 NOTE I The inner coma appears mostly stellar. (Observation made with a so-so seeing and some clouds.) (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE J Elliptical coma. (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE K Visible at naked eye [sic] as a "diffuse" star of 5th mag. Narrow and "contrasted" plasma tail asymmetrical coma. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE L Coma "bump" at PA 170. (Translated by IHN staff. Ed.)  
 NOTE M The comet is clearly visible at naked eye as a faint star of about 5th magnitude. With the Newt. 25.6 cm, the plasma tail appears more diffuse and little, but inside the coma, the central condensation is definitively stellar. The incipient plasma tail is narrow and diffuse, growing from the circular coma. The south semi latus rectum (1) is brighter than its north parent. [sic] (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE N Tail long: 1 deg. 45' at PA 70. Comet visible at naked eye (not the tail). [sic] Tail very faint.  
 NOTE O Field: 1 deg. Visible at naked eye! [sic] (Duration not indicated. Time of observation is assumed to be end time. Ed.)  
 NOTE P Field: 1 deg. 9'. The head of the comet was completely circular, the decreases of the brightness outwards from the "nucleus" were gradual and smooth, and no particular details were observed. Severe light pollution affected the observation by making the background sky brighter. Much because of the bright background sky, the contrast in the field of view was low and the head appeared faint and not too easy to catch sight of.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdag	Id/Typ	Site	Observer(s)	Notes
4.026	850334	0.200	4.5		10.3 x 6.9	10.00	Ektachr. 400		N	T	1/S	1	Priester,D.C	A
4.045	850335	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	S	1/P	1	Dilsizian,R	B
4.080	850336	0.058	1.4		34.5 x 23.4	5.00	Ektachr. 400		N	T	6/S	1	Priester,D.C	A
4.083	850337	0.058	1.4		34.5 x 23.4	2.50	Ektachr. 400		N	T	7/S	1	Priester,D.C	A
4.090	850338	0.135	2.8		15.2 x 10.2	6.00	Kodak Tri-X	400/	N		2/P	2	Tatum,R	
4.240	850339	2.306	5	0.45	0.9 x 0.6	30.00	Kodak Tri-X		N	M	9/S	1	Webb,R	C
4.469	850340	0.135	3.5		15.2 x 10.2	5.00	Fujichrome	400/	N	X	2/S	1	Tregaskis,T.B	
4.733	850341	1.820	5.2	0.350	1.1 x 0.8	30.00	3M crt 4		Y	O	2/C	2	Cimatti,A	D
4.792	850342	1.820	5.2	0.350	1.1 x 0.8	30.00	Kodak 103a-F		N	O	2/C	2	Cimatti,A	E
4.803	850343	0.300	1.5	0.200	6.9 x 4.6	25.00	Agfa 910 P	50/18	N	O	1/P		Jager,M	F
4.896	850344	0.100	2.9		20.4 x 13.7	20.00	Kodak Tri-X	400/	N	T	136/P	1	Bernschier,W	G

NOTE A Push processed to 800 ASA.  
 NOTE B Exposures limited below 5 minutes to allow for stellar guiding with a minimum of "proper motion" distortion in resolution.  
 NOTE C Obvious ion tail on negative (first observation for this series). Inner coma and starlike central condensation visible on



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all original negatives. Film push processed slightly. (Observer indicated C-type guiding as well as M. Ed.)

NOTE D Large format film used.

NOTE E Haze. Red Wratten 25 filter used.

NOTE F Magnitude 5.0. Film is ortho. Instrument is Schmidt camera.

NOTE G Lumicon Deep Sky filter used. (Observer's image identifier is followed by suffix "/85".) City lights interfered with the observation.

SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	ID/Typ	Site	Observer(s)	Notes
4.074	870101	45P-O	CL	0.152	2.0		8.00	Kodak 2415		Y	S	220/P	1	Minton,R.B	A

NOTE A (Prints submitted are composites of two 4 min. exposures separated by 2 min. Observer's image identifiers are K2-20 and K2-21. Ed.)

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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	
5.05	812918	4.7	S	AAVSO	30	3				EY						Bortle, J.E	A	
5.05	812919	4.8	S	AAVSO	17	6				B		10				Bortle, J.E	B	
5.05	812920				7.5	8	1.0	70	0.317	N	6	55				Bortle, J.E	C	
5.069	812921	4.8	B	54		3			0.06	R	12	56	5.5	Y	1	Onofre D., D		
5.114	812922	5.4	B	54	15	6	0.17	95	0.035	B		7	4.5	Y	1	Stephan, C	D	
5.12	812923	4.8	S	AA	20	5			0.050	B		7				Green, D.W.E	A	
5.15	812924				15	7	0.75	70	0.32	N	4	40	7.0	Y	1	Keen, R		
5.16	812925	4.7	B	78	30	3			EY				7.0	Y	1	Keen, R		
5.16	812926	5.2		SKY&TEL	15.0	1			EY				6.0	Y	1	McBride, P		
5.17	812927	5.3			15	5	1.0	70	0.040	B		8	7.0	Y	1	Keen, R	E	
5.18	812928				15	6	1.7	70	0.080	B		11	7.0	Y	1	Keen, R		
5.19	812929	6.3	S	54	8.8	5			0.203	SC	10	51	6.4	Y	1	Sanchez, A	F	
5.236	812930	5.7	B	54					EY			1	6.3	Y	2	Krisciunas, K	G	
5.2444	812931	5.7	S	SAO	19	14			0.080	B		20	5.8	Y	3	Machholz, D	H	
5.403	812932	6.0	S	54	10	5			0.153	N	8.6	33	3.0	Y	1	Iwaki, Y		
5.41	812933	5.9	B	M	9				0.12	N		40				Knyazyuk, N		
5.414	812934	6.0	M	54	5.5	5			0.10	N	10	55	3.5C	Y	1	Kato, T		
5.419	812935	5.5	M	54	14	5			0.030	B		8	3.5C	Y	1	Kato, T		
5.42	812936	6.0	S	54		2			0.050	B		7	5.5C	Y	1	Matchett, V		
5.44	812937	6.3	B	54	4.8	6			0.20	N	5	36		Y	1	Curtis, D	I	
5.44	812938	4.7	S	54, 55					EY			6		Y	1	Seargent, D		
5.44	812939				18	7			0.08	B		15				Seargent, D		
5.46	812940	5.9	B		15	6			0.05	B		10	4.5	N	1	Uda, K		
5.462	812941	6.5	B	54	15	4			0.12	N	6	40	4.5C	Y	1	Hayashi, H		
5.462	812942	5.6	B	54					0.05	B		7				Hayashi, H		
5.487	812943				12.3	5		90	0.32	N	8	150		Y	1	Tregaskis, T.B	J	
5.491	812944	5.7	S	54	8.6	3			0.05	B		10		Y	1	Tregaskis, T.B	K	
5.51	812945	5.7	S	54					0.050	B		7		Y		Jones, A	L	
5.51	812946	6.1	S		20	5			0.08	B		11	3.0	N	1	Momose, M		
5.545	812947	6.2	B	54					0.07	B		10	5.0	Y	1	Dale, M		
5.575	812948	5.8	M	54, 78	13	6			0.08	B		11	4.5C	N	1	Mitsuma, S		
5.58	812949	5.8	B	M	13				0.05	B		7				Konstantinov, S		
5.58	812950	5.0	V	M					EY							Poroshin, A		
5.587	812951	5.5	M	54	25	5			0.035	B		7	5	Y	1	Watanabe, A		
5.59	812952	5.6	M	54		4			0.05	B		7	4.0	Y	2	Suzuki, F		
5.59	812953	5.7	S	54	15	6			0.07	B		10	4.5	Y	1	Yasuki, M		
5.597	812954	5.9	B	54	15	5			0.060	B		10	3.5	Y	1	Moriya, M		
5.60	812955	5.8	B	AA	3	5			0.06	B		20		Y	1	Campbell, R.N	M	
5.604	812956	5.9	S	54	22	5	0.50	90	0.07	B		10	3.5	Y	1	Kobayashi, J	N	
5.63	812957	6.0	B	54		6			0.15	N	8.6	41	4.0	Y	4	Makino, J		
5.63	812958	5.8	B	E	15				0.03	B		8				Zagaynov, V.A		
5.64	812959	5.9	B	E	16				0.03	B		8				Zagaynov, V.A		
5.656	812960	6.1	M	54	7	7			0.060	R	15	45	2.8C	Y	1	Purvinakis, R		
5.66	812961	5.8	B	E	17				0.03	B		8				Zagaynov, V.A		
5.68	812962	5.6	B	E	17				0.03	B		8				Zagaynov, V.A		
5.701	812963	6.0	B	54	12	7			0.080	R	6.3	50		Y	1	Pfittner, E	O	
5.708	812964	5.3	B	IHW, SAO					0.080	B		20	3.5	Y	1	Guthrie, O	P	
5.71	812965	5.7	B	E	17				0.03	B		8				Zagaynov, V.A		
5.71	812966	6.2	B	M		7	0.1	110	0.14	R	14	200				Shilov, S	Q	
5.712	812967	5.3	M	AAVSO	17	8	0.5		0.063	R	13.3	52				Kosa-Kiss, A	R	
5.715	812968	5.9	M	78	6	3			0.064	R	12.5	31	4.5C	Y	1	Szymocha, M		
5.719	812969	5.6	B	54	19.3	4			0.03	B		8	6.0	Y	1	Hasubick, W		
5.719	812970	5.7	B	54	17.3	4			0.10	B		14	6.0	Y	1	Hasubick, W		
5.723	812971	5.9							0.030	B		8				Ratz, M		
5.729	812972	5.8			8	6			0.08	B		15	4.2	Y	1	Dietrich, M	S	
5.729	812973	6.3	M	54	25	4			0.050	B		10	5.3C	Y	1	Honko, M		
5.729	812974	6.3	M	54	20	4			0.050	B		10	5.3C	Y	2	Kosinski, J		
5.729	812975				8	2			0.064	R	6.3	20	3.0C	N	1	Maciejewski, W		
5.729	812976	5.4			3	5			0.114	N	7.9	30	3.5			Kerber, F	T	
5.729	812977	5.8							0.030	B		8				Ratz, K		
5.729	812978	5.3	B	54	5.1	4			0.080	R	15	39	5.1C	Y	1	Szulc, M		
5.738	812979	5.6	B	54	30	7			0.065	B		20	6.0	Y	1	McBain, J	U	
5.74	812980	5.0	B	54	20	7			0.050	B		10	4.5	N	1	Wagner, G		
5.740	812981	5.8			10	5			0.100	B		14	5.0	Y	2	Weissferdt, F	V	
5.742	812982	4.9	S	54	18	7	1.5	80	0.152	N	5	44	4.8	Y	2	Moeller, M	W	
5.749	812983	4.5	S	54	26	7	1	80	0.050	B		7	4.8	Y	2	Moeller, M	X	
5.75	812984	5.7	B	AA	17	6			0.050	B		7	5.0	N		Schmeer, P		
5.750	812985	5.6	B	54	17	4			0.050	B		10	5.5	Y	1	Kalla, K	Y	
5.75	812986	6.0		VAS 160	6	5			0.05	B		10	5.5	Y	1	Germann, R		
5.750	812987				6				0.150	N	5	30	5.5			Kalla, K	Z	
5.75	812988	6.4	B	DCS 5B	12	8			0.050	B		10	4.5C	N	1	van Munster, T		
5.756	812989	4.9	S	55	21.0	7			0.05	B		10	5.0	Y	1	Hurst, G.M		
5.760	812990	5.7	B	54	20	3	2	70	0.04	B		8		Y	1	Morrisby, A	a	
5.77	812991	5.7	B	M	6	5			0.07	N	8	33				Shitikov, A		
5.771	812992	6.3	B			4			0.050	B		10		CM	Y	1	Linke, H	
5.790	812993	5.8	B			3			0.080	R	6.2	12	5.5	Y	1	Lieder, F		
5.792	812994	5.5	B	54	20	5	0.17		0.102	R	14.7	60		Y	1	Medway, K	b	
5.792	812995	5.8							0.080	B		15	3	Y	1	Nagele, A	c	
5.792	812996	5.7	B	78		4			0.08	B		10	4.5C	Y	1	Paradowski, M		
5.792	812997	5.0	B	54	35	25			0.06	B		15	5.5	Y	2	Vincent, J	d	
5.793	812998	5.3	B	54	30	20			0.22	N	4	35	5.5	Y	2	Vincent, J	e	
5.799	812999	6.0	M	54	9	4			0.07	B		16	4.8C	N	1	Taylor, M.D	f	
5.806	813000	4.7			24	20			0.081	B		11	6	Y	1	Sternwarte Hof	S	
5.812	813001	5.8	B		14	8			0.030	B		8	5.0	Y	2	Kellner, A		
5.813	813002	6.2	S	CZ	10	3			0.05	R	10	13	6.0	Y	1	Polak, J		
5.819	813003	6.1	B		3	3	0.1		0.040	R	9	15	5.0C	Y	1	Winkler, R		
5.820	813004	5.1	B	54	20	7			0.20	SC	10	117	5.5	Y	1	Ward, A	g	
5.82	813005	6.0	S	54					0.050	B		7	5.5	Y	1	Spalding, G.H		
5.823	813006	5.5	S		12	5			0.050	B		16	4.4	Y	1	Nolle, M		
5.830	813007				6	4			0.130	N	8	40	5.5	Y	1	Lieder, F		
5.833	813008	7.1	M	CZ	10				0.05	B		7	4.5C	Y	1	Kourimsky, M		
5.833	813009	5.7	B	54		4			0.090	N	7.2	26	5.5	Y	1	Vohla, F		
5.839	813010	4.8	B	54	15	6			0.05	B		10	5.5	Y	1	Ward, A	g	
5.840	813011	5.8	M	AA	18	15	1.9	72	0.08	R		11	5.9	Y	1	Fleet, R.W	h	
5.84	813012	5.8	M	54	12	6			0.106	R	5.7	24				Keszthelyi, S	i	
5.840	813013	5.7	M	54	19	6			0.089	R	5.5	18	5.7	N	1	Ventura, F	j	
5.843	813014	5.5	B		14	5	0.33	74	0.07	B		20	6.0	Y	1	Enrich, G		
5.843	813015	5.5	B		19	5			0.03	B		8	6.0	Y	1	Filimon, E		
5.844	813016	5.5																

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Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
5.865	813019	6.4	B		5	5			0.200	N	7.2	36	5.0	Y	1	Lipski,P	l
5.868	813020	6.2	B	54	12	5			0.113	N	8	22	6.0	Y	1	Schambeck,C.M	
5.875	813021	6.0	B	CZ		3			0.03	B		6	5.5	Y	1	Vacilik,F	m
5.878	813022	5.6	M	54	31	6		64	0.05	B		12	4	Y	1	Tanti,T	n
5.88	813023	5.5	M	54	19	5			0.05	B		10	5.0	N	1	Bottger,B	
5.882	813024	4.8	S	55, 54	21.0	8			0.05	B		10	5.5	Y	1	Hurst,G.M	
5.889	813025	6.2	B	54	14	10	5	0.3	0.200	R	15	120	6.0	Y	1	Kalauch,K.-D	
5.889	813026	5.2	S	54, 78	9.2	7.8	7		0.05	B		10	5.5	Y	3	Abbott,J	o
5.893	813027	5.5	S	54						EY			5.5	Y	1	Hurst,G.M	
5.896	813028	7.5	B	54	4.4	6			0.060	R	15	45	5.5	Y	1	Koschny,D	
5.899	813029				21		0.7	77	0.08	B		15	5.5	Y	1	Hurst,G.M	A
5.906	813030	5.9	M	54					0.06	R	4.5	10	4.5	Y	1	Chodorowski,F	
5.906	813031	5.6	B	54	12.8	5			0.08	B		11	5.0	Y	1	Gainsford,M.J	
5.910	813032				10	3			0.064	R	12	32		Y	1	Chodorowski,F	
5.91	813033	4.8	V	54	60	2	1.30	71		EY		6	0	Y	2	Merlin,J.-C	
5.91	813034	5.9	B	54	5	5	1.0		0.050	B		12	3.5	Y	1	Mosch,J	A
5.915	813035	5.7	S	54	4.5	7		80	0.25	N	6	60	5.0	Y	1	Gainsford,M.J	P
5.916	813036	6.4			17	4			0.050	R	11	22	4.5	Y	1	Kliche,J	
5.921	813037	5.0	B	54	20	7			0.06	R		15	5.5	Y	1	Ward,A	g
5.948	813038	5.0	S	50		6			0.050	B		7	5.0	N	1	Lunde,R	Y
5.951	813039	8.5	B	54	6	4			0.203	SC	10	80	5.5	Y	1	Farrington,W.R	Z
5.955	813040	5.4	S	54, 75	16	6	0.08	45	0.065	B		12	5.5	Y	1	Foulkes,M	q
5.96	813041	5.3	S	54					0.08	B		10	5.0		1	Shanklin,J.D	
5.96	813042	5.7			11				0.034	B		9			1	Pereira,A	r
5.994	813043	5.0	B	54	25	7			0.20	SC	10	77	5.5	Y	1	Hodonsky,K	s
5.997	813044	5.4	S	54, 78	12	3	0.6	80	0.050	B		10	5.9	Y	2	Rogers,J.H	t

NOTE A Coma diameter approximate.  
 NOTE B Straight, narrow type I tail.  
 NOTE C Very obvious tail, only 2' wide.  
 NOTE D Intermittent clouds - some haze.  
 NOTE E Modified Sidgwick method used.  
 NOTE F First naked eye observation. MV central condensation = 6.1 (. [sic])  
 NOTE G Comparison stars 55, 60.  
 NOTE H Coma diameter = 19'x14', elongated E-W.  
 NOTE I Faint stellar nucleus suspected.  
 NOTE J Suggestion of tail, PA approximate. Clear. (Observer gave limit as approximately 14.5. Ed.)  
 NOTE K Slight wind. (Observer gave limit as approximately 9.5. Ed.)  
 NOTE L Comet low altitude.  
 NOTE M Seeing 3/5.  
 NOTE N Bright sky.  
 NOTE O (Observer gave limit as 10.5. Ed.)  
 NOTE P Beginnings of tail. (Translated by IHW staff. Ed.)  
 NOTE Q PA approximate.  
 NOTE R 7.1 mag. nucleus. Tail PA 105; 65 deg. Naked eye.  
 NOTE S (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE T Haze. (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE U Coma circular shaped.  
 NOTE V Cloudy. (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE W Hazy.  
 NOTE X Naked eye.  
 NOTE Y Some haze.  
 NOTE Z No tail.  
 NOTE a Central cond. of mag. approximately 8; cirrus.  
 NOTE b (Observer gave limit as 12.5. Ed.)  
 NOTE c (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are SAO 109224, 109152, 91832, 109087.  
 NOTE d Comp. stars 4.8 mag. and 5.5 mag.  
 NOTE e Visible to naked eye.  
 NOTE f Seeing Antoniadi III. Noncirc. coma.  
 NOTE g Very clear.  
 NOTE h 24"x22" coma, averted vision.  
 NOTE i + 7x50 B and 10 mag. nucleus. [sic]  
 NOTE j Area immediately east of the coma to a distance of between 30'-40' is definitely more hazy than the corresponding area west of the coma. It appears to be a very wide tail.  
 NOTE k (Observer indicated "A" method [Argelander?]. Ed.) Coma diameter approximate.  
 NOTE l Oval.  
 NOTE m Probably well adapted, not dark adapted, of course - there is no dark sky in Czechoslovakia.  
 NOTE n Seeing good, transparency good. Clouds.  
 NOTE o Comparison stars 4.0, 5.1, 5.5. Adequate defocusing of comparison stars was only achieved by using one eyepiece of the 10x50 binoculars.  
 NOTE p Tail length = ?, PA uncertain.  
 NOTE q Comet so large that had [sic] difficulty in completely defocusing the stars with the binoculars to make the magnitude estimates.  
 NOTE r (Observer gave limit as 8.8. Ed.)  
 NOTE s No tail seen.  
 NOTE t Coma pear-shaped, very faint narrow tail. Chart 101 also used.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	Durm	Lim	Site	Observer(s)	Notes
5.059	830381	0.38	0.254	N	5.6	60,120,160	21	6.8	2	Knisely,D	A
5.198	830382	0.15	0.23	R	12	122,250,600			1	O'Meara,S.J	B
5.201	830383	0.33	0.20	N	6	96,135	10	5.2	1	Wilson,A.M	C
5.712	830384	0.88	0.063	R	13.3	52				Kosa-Kiss,A	D
5.742	830385	0.9	0.063	R	13.3	52			1	Csukas,M	E
5.830	830386	1.9	0.05	B		10, 15	210	5.5	1	Hurst,G.M	F
5.842	830387	0.93	0.106	R	5.7	24		9	1	Keszthelyi,S	
5.844	830388	1.25	0.080	B		15	30	5.0	3	Lucius,D	
5.896	830389	0.25	0.356	SC	11	200			1	Verdenet,M	G
5.908	830390	0.25	0.298	N	5	40, 65,179	15	6.2	1	Stott,D	H
5.939	830391	0.43	0.090	M	11	40,120	17	5.1	1	Foulkes,M	I
5.958	830392	2	0.065	B		12	10	5.1	1	Foulkes,M	J
5.960	830393	0.5	0.203	SC	10	80	25	5.5	1	Farrington,W.R	K
5.993	830394		0.203	SC	10	70		6.0		Williams,D.J	L

NOTE A Visible to naked eye. Central condensation stellar magn. 7.8 surrounded by halo 50" arc wide. Outer edge of coma very diffuse with hints of brightenings at PA 20 and PA 95. Faint narrow central spine noted in tail at PA 80 extending from nucleus down tail to 10' arc from nucleus. Possible faint narrow spikes in coma on both sides of tail. Faint broad outer tail has width of 5 to 7 min. arc tapering slightly with slight brightening 1/2 degree from nucleus. Magnification of 240x also used.  
 NOTE B (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE C Double nucleus observed. 3 faint stars included in coma.  
 NOTE D Features at PA 105, PA 65, PA 155, and PA 45. Schematic drawing. (Duration not indicated. Time of observation is end time. Ed.)

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- NOTE E Halo diameter = 14'; DC = 8; tail at PA 141, 33' length. A 31' tail had PA 141 12' to nucleus, PA 162 22' to nucleus, PA 173 40' to nucleus. [sic] (Duration not indicated. Time of observation is end time. Ed.) Schematic drawing.
- NOTE F ZLM 5.5 improving to 6.0. Very well condensed circular coma. Tail, broad and diffuse PA 77 deg. for 42'. Star involved in edge of coma PA 288 deg. from nuclear region. Composite drawing. Bright details with 10x50 binoculars and tail added from observation with 15x80 binoculars.
- NOTE G (Duration not indicated. Time of observation is assumed to be start time. Additional drawing submitted made using 11x80 binoculars (1.96'/mm). Ed.)
- NOTE H Tail at PA 83 deg. Seeing too poor for useful high power work but tail shows well now. Still seems very thin.
- NOTE I Diameter 10', DC = 6. Star seen at approximately PA 270 deg. Coma had 3 distinct areas of brightness. The central 'spot' was the brightest. This was elliptical in approximately PA 90-270. Outer coma circular. Beyond the fairly distinct outer boundary, the coma faded and became indistinct.
- NOTE J Central condensation slightly elliptical at PA 45-225. Outer edge nebulous. A faint extension was glimpsed towards PA 45. The comet has now become so large that the binoculars will not completely defocus the stars for the magnitude estimates. Diameter 16'. DC = 6. Tail 5' at PA 45.
- NOTE K DC 4, mag. 8.5 on this date. I saw no evidence of a tail. Several times I saw the coma brightness fluctuate by approx. 0.3 mag. This was not due to seeing. When the coma passed from in front of star I saw no change in brightness.
- NOTE L Clear, but the neighbor's chimney smoke is bad. Rough on the eyes. Halley is becoming very easy to find. Nucleus is very compact and star-like. A simple object to spot with the 10x50 binoculars. (Duration not indicated. Time of observation is start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
5.140	850345	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	S	2/P	1	Dilsizian,R	A
5.179	850346	0.205	3.8		10.0 x 6.7	15.00	Kodak VR 200		N	T	3/P	1	Cunningham,J	B
5.200	850347	1.829	4.5	0.406	1.1 x 0.8	5.00	Kodak VR 200		N	T	4/P	1	Cunningham,J	B
5.218	850348	1.829	4.5	0.406	1.1 x 0.8	5.00	Kodak VR 200		N	T	5/P	1	Cunningham,J	B
5.741	850349	0.050	1.8		39.6 x 27.0	5.42	Kodak Tri-X	400/27	N	O	2/P	1	Grogel,O	C
5.928	850350	0.210	4		9.8 x 6.5	3.97	Kodak Tri-X	400/	N	O	3/P	1	Ward,A	
5.961	850351	0.500	5.6		4.1 x 2.7	5.33	Kodak Tri-X	400/	N	O	8/P	1	Ward,A	

NOTE A Exposures limited below 5 minutes to allow for stellar guiding with a minimum of "proper motion" distortion in resolution.

NOTE B Film "push" processed from ISO 200 to 800.

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

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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	
6.042	813045	6.0	B	54	16 12	5		50	0.05	B		7	6.0C	Y	10	Chmielewski,W		
6.063	813046	6.2	B	54	25	3			0.152	R	5	24	4.4	N	1	Fox,J.H	A	
6.076	813047	6.2	M	54	3.9	6			0.114	N	8	45	4.0	N	1	Mac Kenzie,G	B	
6.085	813048	5.4	M	78	28	7	0.75	45	0.32	N	4.4	57	6.1	Y	1	Arsail,R.B		
6.10	813049	5.6	B	54	14	6			0.080	B		20	5.0	Y		Kronk,G		
6.1132	813050	5.7	S	SAO	21	8	0.38	76	0.254	N	3.8	32	6.2		1	Machholz,D		
6.1160	813051	5.4	SAO		10	5				EY			6.2		1	Machholz,D		
6.1174	813052	5.7	S	SAO	20	6			0.080	B		20	6.2		1	Machholz,D		
6.13	813053	6.2	B	54	9.7	8		71	0.335	N	4.5	56	5.0	Y		Kronk,G		
6.14	813054	4.0	B	54, 78	90	2				EY			6.5	Y	7	Morris,C.S		
6.145	813055	5.5	B	54	15.0	9	0.75	45	0.15	N	8	30	6.0	Y	1	McBride,P	C	
6.145	813056	5.5	B	54	15.0	1				EY			6.0	Y	1	McBride,P		
6.16	813057	4.5	M	54, 78	20	7	2.5	70	0.050	R		8	6.5	Y	7	Morris,C.S		
6.17	813058	4.5	M	54, 78	16	7	2.5	70	0.080	B		20	6.5	Y	7	Morris,C.S		
6.171	813059	5.7	M	54	10.3	6	0.5	250	0.050	B	5	7		Y	1	Jeffrey,J	D	
6.229	813060	4.9	B	54	15	6			0.05	B		10	5	Y	1	Ward,A	E	
6.244	813061	5.6	S	78	12	6			0.05	B		10	4.4	N	2	Saxon,V.P		
6.28	813062	5.2	B	54						EY			6	Y	3	Hale,A		
6.28	813063	5.2	M	54			1.5	75	0.05	B		10	6	Y	3	Hale,A		
6.281	813064	6.2	S	54, 78		6			0.05	B		7	5.0	Y	1	Bracken,R	F	
6.39	813065	5.6	S	78, 54	11	6			0.049	B		3	5.5	Y	1	Jones,A	G	
6.42	813066	8.8	S	SAO					0.317	N	5	86				Jones,A	H	
6.535	813067	5.4	S	101	20	5	0.33	80	0.07	B		10	3.0	Y	1	Kobayashi,J		
6.563	813068	5.9	M	54					0.060	R	15	45	5.8	Y	1	Purviskis,R		
6.58	813069	6.0	B	M	12				0.05	B		7				Konstantinov,S		
6.63	813070	5.2	B	E	20	5			0.05	B		7				Mormil,V		
6.65	813071	5.5	S	54	20	6			0.15	N	5.3	32	5.5	Y	1	Oka,A		
6.670	813072	5.9	M	78					0.06	R	4.5	10	6.1	Y	1	Chodorowski,F		
6.67	813073	5.3	B	E	20	5			0.05	B		7				Mormil,V		
6.674	813074				10	3			0.064	R	12	32	6.1	Y	1	Chodorowski,F		
6.68	813075	6.3	B	M	20				0.04	R		6	18			Drapun,A		
6.69	813076	5.7	B	AAVSO					0.11	R						Churyumov,K		
6.694	813077	5.2	M	AAVSO	15	8			0.063	R	13.3	52				Kosa-Kiss,A	I	
6.70	813078	6.3	B	M	20	4			0.04	R	3	18				Drapun,A		
6.71	813079	6.2	B	M	6.5	5	0.1	110	0.10	N	10	169				Shilov,S	J	
6.71	813080	5.4	B	E	20	5			0.05	B		7				Mormil,V		
6.718	813081	5.0	S	54	18	6			0.050	B		7	6.0	Y	1	Meozzi,D		
6.719	813082	5.7	M	CZ	20	7			0.080	B		10	4.5	Y	1	Bilek,V		
6.719	813083	5.9	B		4	2	0.3		0.030	B		8	5.0C	Y	1	Winkler,R		
6.72	813084	5.3	B	E	20	5			0.05	B		7				Mormil,V		
6.722	813085	6.2	B	54	8	6	0.08		0.08	B		20	6	Y	2	Knain,E		
6.726	813086	5.9	M	CZ	12	6			0.05	B		7	4.8	N	1	Silhan,J		
6.73	813087	6.5	B	AAVSO					0.20	R						Churyumov,K		
6.73	813088	5.2	B	AAVSO		6			0.05	B		7				Chernis,K		
6.740	813089	5.9	B	54					0.050	B		7	4.0C	N	1	Ruiz,J		
6.740	813090	5.3	B	CZ		4			0.08	B		10	5.7	Y	1	Janecek,V		
6.74	813091	5.0	S	DCS5B6A	20	6			0.050	B		10	5.5	N	3	Comello,G	K	
6.750	813092			54	5	4			0.208	N	5.8	48	4.0C	N	1	Ruiz,J		
6.750	813093	6.0	S		8	5	0.50	95	0.05	B		10	5.5	Y	1	Bremseth,P.-J		
6.75	813094	5.2	B	E	20	5			0.05	B		7				Mormil,V		
6.753	813095	5.4	M	CZ	5	6			0.05	B		7	5.6	Y	1	Pravec,P		
6.76	813096	4.3	S	101		6	1.0	75	0.05	B		10	5.5	Y	2	Bouma,R.J		
6.760	813097	6.1	M	78	15	3	0.45	298	0.050	B		10	4.5	Y	1	Lozano,L		
6.76	813098	5.8	B	54		6			0.050	B		12	4.0	Y	1	Mosch,J		
6.767	813099	6.2	B	54		4			0.030	B		8	4.0C	N	1	Richert,M		
6.77	813100	4.5	S	DCS 6A	20	5	1.5	90	0.040	B		7	6	N	2	Bus,E.P		
6.771	813101	4.9	B	54	35	25			0.105	R	15	86	5.5	Y	2	Vincent,J	F	
6.774	813102			54	8	6			0.150	R	15	56	4.0C	N	1	Richert,M	L	
6.781	813103	5.7	M	CZ					0.10	B		25	5.5C	Y	1	Valasek,V	M	
6.781	813104	5.5	B	54	10	4			0.040	B		8	6.0	Y	2	Weissferdt,F	N	
6.785	813105	5.8	M	CZ	20	6	1	70	0.055	R		12	6.0	Y	1	Silhan,J		
6.788	813106	5.5			12				0.035	B		7	5.0C	N	1	Marx,H	O	
6.79	813107	5.4	B	E	20	5			0.05	B		7				Mormil,V		
6.792	813108	6.3	B	78	8	4			0.035	B		7	5.5C	N	1	Sciezor,T	P	
6.792	813109	6.3	B			4			0.050	B		10		C	Y	1	Linke,H	
6.799	813110	5.9	B		5.0	5			0.063	R	13.3	44	6.0	Y	1	Bartnik,M		
6.799	813111	5.5	S		14	5			0.050	B		7	5.2	Y	1	Nolle,M		
6.802	813112	6.1	S	78		5			0.05	B		7		Y	1	Dziura,W		
6.804	813113	6.5	M		4.4	5	0.08	85	0.153	N	8.5	65		Y	2	Torres,E	Q	
6.806	813114				11	8	0.8	75	0.22	N		90	5.9	Y	1	Fleet,R.W		
6.809	813115	5.6	B	54	11.6	6			0.050	B		10	6.0	Y	1	Rossi,L		
6.813	813116	6.2	S	CZ	13	3			0.05	R	10	13	6.2	Y	1	Polak,J		
6.830	813117	5.6	B	54		9				EY			6.1	Y	1	Fleet,R.W		
6.83	813118	5.4	B	E	20	5			0.05	B		7				Mormil,V		
6.833	813119	5.8	M	54	20	6	1.9	74	0.08	B		11	6.1	Y	1	Fleet,R.W	R	
6.84	813120	5.5	B	AA	20	6			0.050	B		7	6.0	N		Schmeer,P	S	
6.844	813121	6.2	M	54		4			0.08	B		10	4.0C	N	1	Rapavy,P		
6.847	813122	5.9	M	54	14	6	3	60	0.04	B		12	5.8	Y	1	Henshaw,C	T	
6.847	813123	5.9	B	54, 78	7.5	7		50	0.080	R	6.3	50		Y	1	Pfritzer,E	U	
6.854	813124	5.8	B	54	4.5	6			0.090	N	7.2	26	6.0	Y	1	Vohla,F		
6.86	813125	5.8							0.034	B		9				Pereira,A	V	
6.865	813126	6.7	M	CZ	11				0.05	B		7	5.0C	Y	1	Kourimsky,M		
6.875	813127	6.2				4			0.080	B		15	3	Y	1	Nagele,A	W	
6.875	813128	6.3	B	CZ	13	6			0.10	O		25	6.0C	Y	1	Micek,I		
6.878	813129	6.0	M	CZ	20	5			0.10	B		25	5.8	Y	1	Hajek,P		
6.878	813130	5.6	B	54	21.7	4			0.03	B		8	6.0	Y	1	Hasubick,W		
6.878	813131	5.5	B	54		4												

NOTE A SAO 092182 comparison star.

NOTE B Comet seemed fainter in binoculars than Dec. 2.003 (due to haze). Star-like coma was more difficult to observe.

NOTE C 8.5 mag. nucleus.

NOTE D Possible second tail in PA 110:.

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NOTE E First sighting of the comet with the naked eye for me. A faint tail was seen about 1/2 degree long with a PA of 250. The tail was straight and seemed to have a brighter narrow central area surrounded by a fainter glow. No details seen in the central coma area. Limit 14.7.

NOTE F Good seeing.

NOTE G Wisp of tail?

NOTE H Condensation.

NOTE I Naked eye!

NOTE J PA approximate.

NOTE K Coma diameter approximate.

NOTE L Comp. stars 4.8 and 5.5: comet pear shape.

NOTE M Adapted to the actual (rather bad, street lights visible) observing conditions.

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

NOTE O Comparison stars 35 Psc, 38 Psc. (Observer indicated "A" method [Argelander?]. Ed.)

NOTE P Very clear skies.

NOTE Q (Observer gave limit as 11.0. Ed.)

NOTE R 25'x20' coma, averted vision.

NOTE S Also seen with naked eye.

NOTE T Tail length and PA from sketch.

NOTE U First beginnings of a tail at approximately PA 50 deg. (Observer gave limit as 10.5. Ed.)

NOTE V (Observer gave limit as 8.5. Ed.)

NOTE W (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are SAO 109100, 109087, 109152, 109111, 109102.

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

NOTE Y Too vague for dia. and DC.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
6.073	830395	0.24	0.114	N	8	45,150	29	4.0	1	Mac Kenzie,G	
6.087	830396	0.6	0.203	R	13		10	4.4	1	Fox,J.H	A
6.140	830397		0.203	SC	10	81			2	Lohvinko,T.W	B
6.256	830398		0.254	N	5.6	60,120,160	17	6.5	2	Knisely,D	C
6.712	830399	1.2	0.080	B		20	20	6	1	Knain,E	D
6.806	830400	0.7	0.153	N	8.5	65	40		2	Cifuentes,E	E
6.826	830401	0.25	0.356	SC	11	200			1	Verdenet,M	F

NOTE A N-S bar definite with averted vision, but difficult to see directly. Coma has sharp boundary to W, fading gradually to E.

NOTE B On this date the comet is observed to have a diameter of 175.61" and an integrated magnitude of 6.2 (check stars: HR 69 and HR 72). The comet is much dimmer than November 29, 1985.

NOTE C Central core of coma very bright. "Fish head" type form seen vaguely. Coma shows hints of faint radial streamers. Central condensation 7th or 8th magnitude and poorly defined. Coma brightness fairly uniform out to 1/3 coma radius except for central condensation. Tail is narrow with north edge slightly better defined than south edge. Tail is fainter than on 05/12/85. Magnification of 240x also used.

NOTE D Bright point in coma. Dark patches seen in coma, but unclearly.

NOTE E I observed for the first time a beginning of a typical comet tail, estimated 4.5 arc min. length, in an easterly direction. (Observer gave limit as 11.0. Translated by IHN staff. Ed.)

NOTE F (Duration not indicated. Time of observation is assumed to be start time. Additional drawing submitted made using 11x80 binoculars. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
6.193	850352	0.500	3.6	0.140	4.1 x 2.7	10.00	3M 1000	1000/	N	O	2/N	17	Edberg,S.J	
6.193	850353	0.260	5.2	0.050	7.9 x 5.3	10.00	Ilford HP 5	500/	N	O	36/C	17	Edberg,S.J	
6.199	850354	0.500	3.6	0.140	4.1 x 2.7	5.00	3M 1000	1000/	N	O	3/N	17	Edberg,S.J	
6.199	850355	0.260	5.2	0.050	7.9 x 5.3	5.00	Ilford HP 5	500/	N	O	37/C	17	Edberg,S.J	
6.204	850356	0.500	3.6	0.140	4.1 x 2.7	5.00	3M 1000	1000/	N	O	4/N	17	Edberg,S.J	
6.204	850357	0.260	5.2	0.050	7.9 x 5.3	5.00	Ilford HP 5	500/	N	O	39/C	17	Edberg,S.J	
6.207	850358	0.500	3.6	0.140	4.1 x 2.7	1.00	3M 1000	1000/	N	O	5/N	17	Edberg,S.J	
6.207	850359	0.260	5.2	0.050	7.9 x 5.3	1.00	Ilford HP 5	500/	N	O	40/C	17	Edberg,S.J	
6.208	850360	0.500	3.6	0.140	4.1 x 2.7	1.00	3M 1000	1000/	N	O	6/N	17	Edberg,S.J	
6.208	850361	0.260	5.2	0.050	7.9 x 5.3	1.00	Ilford HP 5	500/	N	O	41/C	17	Edberg,S.J	
6.210	850362	0.300	1.5	0.200	6.9 x 4.6	4.00	Kodak 2415		Y	S	1/P	1	Yen,B	A
6.214	850363	0.500	3.6	0.140	4.1 x 2.7	5.00	3M 1000	1000/	N	O	7/N	17	Edberg,S.J	
6.214	850364	0.260	5.2	0.050	7.9 x 5.3	5.00	Ilford HP 5	500/	N	O	42/C	17	Edberg,S.J	
6.219	850365	0.260	5.2	0.050	7.9 x 5.3	1.00	3M 1000	1000/	N	O	8/N	17	Edberg,S.J	
6.222	850366	0.260	5.2	0.050	7.9 x 5.3	5.00	3M 1000	1000/	N	O	9/N	17	Edberg,S.J	
6.228	850367	0.260	5.2	0.050	7.9 x 5.3	10.00	3M 1000	1000/	N	O	10/N	17	Edberg,S.J	
6.234	850368	0.050	2		39.6 x 27.0	1.00	3M 1000	1000/	N	O	11/N	17	Edberg,S.J	
6.239	850369	0.200	4		10.3 x 6.9	5.00	3M 1000	1000/	N	O	12/N	17	Edberg,S.J	
6.243	850370	0.200	5.6		10.3 x 6.9	5.00	3M 1000	1000/	N	O	13/N	17	Edberg,S.J	
6.903	850371	0.803	2.1	0.350	2.6 x 1.7	0.50	Kodak 103a-F		N	M	17/P	1	Guarro,J	
6.907	850372	0.803	2.1	0.350	2.6 x 1.7	1.00	Kodak 103a-F		N	M	18/P	1	Guarro,J	
6.913	850373	0.803	2.1	0.350	2.6 x 1.7	7.00	Kodak 103a-F		N	M	19/P	1	Guarro,J	
6.944	850374	0.400	5.5		5.2 x 3.4	12.00	ORWO NP 27	400/27	N	O	10/N	1	Kamenickj',M	B
6.992	850375	0.135	2.8		15.2 x 10.2	20.00	Kodak 2415		Y	X	1/P	2	Portela,A	

NOTE A Start time approximate. (Observer's image identifier is 6. Ed.) Instrument is Schmidt camera.

NOTE B 6x6 cm format film used.

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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	
7.021	813141	6.1	M	78	3.9	5			0.114	N	8	45	4.9	N	1	Mac Kenzie,G	A	
7.023	813142	5.2	S	78, 101	19				0.035	B		7	5.7	Y	3	Morrison,W	B	
7.031	813143	5.1	B	54	20	7			0.06	R		25	5	Y	1	Ward,A		
7.035	813144	5.3		54						EY					2	de Assis Neto,V.F		
7.035	813145			54	19.6	7	1.4	75	0.07	B		10	6.5	Y	2	de Assis Neto,V.F		
7.04	813146	5.6	B	54	16	6			0.080	B		20	5.5	Y		Kronk,G	C	
7.042	813147	5.5	B	78					0.080	B		20	5.7	Y		Smith,D		
7.05	813148	6.2	B	54	9.0	8		75	0.335	N	4.5	56	5.5	Y		Kronk,G	C	
7.08	813149	5.9	B	78	20	2			0.030	B		7	6.0	Y	1	Jacobson,E	D	
7.083	813150	5.1		34	30	3			0.030	B		9	5.7	Y	1	Luthen,H		
7.083	813151	5.4	B	54	15.0	9	1	45	0.15	N	8	30	5.9	N	1	McBride,P	E	
7.087	813152	5.5	M	54	5.5	8	0.5	90	0.203	N	8	128	5.5	Y	1	Hannon,J		
7.10	813153	4.5	M	54, 78	20	7			0.050	R		8	5.5	Y	14	Morris,C.S		
7.10	813154	4.5	M	54, 78	16	7	1.5	70	0.080	R		20	5.5	Y	14	Morris,C.S		
7.104	813155	7.0	M	55					0.035	B		7	3.5C	N	2	Smith,A		
7.117	813156	5.9	M	54	20.0	6			0.05	B		12	6.3	Y	1	Knight,S		
7.117	813157				20.0	6	0.5	77	0.254	N	5.6	38	6.3	Y	1	Knight,S	F	
7.117	813158				22.0				0.254	N	5.6	38	6.3	Y	1	Knight,S	G	
7.122	813159	5.4	M	78	9	5			0.050	B		7	4.6	Y	1	Robertson,T		
7.125	813160	6.1	B	54	30	3			0.050	B		10	6.0	Y	1	Stapleton,J	H	
7.132	813161				30	7			0.108	N	8.5	36	6.0	Y	1	Stapleton,J	I	
7.221	813162	5.8	M	78	9.5	5			0.06	B		20	4.4C	N	1	de la Rosa Jr,A	J	
7.2361	813163	4.8	M	78	10	6	0.62	69	0.05	B		7	5.8	Y	5	Cook,A.J		
7.25	813164	4.8	B	78					EY						1	Keen,R		
7.25	813165	5.2	B	78	20	5	1.2	70	0.040	B		8	6.5	Y	1	Keen,R	K	
7.410	813166	5.8	M	78	7	5			0.254	N	5.6	158	6.0	Y	1	Glassett,W	L	
7.44	813167	5.9	B	M	9.4	5			0.21	N		80			1	Knyazyuk,N		
7.464	813168	5.3	M	78	14	6			0.070	B		10	5.0C	Y	1	Kato,T		
7.480	813169	6.1	M	78	5	6			0.15	N	8.5	50	5.0C	Y	1	Kato,T		
7.482	813170	5.8	S	78		3	0.2	70	0.05	B		10		Y	1	Tregaskis,T.B	M	
7.490	813171	6.3	B	54, 78					0.07	B		10	4.0C	Y	2	Date,M		
7.493	813172				11	6		90	0.152	N	8	64		Y	1	Tregaskis,T.B	N	
7.50	813173	5.8	B	78	17	5	0.33		0.05	B		10	4.5	N	1	Uda,K		
7.51	813174	5.3	M	78	15	7	0	45	0.080	B		11	6	Y	2	Watanabe,N		
7.522	813175	5.6	M	78	14	6	0.3	70	0.070	B		10	5.0C	Y	1	Kato,T		
7.55	813176	5.5			25	7			0.12	B		20	6.0	Y	1	Washi,S	O	
7.56	813177	5.0			15	7			0.23		4.4	40	4.0	Y	1	Washi,I	P	
7.583	813178	5.5	S	101	17	5	0.50	90	0.07	B		10	2.5	Y	1	Kobayashi,J		
7.603	813179	5.5	B	78	30				0.05	B		7	6.0	Y	2	Hayashi,H		
7.62	813180	5.6	S	78	15	6			0.07	B		10	5.5	Y	1	Yasuki,M		
7.69	813181	6.3	B	M	5.7	2			0.07	N	8	33				Yurchenko,Yu		
7.705	813182	5.8	M	54	16	10			0.08	B		11	4.5	Y	1	Gubo,H		
7.710	813183				30	5		75	0.080	R	6.3	20	5.7	Y	1	Luthen,H	Q	
7.71	813184	6.3	M	E	27	6			0.04	B		12				Maydik,A		
7.713	813185	4.8	S	78	15	6			0.050	B		7	6.2	Y	1	Meozzi,D		
7.719	813186	5.4	S	78	6	7			0.050	B		7	4.0C	N	1	Piccinini,M	R	
7.72	813187	6.6	B	78	10.9	7.3			0.20	N	6	31	5.5	N	1	Jahn,J	S	
7.72	813188	6.1	B	78	8	6			0.08	B		20	5.5	Y	1	Speil,J		
7.729	813189	4.9	S	78	10.0	6			0.140	SN	3.6	19	6.2	Y	1	Meozzi,D		
7.733	813190	5.7		78		9			EY			6.0		Y	1	Fleet,R.W		
7.733	813191	5.7	S	78	16	7			0.065	B		12	5.0	Y	1	Foulkes,M	T	
7.736	813192	5.9	M	78	20	15	1.2	73	0.08	B		11	6.0	Y	1	Fleet,R.W	U	
7.736	813193	5.2	B	54	20	7			0.06	R		25	4.5	Y	1	Ward,A		
7.74	813194	5.9	S	54					0.08	B		10	5.7		1	Shanklin,J.D		
7.74	813195	5.9	S	54					0.05	B		7	5.7		1	Shanklin,J.D		
7.74	813196	5.7	S	54					EY						1	Shanklin,J.D		
7.743	813197	6.1	M	78	14	8	0.3	74	0.075	R	16	50	6.0	Y	1	Fleet,R.W		
7.748	813198	5.5	S	54	14	5			0.05	B		7	5	Y	2	Gainsford,M.J		
7.75	813199	5.5	S	DCS5B6A	20	6			0.080	B		15	4.5C	N	1	Zanstra,M.T		
7.753	813200	4.8	S	54	19.2	7			0.05	B		10	5.5	Y	2	Burst,G.M		
7.76	813201	6.0	S	DCS 5B	15	5			0.050	B		7	5.5C	N	1	Kuipers,G		
7.76	813202	4.3	S	101	12	6	1.5	65	0.05	B		10	6	Y	2	Bouma,R.J		
7.760	813203	6.3	M	78, 101	20	4			0.030	B		8	5.2C	Y	2	Kosinski,J		
7.76	813204	4.3		DCS 6A	25	4			EY			6		Y	2	Bus,E.P	V	
7.76	813205	5.2	S	DCS 7	6	5			0.080	B		15	5.5C	Y	1	Feijth,H		
7.76	813206	6.0	S	DCS 5B	15	5			0.050	B		7	5.5C	N	1	Kroon,B		
7.764	813207	5.3	B	78	5.1	4			0.080	R	15	39	5.4C	Y	1	Szulc,M		
7.766	813208	5.7	S	54	14	5		100	0.08	B		11	5.7	Y	3	Gainsford,M.J	W	
7.766	813209								EY			5.7		Y	3	Gainsford,M.J	X	
7.771	813210	5.1	B	54	20	7			0.06	R		25	5	Y	1	Ward,A		
7.78	813211	4.3	S	DCS 6A	20	5			0.018	B		3	6	Y	2	Bus,E.P		
7.785	813212	5.5	B	54, 78	20	5			0.102	R	14.7	60		Y	1	Medway,K	Y	
7.785	813213	6.1	M	78	15.4	7			0.089	R	13.7	32		Y	1	Linger,S	Z	
7.785	813214	6.5	B	78		3			0.080	B		20	5.0C	Y	2	Dionisi,M		
7.79	813215	5.5	B	M	10	3			0.07	N	8	33				Shitikov,A		
7.79	813216	5.6	B	M					0.03	B		8				Tsygankov,D		
7.792	813217	6.2	B	78, 101	13	4			0.035	B		7	6.0C	Y	1	Sciezor,T	a	
7.794	813218	5.2	B	54	25	8			0.20	SC	10	117	5.5	Y	1	Ward,A	b	
7.795	813219	5.6	S	77, 78	12.1	8	0.15	77	0.05	B		10	5.8	Y	4	Abbott,J	c	
7.795	813220	6.3	B	78	12.1	8	0.15	77	0.05	B		10	5.8	Y	4	Abbott,J	d	
7.80	813221	4.5	S	DCS 6A	17	6			0.040	B		7	6	Y	2	Bus,E.P	V	
7.806	813222	6.5	M	78	8	4			0.09	M	11	56	4.5	Y	2	Westlund,M	e	
7.810	813223	5.0	B	101	20	7			0.05	B		10	5.5	Y	1	Ward,A	b	
7.837	813224	5.9	S	78	22	4			0.050	B		10	5.6C	Y	1	Kaila,K		
7.854	813225	6.3	B		9.5	5			0.150	N	4.8	36	5.5	Y	1	Emrich,G		
7.854	813226	5.6	B		14	5	0.12	75	0.07	B		20	5.5	Y	1	Filiwon,E		
7.865	813227	6.0		54					0.030	B		8		C	N	2	Kieltyka,G	
7.87	813228	4.3	S	DCS 6A	23	5			0.046	R	4	8	5.5	Y	3	van de Weg,R.L.W		
7.87	813229	5.3	B	DCS 6A	23	5			0.046	R	4	8	5.5	Y	3	van de Weg,R.L.W		
7.87	813230	4.4	S	DCS 6A	21	7	1.5	60	0.060	B		12	5.5	Y	3	van de Weg,R.L.W	f	
7.87	813231	5.5	B	DCS 6A	21	7	1.5	60	0.060	B		12	5.5	Y	3	van de Weg,R.L.W	f	
7.88	813232	5.5	M	54	20	6			0.06	R	4	10	6.0	Y	1	Granslo,B.H		
7.88	813233	6.2			12				0.034	B		9			3	Pereira,A	g	
7.892	813234	5.7	S	54		5			0.063	R	13.3	34	5.0C	Y	2	Skyjaeraasen,O		
7.896	813235	5.4	S	54, 78	9	4	0.4	80	0.050	B		10	6.0	Y	1	Rogers,J.H	h	
7.896	813236				2	4	0.17	80	0.320	R	18	140	6.0	Y	1	Rogers,J.H	i	
7.91	813237	6.6	B	M	3	6	0.1		0.07	N	8	33				Rudenko,S		
7.912	813238	6.0																

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NOTE A At lower powers, star-like coma was almost invisible, at 90x it became barely visible.  
 NOTE B Slight haziness in sky.  
 NOTE C Exceptionally clear.  
 NOTE D Very condensed.  
 NOTE E 8.5 mag. nucleus.  
 NOTE F Gas tail 0.025 deg. wide.  
 NOTE G Elliptical coma. (On original report form observer drew arrow from coma diameter value to tail PA box holding values of 77 deg. and 257 deg. Ed.)  
 NOTE H Bright skies.  
 NOTE I In Psc.  
 NOTE J Clear skies, street lights.  
 NOTE K Modified Sidgwick method used.  
 NOTE L Coma shows envelopes.  
 NOTE M (Observer gave limit as 9.1. Ed.)  
 NOTE N Doubtful tail.  
 NOTE O (Observer indicated "Y" method. Ed.)  
 NOTE P Instrument is Wright-Schmidt. Type I. (Observer indicated "Y" method. Ed.)  
 NOTE Q Tail length 1-1.5 deg.  
 NOTE R Moist.  
 NOTE S Central mag. 8.7.  
 NOTE T Clear.  
 NOTE U 27"x21" coma, averted vision.  
 NOTE V Coma diameter approximate.  
 NOTE W Tail length = 7, PA uncertain.  
 NOTE X Very clear. Comet not seen.  
 NOTE Y (Observer gave limit as 12.5. Ed.)  
 NOTE Z Clear, windy. (Observer gave limit as 10.0. Ed.)  
 NOTE a Very clear skies.  
 NOTE b Very clear.  
 NOTE c Comparison stars 6.3, 5.7, 4.0, 5.1, 6.0. Adequate defocusing of comparison stars was only achieved by using one eyepiece of the 10x50 binoculars. The "tail-lobe" structures seen in 10x50 binoculars corresponded to fountain-like features in larger instruments. The northern "tail-lobe" was 0.15 deg. long at PA 77. The southern "tail-lobe" was 0.04 deg. at PA 112.  
 NOTE d Comparison star 6.3. The "tail-lobe" structures seen in 10x50 binoculars corresponded to fountain-like features seen in larger instruments. The northern "tail-lobe" was 0.15 deg. long at PA 77. The southern "tail-lobe" was 0.04 deg. at PA 112.  
 NOTE e Misty sky.  
 NOTE f Sunward directed fan: top angle 60 deg.  
 NOTE g (Observer gave limit as 8.5. Ed.)  
 NOTE h Coma elongated; tail only suspected, broad. Chart 101 also used.  
 NOTE i See drawing.  
 NOTE j Coma diameter and PA approximate.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
7.010	830402		0.203	SC	10	70		6.0		Williams,D.J	A
7.017	830403	0.20	0.114	N	8	45, 90	20	4.9	1	Mac Kenzie,G	
7.075	830404	0.20	0.114	N	8	45, 90	16	4.9	1	Mac Kenzie,G	
7.137	830405	0.67	0.090	M	10	111	5		1	Arpin,P	B
7.238	830406	3	0.050	B		7	5	5.8	5	Cook,A.J	
7.724	830407	0.21	0.203	SC	10	80,160,330	6	5.0	1	Foulkes,M	C
7.753	830408	0.34	0.114	N	8	28	10	5.5	1	Donatiello,G	
7.771	830409	1	0.076	N	9.2	35,140		4.8	1	Li Causi,G	D
7.777	830410	0.16	0.298	N	5	40, 65,179	17	6.1	1	Stott,D	E
7.800	830411	1.6	0.090	M	11	56	15	4.5	2	Westlund,M	F
7.875	830412	0.16	0.320	R	18	140		6.0	1	Rogers,J.E	G
7.878	830413	0.22	0.254	N	6.4	41, 65,130	19	5.7	3	Abbott,J	H
7.906	830414	0.40	0.063	R	13.3	34, 53	10	4.5	2	Skjaeraasen,O	I
7.960	830415	1	0.203	SC	10	80	5	5.3	1	Farrington,W.R	J

NOTE A I do believe a tail can be seen toward the northeast of the comet's nucleus. It is very faint and short. (Duration not indicated. Time of observation is start time. Ed.)  
 NOTE B Jet (very faint) at 0. The comet is definitely visible to the naked eye. Magnitude: 4.9. Coma circular. Field diameter 0.84 deg. (Instrument and power ambiguous. Ed.)  
 NOTE C Coma diameter 5', DC = 7. Short tail visible. Central condensation star-like at 330x. The surrounding small bright area was elongated in PA about 135-315 deg. Outer envelope faint. Tail 6' at PA 50.  
 NOTE D The tail was perfectly straight. The central condensation (c.c.) was extended in direction north-south (140x).  
 NOTE E Fan at PA 227 deg. Jet at PA 318 deg. Tail at PA 87 deg. Fine detail in coma at high power, fan shaped feature is the best defined. Coma is pear shaped with the tail a little fainter than on the 5th. Magnification of 269 also used.  
 NOTE F Misty sky.  
 NOTE G Nucleus (stellar) very faint; coma DC 4, diameter 2', symmetrical; main tail at PA 80 deg., faint, 10' long; diffuse spur (suspected) at PA 11 deg., very faint, about 6' long; outer envelope (suspected), very faint. (Duration not indicated. Time of observation is start time. Ed.)  
 NOTE H Central condensation approximately 33 arc sec. Southernmost fountain at PA 95 deg., approximately 1.1x3.6 arc min. Northernmost fountain at PA 70 deg., approximately 1.6x8.3 arc min. Central tail structures at PA 80 deg., approximately 2.0x2.5 arc min. Semi latus rectum approximately 2.3 arc min. (both). Vertex distance approximately 2.1 arc min. Central condensation nearly stellar in appearance at lower powers. Central condensation thus only a small object relative to the whole coma and of high contrast against the coma. Three separate structures visible within the forming tail with a hint of more complex faint filamentary features (streamers) seen at times. The northernmost fountain-like structure appeared to be longer than the southernmost counterpart; distance being measured from the apparent root with the coma.  
 NOTE I The site this time was on a 530 meter mountain northwest of the city (Oslo), where the seeing is in most directions far better than at site no. 1, which is down in the city. However, the comet was in the direction of the city, and, though tens of degrees above the horizon, Halley was observed through the twilight-like "airglow" (caused by light pollution) so it did not appear very much more clearly than it does from site no. 1. Halley's head was circular; the brightness changes outwards from the coma were smooth and gradual and no peculiarities were seen at all. Lumicon Deep Sky filter used.  
 NOTE J Mag. 8.3, N mag. 12.2. On this night I first noticed a short faint tail in PA 25, length 15'. During times of very steady seeing the nucleus became very bright and starlike and centered in the coma.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
7.022	850376	1.970	5.5	0.355	1.0 x 0.7	15.00	Kodak 2415		Y	O	35/P	1	Crist,M	A
7.056	850377	1.970	5.5	0.355	1.0 x 0.7	20.00	Kodak 2415		Y	O	36/P	1	Crist,M	A
7.132	850378	1.524	6	0.254	1.4 x 0.9	30.00	Kodak 2415		Y	X	90/P	1	Snyder,L.F	
7.552	850379	0.268	2.6	0.102	7.7 x 5.1	10.00	Fuji 400		Y	X	3/S	1	Richardson,C	B
7.761	850380	1.750	5	0.350	1.2 x 0.8	17.92	3M 1000	1000/	N	M	1/P	1	Mobberley,M	C
7.793	850381	0.058	2		34.5 x23.4	5.00	Fujichrome	400/27	N	O	1/S	2	Townsend,R	
7.855	850382	1.750	5	0.350	1.2 x 0.8	18.00	3M 1000	1000/	N	M	2/P	1	Mobberley,M	C

NOTE A (Observer's image identifier is followed by suffix A. Ed.) Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.  
 NOTE B Instrument is Meade Schmidt camera.  
 NOTE C This color slide film was processed as a negative.



DATE: 7 DEC 1985

DATE: 7 DEC 1985

SUB-NETWORK: SPECTROSCOPY

Date(UT)	ACN#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
7.179	870102	600G-O	CL	0.135	1.9		10.00	Kodak Tri-X	400/27	N	T	226/S	2	Buchanan, W.T	A

NOTE A Halley not visible to my naked eye; two people claimed visibility at the site. (Observer's image identifier is E-112-26. Ed.)

DATE: 8 DEC 1985

DATE: 8 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
8.012	813242				4.0	7			0.203	R	13	110	4.5C	Y	1	Phillips,J	
8.040	813243	4.8	B	101		2			0.05	B		20	6.2	Y	7	da Silva,L.A.L	
8.044	813244	5.8	B	54		7			0.07	B		10	6.5	Y	2	de Assis Neto,V.F	A
8.045	813245	6.0	B	78, 101	15 12	5		70	0.05	B		7	6.0C	Y	10	Chmielewski,W	B
8.060	813246			101	30	7			0.20	SC	10	77	5.0	Y	1	Modonsky,K	C
8.063	813247	5.9	B	78, 101	19.8	5			0.050	B		7	5.7	Y	5	Will,M	
8.076	813248	7.3	B	101	15	3			0.203	R	13	85	4.0	N	1	Fox,J.H	D
8.09	813249	5.9	B	78	28 19	2			0.035	B		7	6.0	Y	1	Jacobson,E	E
8.0965	813250	5.5	M	101	25	6	1	55	0.279	SC	10	166	4.5	Y	1	Kemble,L.J	F
8.11	813251				90	2			EY				6.0	Y	15	Morris,C.S	
8.119	813252	6.2	B	78	4.2	5			0.05	B		20	4.7	Y	2	Diaz P.,E	
8.123	813253	5.3	M	101	29	7	0.60	50	0.41	N	4.5	58	6.7	Y	2	Ariail,R.B	
8.15	813254	5.8	B	54	14	6			0.080	B		20	4.0	Y		Kronk,G	G
8.15	813255	4.6	M	54, 78	15	6			0.050	R		8	6.0	Y	15	Morris,C.S	
8.15	813256	4.6	M	54, 78	12	7	2.5	70	0.080	B		20	6.0	Y	15	Morris,C.S	
8.194	813257	6.5	S	101	33	5			0.203	SC	10	80	4.5C	Y	1	Gronck,J.D	H
8.205	813258			54, 87	30	7			0.108	N	8.5	36	6.0	Y	1	Stapleton,J	I
8.2104	813259	6.1	S	SAO	10	6			0.254	N	3.8	32	5.4		3	Machholz,D	
8.23	813260	6.6	B	78	12.0	8			0.15	N	8	30	5.5	N	1	McBride,P	
8.23	813261	6.3	S	78	13.8	5			0.203	SC	10	51	6.4	Y	1	Sanchez,A	J
8.257	813262	6.1	B	54, 87	30	3			0.050	B		10	6.0	Y	1	Stapleton,J	I
8.2875	813263	4.4	S	101	10	6	0.97	75	0.05	B		7	6.0	Y	5	Cook,A.J	
8.306	813264	5.1	M	101	19	7	0.5	290	0.05	B		10	6.0	Y	2	Fabre,R	K
8.44	813265	5.9	B	M	10	5			0.21	N		80				Knyazyuk,N	
8.44	813266	4.5	S	78					EY				6.1	Y	1	Seargent,D	
8.44	813267	4.5	S	78					0.025	B		3		Y	1	Seargent,D	
8.470	813268	6.0	S	101		6			0.05	B		10	5.0	Y	1	Williams,P.F	
8.475	813269				6	9			0.15	N	8	50	5.0	Y	1	Williams,P.F	
8.475	813270	5.9	M	101	11	7	0.33	60	0.08	B		11	5.5	N	1	Mitsuma,S	
8.52	813271	6.0	B	M					0.05	R		7				Konstantinov,S	
8.52	813272	5.5	S	78	13	7			0.07	B		10	5.0	Y	1	Yasuki,M	
8.545	813273	6.2	S	101	2	3			0.08	R	12.5	40	5.0C	Y	1	Feisheng,J	
8.549	813274	6.2	B	54, 78					0.07	B		10	5.0	Y	1	Date,M	
8.574	813275	5.4	S	101	20	5	0.50	75	0.07	B		10	5.5	Y	1	Kobayashi,J	
8.576	813276	6.0	B	101	15	5			0.060	B		10	4.5	Y	1	Moriya,M	L
8.594	813277	6.3	M	78	5.5	6			0.060	R	15	45	4.0C	Y	1	Purvinakis,R	
8.611	813278	6.2	M	54, 78	3.5	5			0.1	N	10	56	4.0	Y	1	Ichikawa,K	M
8.65	813279	5.5	B	E	15				0.08	B		8				Golubev,V	
8.670	813280	6.0	M	78					0.06	R	4.5	10	5.7	Y	1	Chodorowski,F	
8.67	813281	5.2	B	AAVSO	20	6			0.05	R	4	7				Chernis,K	
8.674	813282			101	10	3			0.064	R	12	32	5.7	Y	1	Chodorowski,F	
8.708	813283				8	5			0.150	R	15	56	3.5C	N	1	Richert,M	
8.71	813284	6.2	M	E	28	6			0.04	R		12				Maydik,A	
8.712	813285	5.3	B	101	10.4				0.056	B		8	5.5	Y	1	Koch,B.O	
8.72	813286	6.0	S	78					0.08	B		10	4.0		1	Shanklin,J.D	N
8.729	813287	4.7	B	78	6	4			0.114	N	7.9	30	4.3		1	Kerber,P	O
8.73	813288	6.3	B	AAVSO					0.15	N						Korneev,V	
8.747	813289	6.7	B	101		3			0.080	B		20	5.0C	Y	2	Dionisi,M	
8.750	813290				4.5	7			0.112	N	8	36	3.0	N	1	Koschny,D	
8.75	813291	5.4	S	DCS 5A	12		0.33		0.050	B		10	4.5C	N	1	van Loos,F.R	
8.753	813292	7.1	S	101		5			0.090	R	14	46	4.0	Y	1	Hirth,G	P
8.771	813293	6.2	B	78	30	5			0.04	B		8	6.3	Y	1	Morrisby,A	R
8.813	813294	6.3							0.080	B		15	3	Y	1	Wagel,A	S
8.813	813295	6.5	M	101	8	4			0.09	M	11	56	5.0C	Y	1	Westlund,M	
8.82	813296	6.3	B	M	20	4			0.04	R	6	18				Drapun,I	
8.82	813297	6.3	B	M	20				0.04	R	6	18				Drapun,I	
8.875	813298	5.7	S	101		5			0.063	R	13.3	34	5.0C	Y	2	Skjaeraasen,O	T
8.896	813299	5.6	M	54	20 16	7		60	0.05	B		12	5.5	Y	1	Tanti,T	U
8.96	813300	6.2			9				0.034	B		9			1	Pereira,A	V
8.97	813301	4.8	S	AAVSO	16	5			0.050	B		10				Bortle,J.E	
8.972	813302	7.0	S	101	4.3	7			0.203	N	6	101	5.5	Y	1	Hudak,D.M	
8.99	813303	4.7	S	AA	20	4			0.050	B		7				Green,D.W.E	W

NOTE A The tail is fainter than yesterday.

NOTE B On Dec. 8.097 UT, Halley passes before 32 Psc. The star has dimmed for 0.2 mag. to (IHW staff interpretation of observer's symbol. Ed.) 0.3 mag.

NOTE C Could not get est. of mag. due to haze.

NOTE D Haze, ice fog. SAO 108988 and SAO 108989 comparison stars.

NOTE E Elliptical coma. Possible gas tail visible.

NOTE F Seeing rather poor due to ice fog, but comet still seen well in binocs. and then, in clearer skies, with various powers in scope. Tail very diffuse but seen well, especially by sweeping. Comet moving very noticeably over 5-10 min. Comets Thiele and Hartly-Good seen well in same observing session.

NOTE G Mostly cloudy.

NOTE H Exc. see.

NOTE I In Psc.

NOTE J Mv central condensation = 6.1.

NOTE K (PA value appears to be measured incorrectly. Ed.)

NOTE L Seeing 3/5.

NOTE M Chart 101 also used for comparison stars.

NOTE N Cloud.

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

NOTE P Misty, clouds.

NOTE Q Good seeing. No tail seen.

NOTE R (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are SAO 128544, 128547, 128466, 128422, 128421.

NOTE S Cirrus.

NOTE T Estimated mag. uncertain.

NOTE U Seeing good, transparency excellent. Clouds.

NOTE V (Observer gave limit as 9.0. Ed.)

NOTE W Coma diameter approximate.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
8.012	830416	0.22	0.203	R	13	110			1	Phillips,J	A
8.053	830417	1.32	0.050	B		7	30	5.7	5	Will,M	B
8.073	830418	0.6	0.203	R	13	85	10	4.0	1	Fox,J.H	C
8.290	830419	3	0.050	B		7	6	6.0	5	Cook,A.J	
8.807	830420	1.6	0.090	M	11	56	15	5.0	1	Westlund,M	D

NOTE A City lights. The comet is still a nebulous patch of light with the central condensation easily noted. There were times

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DATE: 8 DEC 1985

- tonight when the comet appeared elongated with a tail developing to the east, or at least the coma appeared elongated slightly to the east. (Duration not indicated. Time of observation is assumed to be start time. Ed.)
- NOTE B Circular coma, with some suggestion of oblateness, although this could not be determined for sure. Three concentric zones of gradation of brightness found in the coma. Coma diameter 19' 46". Zone 1 = 3' 57", zone 2 = 9' 13", zone 3 = 19' 46". Note that a star is seen at the edge of the coma at PA 100. It was later occulted by the outer coma and could not be seen. Dark adapted.
- NOTE C Nucleus and jet to NW easily seen, remainder of coma less so. Coma elongated E with deep notch, not quite reaching nucleus. S branch of coma brighter than N branch.
- NOTE D City lights and thin cirrus.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
8.066	850383	0.135	3.8		15.2 x 10.2	10.00	Kodak Tri-X	400/	N	O	1/C	2	Moore,A,J	
8.082	850384	0.135	3.8		15.2 x 10.2	20.00	Kodak Tri-X	400/	N	O	2/C	2	Moore,A,J	
8.102	850385	0.200	4.5		10.3 x 6.9	10.00	Ektachr.400		N	T	11/S	1	Priester,D,C	A
8.113	850386	0.135	3.8		15.2 x 10.2	20.00	Kodak Tri-X	400/	N	O	3/C	2	Moore,A,J	
8.116	850387	0.200	4.5		10.3 x 6.9	10.00	Ektachr.400		N	T	12/S	1	Priester,D,C	B
8.142	850388	0.135	3.8		15.2 x 10.2	20.00	Kodak Tri-X	400/	N	O	4/C	2	Moore,A,J	
8.149	850389	0.200	2.8		10.3 x 6.9	4.00	Kodak Tri-X	400/	N	X	635/N	1	Lazerson,H	C
8.200	850390	0.180	2.8		11.4 x 7.6	1.00	Ektachrome	400/	N	S	1/P	2	Sanford,J	D
8.275	850391	0.180	2.8		11.4 x 7.6	10.08	3M 1000	1000/	N	S	3/P	5	Cook,A,J	
8.281	850392	0.180	2.8		11.4 x 7.6	5.00	3M 1000	1000/	N	S	4/P	5	Cook,A,J	
8.293	850393	0.180	2.8		11.4 x 7.6	3.00	3M 1000	1000/	N	S	5/P	5	Cook,A,J	
8.296	850394	0.180	2.8		11.4 x 7.6	5.00	3M 1000	1000/	N	S	6/P	5	Cook,A,J	
8.984	850395	0.225	1.7	0.140	9.1 x 6.1	4.00	Kodak 2415		Y	S	3/P	1	Dilsizian,R	E

NOTE A Occultation. Push processed to 800 ASA.

NOTE B Occultation. Exposure duration uncertain. Push processed to 800 ASA.

NOTE C (Observer's image identifier is 16-35. Ed.) "Push" processed to 800 ASA.

NOTE D This color slide film was processed as a negative.

NOTE E Exposures limited below 5 minutes to allow for stellar guiding with a minimum of "proper motion" distortion in resolution.

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	
9.000	813304	5.9	B	101					0.036	B		3	6.5	Y	2	de Assis Neto,V.F		
9.000	813305			101		6	0.25	68	0.07	B		10	6.5	Y	2	de Assis Neto,V.F		
9.011	813306	4.8	B	101		1			0.05	B		20	4.0	Y	1	da Silva,L.A.L		
9.015	813307	4.7	B	101		3			0.06	R	12	56	5.5	Y	1	Osofre D.,D		
9.04	813308	6.2	B	101	16	6			0.080	B		20	4.5	Y		Kronk,G		
9.052	813309	5.9	B	101	15	6			0.035	B		7	4.0	Y	1	Stephan,C	A	
9.056	813310	4.7	M	101	19.8	7	0.8	45	0.05	B		7	5.1	Y	5	DeYoung,J.A	B	
9.06	813311	6.6	B	101	9.9	8	0.17	86	0.335	N	4.5	56	4.5	Y		Kronk,G		
9.08	813312	4.8	M	54, 78	19	6			0.050	R		8	5.0	Y	14	Morris,C.S		
9.083	813313			101		3			0.08	R	11	21	4.5C	N	1	Graves,D	C	
9.10	813314	4.4	S	101	25	5	0.50	70	0.080	B		11	5.9	Y	3	Spratt,C.E	D	
9.104	813315	6.0	B	101	10	6			0.15	N	8	60	5.4	Y	1	Gilchrist,D.K	E	
9.11	813316	4.7	S	101	20	6	0.33	70	0.080	R	3.7	19	6.0	Y	3	Spratt,C.E		
9.12	813317	4.8	S	101	45	2				EY		1	6.0	Y	3	Spratt,C.E		
9.15	813318	6.2	S	101	9.4	6			0.203	SC	10	51	6.4	Y	1	Sanchez,A	F	
9.153	813319	6.2	M	101					0.050	B		10	5.5	Y	1	Smith,A		
9.156	813320	5.5	M	101	30	6	1.25	55	0.279	SC	10	166	5.0	Y	1	Kemble,L.J	G	
9.167	813321	6.5	S	101	34	5			0.203	SC	10	80	4.5C	Y	1	Gronck,J.D	H	
9.174	813322	6.2	B	101		2			0.08	R		6.3	16	4.3	Y	3	Burch,J.Q	I
9.1743	813323	5.9	S	101	11	7			0.152	N	8.0	76	5.2		3	Machholz,D		
9.1743	813324	6.3	B	101	7	8			0.152	N	8.0	76	5.2		3	Machholz,D		
9.177	813325	6.2	B	101		2			0.08	R	6.3	25	4.3	Y	3	Burch,J.Q	I	
9.188	813326	6.0	S	101	40	7			0.08	R	6	20	6.2	Y	1	Bracken,R	J	
9.201	813327	5.9	M	101	20.0	7			0.05	B		12	6.5	Y	1	Knight,S		
9.208	813328	6.1	B	101	14	4		80	0.05	B		7	5.5C	Y	10	Chmielewski,W		
9.24	813329	4.9	B	101						EY			6.5	Y	27	Hale,A		
9.24	813330						0.5	80	0.20	N	6	61	6.5	Y	27	Hale,A		
9.260	813331	6.6	S		10	5	0.03		0.080	B		11		Y	3	Pryal,J	K	
9.271	813332	5.1	M	101	19	7	0.5	290	0.05	B		10	5.5	Y	1	Fabre,R	L	
9.285	813333	5.8	B	101	12	6			0.05	B		10	4.3	N	2	Saxon,V.P	M	
9.426	813334				9.5	6	0.7	80	0.10	N	10	55	5.5C	Y	1	Kato,T		
9.43	813335	5.6	S	101	9				0.049	B		3		Y		Jones,A		
9.44	813336	5.8	S	101					0.049	B		3		Y		Jones,A		
9.44	813337				5	6		60	0.317	N	5	86	6.0	Y		Jones,A		
9.444	813338	5.2	M	101	11	6	0.8	75	0.030	B		8	5.5C	Y	1	Kato,T		
9.450	813339	5.9	S	101		8			0.05	B		10	5.0	Y	1	Williams,P.F		
9.45	813340	8.7	S	SAO					0.317	N	5	86				Jones,A	N	
9.45	813341	5.9	M	SAO	13	6	0.33	65	0.06	R	12	22	4.0	Y	4	Nakamura,A		
9.46	813342	5.7	B		19	5			0.05	B		10	4.5	N	1	Uda,K		
9.476	813343	6.2	B	101					0.07	B		10	5.0	Y	1	Date,M		
9.48	813344	7.1	B	SAO	12	6			0.15	N	5.7	34	4	Y	2	Tanikawa,M	O	
9.48	813345	6.5	B	SAO	12	5			0.15	N	6	23	4	Y	2	Tanikawa,M	O	
9.48	813346	5.9	B	SAO					0.05	B		7	4	Y	2	Tanikawa,M		
9.49	813347	5.5	S	78	10	7			0.07	B		10	5.0	Y	1	Yasuki,M		
9.493	813348	5.9	B						0.035	B		7		N	1	Okada,M		
9.494	813349	5.4		101						EY			5.5C	Y	1	Kato,T		
9.529	813350	6.3	B	101	10	5			0.12	N	6	40	4.5C	Y	1	Hayashi,E		
9.529	813351	5.6	B	101	20				0.05	B		7				Hayashi,E		
9.53	813352	6.6	B	101		7			0.15	N	8.6	41	6.0	Y	4	Makino,J		
9.53	813353	5.6	M	101			0.5		0.05	B		7	5.0	Y	2	Suzuki,I		
9.53	813354			101	3.9	4			0.31	N	5.7	147	5.0	Y	2	Suzuki,I	P	
9.540	813355	5.4	B	101	11	6	2		0.070	B		10	5.5	Y	1	Nakamura,Y		
9.559	813356	5.9	B	101	20	5			0.060	B		10	4.5	Y	1	Moriya,M	Q	
9.58	813357	6.0	B	AAVSO	4	6	4.5	62	0.05	B		7				Guryanov,S		
9.63	813358	5.0	B	AAVSO	17				0.08	B		8				Golubev,V		
9.64	813359	5.9	B	AAVSO					0.15	N						Korneev,V	R	
9.64	813360	5.5	B	AAVSO					0.11	R	7					Churyumov,K		
9.65	813361	6.0	B	M					0.07	N	8	33				Martis,A	S	
9.66	813362	5.7	B	M					0.10	R		30				Lyubavin,A		
9.69	813363	6.1	B	M	4		0.3		0.08	R		29				Nesterov,Yu		
9.705	813364				3.7	8			0.060	R	15	45	3.0	N	1	Koschny,D		
9.708	813365	4.9	S	101		6			0.050	B		7	4.5	N	1	Lunde,R		
9.708	813366	4.5		101	5	5			0.114	N	7.9	30	4.5		1	Kerber,F	T	
9.714	813367	5.5	M	AAVSO	14	8			0.063	R	13.3	52				Kosa-Kiss,A	U	
9.72	813368	5.7	S	AAVSO		5			0.08	R	10	29				Goldfarb,M		
9.726	813369	7.1	S	101	4.5	5			0.090	R	14	46	4.3	Y	1	Hirth,G	V	
9.729	813370				2.1	6			0.076	R	16	100	5.0C	Y	1	Kukkonen,I.T	W	
9.729	813371	5.4	S	101	6	7			0.050	B		7	3.9C	N	1	Piccinini,M		
9.73	813372	5.8	S	M	9	2			0.06	R	10	28				Muravyeva,Yu		
9.73	813373	5.6	V	E	14	5				EY						Dzhultsev,K		
9.73	813374	5.6	V	E	14	5				EY						Kolchanov,V		
9.73	813375	5.6	V	E	14	5				EY						Sladkov,Ya		
9.73	813376	5.6	B	E	12				0.08	R	10	29				Danilov,M		
9.73	813377	5.7	B	E					0.06	R	10	28				Kamnev,Y		
9.73	813378	5.7	B	E					0.06	R	10	28				Pleshkunov,D		
9.73	813379	5.4	B	E	12				0.08	B		8				Navalihin,M		
9.73	813380	5.4	B	M	12				0.08	B		8				Chuprakov,S		
9.73	813381	5.6	B	E	10				0.08	R	10	29				Dyachuk,A		
9.735	813382	6.1	B	101					0.050	B		7	4.5C	Y	1	Ruiz,J		
9.745	813383			101	6	6			0.208	N	5.8	48	4.5C	Y	1	Ruiz,J		
9.750	813384	6.5	B	101					0.05	B		7	5.0C	Y	1	Kukkonen,I.T		
9.75	813385	5.4	S	DCS 6A	15	5			0.050	B		10	5	C	N	1	van Loo,F.R	
9.75	813386	5.8	S	AAVSO	15	5			0.08	B		8				Shirokov,A		
9.763	813387	4.7	S	101	15	7			0.050	B		7	6.0	Y	1	Meozzi,D		
9.771	813388		B	101	6	6			0.210	N	5.7	66		Y	1	Temprano,J		
9.773	813389	5.2	B	101	25	7			0.20	SC	10	117	4.5	Y	1	Ward,A	X	
9.785	813390	6	B	101	11	5	0.1	60	0.05	B		10	5	C	Y	1	Menichetti,R	
9.785	813391	5.1	B	101	20	6			0.050	B		10	4	Y	1	Ward,A	Y	
9.79	813392	5.7	B	AAVSO	18	4			0.03	B		8				Shirokov,A		
9.792	813393	5.8	B	101	11				0.114	N	8.7	100		Y	1	Rodriguez C.,J.A		
9.806	813394	6.5	M	101	8	4			0.09	M	11	56	5.0	Y	2	Westlund,M		
9.829	813395	5.1	M	101	22	6			0.25	N	5.2	68	6.2	Y	1	Gonzalez,A	Z	
9.840	813396	6.0	M	101	16	4			0.050	B		10	4.5C	Y	1	Lozano,L		
9.841	813397	5.5	B	101	20	5			0.102	R	14.7	60		Y	1	Medway,K	a	
9.854	813398	5.6	B						0.03	B		8	5.5	Y	1	Filimon,E		
9.854	813399		B		11	5	0.17	75	0.07	B		20	5.5	Y	1	Filimon,E		
9.882	813400				12.0	8	0.7	53	0.08	B		15	4.5	Y	1	Hurst,G.M		
9.89	813401	4.7	B	101	45	4	1.50	70	0.050	B		7	5.5	Y	2	Merlin,J.-C		
9.892	813402	5.8	M	101	5.													

DATE: 9 DEC 1985

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Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
9.93	813405	4.4	B	DCS6A6B		6			0.040	B		8	5.5C	N	1	Scholten,A	
9.938	813406	8	B	101	8	3	0.25	30	0.203	SC	10	80	5.8	Y	1	Farrington,W.R	
9.94	813407	6.0	S	101					0.050	B		7	5.0	Y	1	Spalding,G.H	d
9.969	813408	4.6	M	101	17.0	6			0.05	B		7	4.3	Y	3	DeYoung,J.A	
9.969	813409	4.8	S	101	10.0	6			0.050	B		7	5.5	N	1	Lunde,R	

NOTE A Heavy dew - haze in sky.  
 NOTE B Jets seen.  
 NOTE C Urban city lights.  
 NOTE D DC approximate.  
 NOTE E Coma diameter is rough estimate.  
 NOTE F Mv central condensation = 6.1.  
 NOTE G Comet very bright, tail very diffuse but long and easily seen by sweeping in RA.  
 NOTE H Exc. see.  
 NOTE I Dark location 20 miles to west of city lights.  
 NOTE J Unaided eye view!  
 NOTE K Elongated coma. (Observer gave limit as 10. Ed.)  
 NOTE L (PA value appears to be measured incorrectly. Ed.)  
 NOTE M City lights.  
 NOTE N Condensation.  
 NOTE O m2 (observer's symbol believed to mean "approximately equal to", Ed.) 11.  
 NOTE P Meter: coma diameter is P1 + P2.  
 NOTE Q Seeing 4/5.  
 NOTE R Envelope in head.  
 NOTE S Envelope in the head.  
 NOTE T (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE U 7.0 mag. nucleus. Naked eye.  
 NOTE V Humid.  
 NOTE W Coma diameter determined as an average of five transit time observations.  
 NOTE X Slight ground mist; thick fog by 7:30.  
 NOTE Y Misty; thick fog by 7:30.  
 NOTE Z See drawing 3.  
 NOTE a Thin mist prevailed. (Observer gave limit as 11.5. Ed.)  
 NOTE b Baze. Seeing Antoniadi III.  
 NOTE c Buried!  
 NOTE d Fog.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
9.007	830421		0.105	N	4.2		20	6.0		Williams,D.J	A
9.073	830422	0.99	0.15	N	5	30	10		1	Zanette,D	B
9.099	830423	0.19	0.203	N	6	61,116	14	6.5	1	Williams,J	C
9.49	830424	1.03	0.15	N	5.7	34	14	4	2	Tanikawa,M	D
9.741	830425	0.88	0.063	R	13.3	52		6.1		Kosa-Kiss,A	E
9.766	830426		0.356	SC	11	200	15		1	Vardenet,M	F
9.771	830427	0.16	0.210	N	5.7	66			1	Temprano,J	G
9.813	830428	1.2	0.06	R	5.7	20, 40	30	5.0	3	Cardiel,N	
9.821	830429		0.090	M	11	56,111	65	5.0	2	Westlund,M	H
9.829	830430		0.250	N	5.2	69		6.2	1	Gonzalez,A	I
9.861	830431	0.09	0.298	N	5	40, 65,179	20	6.0	1	Stott,D	J
9.865	830432	0.04	0.83	R	19.7	900	10	5.0	3	Soc. Astro. de France F	
9.878	830433	0.13	0.83	R	19.7	320	10	5.0	3	Soc. Astro. de France I	
9.883	830434	0.07	0.406	N	5	254	8		2	Farroni,G	M
9.898	830435	2.4	0.08	B		15	45	4.5	1	Hurst,G.M	N
9.957	830436	1	0.203	SC	10	80	5	5.8	1	Farrington,W.R	O
9.960	830437	0.02	0.610	C	13.5	823	5	4.3	3	DeYoung,J.A	P

NOTE A I can just see the comet with my eye. It is very easy to spot in the finderscope on the 8". The 8" still gives the best view at 70x. The nucleus is bright and compact and appears to be enveloped in a "misty fog" slightly elongated on the eastern side. (Duration not indicated. Time of observation is start time. Ed.)  
 NOTE B Cirrus.  
 NOTE C Fuzzy starlike center. Coma gradually brightened toward center. I had great difficulty deciding if there was more detail. I might have seen a broad short tail and some sort of detail around the nucleus, but I'm not at all very certain. This drawing is more accurate than the last one (28/11/85). I am having trouble keeping my north and east orientation correct and the accuracy of my scale. I'd welcome suggestions.  
 NOTE D Dia. (observer's symbol believed to mean "approximately equal to", Ed.) 12'. DC = 6/10.  
 NOTE E Unspecified features at PA 38 deg. and PA 330 deg. Schematic drawing. (Duration not indicated. Time of observation is end time. Ed.)  
 NOTE F Additional drawing submitted made using 11x80 binoculars (1.97"/mm). Ed.)  
 NOTE G Without tail. (Duration not indicated. Time of observation is assumed to be roughly mid time. Ed.)  
 NOTE H (Two drawings supplied labelled 1920 UT (56x, 1.6"/mm) and 2015 (111x), respectively. Ed.)  
 NOTE I In less (than) an hour, the densest part of the coma occulted the star. (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE J Fan at PA 180 deg. Tail at PA 76 deg. Detail in central condensation more elusive now, tail much easier to see though. Magnification of 269x also used.  
 NOTE K Jet at PA 103, 19" long; jet at PA 140, 24" long; streamer at PA 162, 43" long; tail at PA 203, 51" long; streamer at PA 238, 32" long. Drawing made by Alain Perez.  
 NOTE L Jet at PA 167, 22" long; jet at PA 180, 32" long; streamer at PA 216, 40" long; jet at PA 258, 30" long. Drawing made by Philippe Venant.  
 NOTE M Apparent dimensions of the comet 2.17"x2.89". Jet at PA 200, length 26".  
 NOTE N Extremely well condensed with very bright area of 5' diameter surrounded in overall 12' halo. Possible faint very diffuse material glimpsed between two tails as drawn. 42' long tail at PA 53 brighter than 48' long tail at PA 18. Star involved in coma PA 47 deg. from nuclear region.  
 NOTE O Mag. 8.0; N mag. about 13. Tail slightly brighter than on Dec. 7, length 15', PA 30. The nucleus was very dim tonight and more diffuse. At 2320 coma moved in front of star which was around mag. 10.5. It took 42 mins. for the coma to transit the star. I noticed no dimming of the star.  
 NOTE P Jets at PA 194 and PA 278. A dark spine at PA 50.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
9.736	850396	0.600	5.6		3.4 x 2.3	30.00	Kodak 103a-O		N	S	6/P	1	Dragesco,J
9.832	850397	0.200	4.5		10.3 x 6.9	2.00	3M	1000/	N	O	16/T	1	Martin,D
9.838	850398	0.200	4.5		10.3 x 6.9	2.00	3M	1000/	N	O	17/T	1	Martin,D
9.839	850399	0.803	2.1	0.350	2.6 x 1.7	1.00	Kodak 103a-F		N	M	15/P	1	Guarro,J
9.847	850400	0.200	4.5		10.3 x 6.9	3.00	3M	1000/	N	O	18/T	1	Martin,D
9.850	850401	0.200	4.5		10.3 x 6.9	3.00	3M	1000/	N	O	19/T	1	Martin,D
9.854	850402	0.200	4.5		10.3 x 6.9	4.00	3M	1000/	N	O	20/T	1	Martin,D
9.863	850403	0.200	4.5		10.3 x 6.9	4.00	3M	1000/	N	O	21/T	1	Martin,D
9.868	850404	0.200	4.5		10.3 x 6.9	5.00	3M	1000/	N	O	22/T	1	Martin,D

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	
10.000	813410			101		3			0.08	R	11	21	4.0C	N	1	Graves,D	A	
10.000	813411	6.1	M	101	3.9	5			0.114	N	8	45	4.5	Y	1	Mac Kenzie,G	B	
10.000	813412	5.5	B	101					0.050	B		10	4.5C	Y	1	Robinson,R.L		
10.003	813413	5.2		101		6			0.20	SC	10	70	6.0	Y	1	Williams,D.J	C	
10.021	813414	5.7	B	101					0.080	B		20	5.8	Y		Smith,D		
10.035	813415	5.9	B	101		5			0.10	R	15	15	6.0	Y	1	Ferrin,I		
10.04	813416	5.8		101						EY			6.0	Y	1	Ferrin,I		
10.063	813417	5.8	B	101		1			0.05	B		7	4.5	N	2	Benavides,A		
10.072	813418	5.4	B	101					0.036	B		3	6.5	Y	2	de Assis Neto,V.F		
10.072	813419			101		6			0.07	B		10	6.5	Y	2	de Assis Neto,V.F		
10.083	813420	6.0	B	101	15 12	5		70	0.05	B		7	6.0C	Y	10	Chmielewski,W	D	
10.10	813421	4.4	S	101	25	5	0.75	70	0.080	B		11	5.5	Y	1	Spratt,C.E	E	
10.11	813422	4.7	S	101	20	6	1	70	0.140	SN	3.6	28	5.5	Y	1	Spratt,C.E		
10.13	813423	4.3	S	AA	22	6			0.050	B		7				Green,D.W.E	F	
10.135	813424	5.8	M	AAVSO						EY						O'Heara,S.J		
10.15	813425	4.6	B	101	30	3				EY			5.5	Y	1	Keen,R	G	
10.16	813426	5.2		101	16	5	1.3	70	0.040	B		8	5.5	Y	1	Keen,R	H	
10.17	813427			101	20	6	1.7	70	0.080	B		11	5.5	Y	1	Keen,R		
10.18	813428	4.0		54, 101	80	3				EY			7.0	Y	16	Morris,C.S	I	
10.19	813429				10	8			0.015	B		6	7.0	Y	16	Morris,C.S	J	
10.191	813430	5.7	M	101	19.0	7			0.05	B		12	6.5	Y	1	Knight,S		
10.198	813431	6.0	S	101	40	7			0.08	R	6	20	6.2	Y	1	Bracken,R	K	
10.22	813432	5.0	M	54, 100	14	8	1.33	70	0.050	R		8	7.0	Y	16	Morris,C.S	L	
10.222	813433	5.6		101	20	4	0.50	45	0.050	R	4		6.0	Y		Underhay,E	M	
10.2236	813434	5.7	S	DCS	13	6	0.28	77	0.254	N	3.8	32	5.3		3	Machholz,D		
10.2236	813435	6.2	B	DCS	13	6	0.28	77	0.254	N	3.8	32	5.3		3	Machholz,D		
10.2236	813436	6.6	S	DCS	4	4	0.28	77	0.254	N	3.8	32	5.3		3	Machholz,D	N	
10.2236	813437	6.8	B	DCS	4	4	0.28	77	0.254	N	3.8	32	5.3		3	Machholz,D	N	
10.24	813438	5.0	M	54, 100	14	7	2.67	70	0.080	B		20	7.0	Y	16	Morris,C.S	O	
10.240	813439	5.1	M	101	10	5			0.050	B		7	4.6	Y	1	Robertson,T		
10.2500	813440	4.8	M	101	10	6	1.92	60	0.05	B		7	6.0	Y	5	Cook,A.J		
10.259	813441	6.5	S		10	5			0.080	B		11		Y	3	Pryal,J	P	
10.378	813442	5.5	M	101	25	6			0.035	B		7	5	Y	1	Watanabe,H		
10.385	813443	5.5	M	101	30	6			0.035	B		7	5	Y	1	Watanabe,A		
10.395	813444	5.7	M	101	11	7	0.33	65	0.08	B		11	6	Y	1	Mitsuma,S	Q	
10.41	813445	5.7	S	101	8				0.049	B		3	5.9	Y		Jones,A		
10.41	813446			101	11				0.050	B		7				Jones,A		
10.41	813447	4.5	S	101		7			0.03	R	7		6.2C	Y		Lovejoy,T	R	
10.42	813448	5.8	M		20	7			0.07	B		10	5	Y	3	Hiraga,M		
10.42	813449				5	6		60	0.117	N	5	86	6.0	Y		Jones,A		
10.42	813450	8.9	S	SAO		1			0.117	N	5	86				Jones,A	S	
10.448	813451	6.0	B	101		3			0.05	B		7	4.0C	Y	1	Hasegawa,T		
10.46	813452	4.9	S	101	14.0	6	0.2	65	0.05	B		7	5.0	Y	1	Kanai,K		
10.46	813453	5.6	B	101	14.0	6	0.2	65	0.05	B		7	5.0	Y	1	Kanai,K		
10.460	813454	6.2	S	101	3.0	6			0.08	R	11.4	33		C	Y	1	Wakatsuki,M	
10.48	813455	5.6	S	101		6			0.08	B		11	4.0	N	2	Homose,M		
10.482	813456	5.1	M	101	11	6			0.030	B		8	5.0C	Y	1	Kato,T		
10.490	813457				8.5	6	0.3	70	0.10	N	10	55	5.0C	Y	1	Kato,T		
10.49	813458	5.5	S	101		2			0.050	B		7		C	N	1	Matchett,V	
10.500	813459	5.7	B	101					0.035	B		7			Y	2	Okada,M	
10.54	813460	5.4		101						EY			6.2	Y		Clark,M.L		
10.55	813461	5.0	S	101	14	4			0.03	R		6	6.2	Y		Clark,M.L		
10.55	813462	5.4	S	101	10	7			0.07	B		10	5.0	Y	1	Yasuki,M		
10.56	813463	5.4	S	101	10	6	0.47	114	0.41	N	4.2	86	6.2	Y		Clark,M.L		
10.569	813464	5.4	M	101	5.0	5	0.67	85	0.1	N	10	25	6.0	Y	1	Ichikawa,K		
10.576	813465	5.8	M	101		6			0.060	R	15	45	5.1C	Y	1	Purvinskis,R		
10.65	813466	5.7	S	AAVSO					0.08	R	10	29				Goldfarb,M		
10.68	813467	6.2	B	M					0.07	R	8	33				Martis,A		
10.70	813468	5.1	B	AAVSO	17				0.08	B		8				Golubev,V		
10.70	813469	6.0	B	101	7	6			0.08	B		20	5.5	Y	1	Speil,J	T	
10.719	813470	6.0	M	101	8	4			0.09	M	11	56	4.5	Y	2	Westlund,M	U	
10.73	813471	5.7	B	M	12				0.08	B		8				Rogozin,V		
10.73	813472	5.7	B	E	12				0.08	B		8				Zhigalev,A		
10.73	813473	5.7	B	E					0.06	R	10	28				Kamnev,Y		
10.73	813474	5.7	B	E					0.06	R	10	28				Pleshkunov,D		
10.733	813475	4.8	M	101	15	5			0.063	B		9	4.0C	Y	1	Kammerer,A	V	
10.75	813476	5.9	S	SAO 67	5				0.05	B		10	5.0	Y	1	Germann,R		
10.75	813477	5.8	B	DCS 6A	12	5			0.063	B		8	3	C	N	1	Geenen,J.J	
10.75	813478	5.1	S	DCS 6A		5			0.115	N	8	45		C	Y	1	Maat,W.J	
10.754	813479	5.4	B	IEW	14.2	6			0.080	B		20	4.5	Y	1	Guthier,O		
10.760	813480	5.5	M	101	14	6			0.089	R	5.5	18	5.5M	N	1	Ventura,F		
10.77	813481	5.9	B	DCS 6A		6			0.050	B		10	4.5C	N	1	Roos,M.C		
10.77	813482	4.5	S	DCS 6A	18	7	1.75	78	0.060	B		12	6.0	Y	3	van de Weg,R.L.W	W	
10.77	813483	5.1	B	DCS 6A	18	7	1.75	78	0.060	B		12	6.0	Y	3	van de Weg,R.L.W		
10.77	813484	4.3	S	DCS 6A	23	4	2.0	78	0.046	R	4	8	6.0	Y	3	van de Weg,R.L.W		
10.77	813485	4.9	B	DCS 6A	23	4	2.0	78	0.046	R	4	8	6.0	Y	3	van de Weg,R.L.W		
10.771	813486	6.1	B	101		3			0.07	B		10	5.0	N	1	Deconinck,M		
10.771	813487						0.9	71	0.250	N	6	150	4.7	Y	1	Guthier,O	X	
10.774	813488	5.7	S	101	10	6			0.114	N	7.9	26	5.0C	N	1	Bernardis,A		
10.78	813489	5.2	M	101	14	5			0.05	B		10	4.5	Y	1	Bottger,B		
10.78	813490	5.4	S	DCS 6A	12	5			0.080	B		15	4	C	N	1	Zanstra,W.T	
10.786	813491	5.9	B	101	10	3			0.05	B		10	5.5C	Y	1	Menichetti,R		
10.788	813492	5.9	B	101	10	3			0.13	N	5.5	36	5.5C	Y	1	Menichetti,R		
10.79	813493	5.4	B	101	8	4			0.056	B		8	4.5	Y	1	Kraling,W	Y	
10.79	813494	4.7	S	DCS 6A	15				0.050	B		10		C	N	1	Aerts,L	
10.79	813495	4.4	B	DCS6A6B		6			0.040	B		8	5.5	Y	2	Scholten,A		
10.799	813496	4.8		101	15	4			0.050	B		10	4.0	N	1	Marekfa,G	Z	
10.799	813497	5.1	M	101	20	6	0.6	73	0.05	B		12	4.5	Y	1	Tanti,T	a	
10.800	813498	5.1	B	101	20	6		80	0.030	B		8	4.3	Y	1	Linder,J	b	
10.8125	813499	5.8	B	101	12	7			0.05	B		10	6.0C	Y	2	Franciosi,C		
10.82	813500	4.7	V	101	60	2	1.17	76		EY			6.5	Y	2	Merlin,J.-C		
10.826	813501	4.9	S		15	5			0.114	N	8.7	38	5.2	Y	1	Nolle,M	c	
10.851	813502	6.0	M	101	16	4	0.47	302	0.050	B		10	4.1C	Y	1	Lozano,L		
10.86	813503	5.2	B	AA	17	6			0.050	B		7	4.5	N		Schmeer,P		
10.865	813504	5.9							0.080	B		15	3	Y	1	Nagele,A	d	
10.875	813505	7.0	B		7.0	8			0.060	R	15	45	4.0					

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Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
10.913	813511	5.3	B	101	12.8	7			0.050	B		10	5.0	Y	1	Rossi,L	V

NOTE A Deteriorating seeing (weather).  
 NOTE B Temp. = -2 deg. C; star-like coma increasingly difficult to see. Movement detected in about 25 min. of time.  
 NOTE C Clear, dark.  
 NOTE D Naked eye object.  
 NOTE E DC approximate.  
 NOTE F Coma diameter approximate.  
 NOTE G ~4 deg. Fahrenheit.  
 NOTE H Modified Sidgwick method used.  
 NOTE I Comet appeared as a star ( $m_2 = 5.5$ ) with an extremely faint coma surrounding it. Hint of a tail towards the east.  
 NOTE J Only inner condensation was visible.  
 NOTE K Good seeing.  
 NOTE L Chart 101 also used.  
 NOTE M Magnification of 8+12 [sic] used.  
 NOTE N Magnitude estimates of inner coma only.  
 NOTE O Chart 101 also used. Coma nearly parabolic in shape.  
 NOTE P Weather hazy at 2000 PST. (Observer gave limit as 9. Ed.)  
 NOTE Q 10.  
 NOTE R Comet brighter.  
 NOTE S Condensation.  
 NOTE T Faint aurora.  
 NOTE U Cirrus.  
 NOTE V Slight haze.  
 NOTE W Tail rays in plasma tail: 0.25 deg. long at PA 35 and 0.17 deg. long at PA 60.  
 NOTE X Envelope.  
 NOTE Y Cloud gap. (Translated by IEW staff. Ed.)  
 NOTE Z (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE a Seeing good, transparency fair. Haze.  
 NOTE b Some fog, some clouds. Coma elliptical? Tail? PA approximate.  
 NOTE c Drawing.  
 NOTE d (Observer indicated "A" method [Argelander?]. Ed.) Comparison star is approximately SAO 128335. [sic]

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
10.003	830438		0.203	SC	10	70		6.0		Williams,D.J	A
10.040	830439	0.25	1.0	C	21	210	85	6.0	1	Ferrin,I	B
10.092	830440	0.67	0.114	N	8	45	14	4.5	1	Mac Kenzie,G	C
10.135	830441	0.46	0.050	B		10			5	O'Meara,S.J	D
10.250	830442	3	0.050	B		7	20	6.0	5	Cook,A.J	
10.458	830443		0.08	R	11.4	33		6.2	1	Wakatsuki,M	E
10.462	830444		0.08	R	11.4	33		5.2	1	Wakatsuki,M	
10.715	830445	1.6	0.090	M	11	56		10.4	2	Westlund,M	F
10.755	830446	0.50	0.114	N	8	56		6.5	2	Donatiello,G	G
10.762	830447	1	0.114	N	8.7	70		5.2	1	Nolle,M	H
10.771	830448		0.250	N	6	75			1	Guthier,O	I
10.793	830449	0.67	0.12	R	15	53, 74, 153	15	6.0	2	Franciosi,C	J
10.813	830450	0.1	0.40	N	5	81, 254	20	6.5	2	Merlin,J.-C	K
10.833	830451		0.356	SC	11	200	180		1	Verdenet,M	L

NOTE A (Duration not indicated. Time of observation is start time. Ed.)  
 NOTE B Coma maximum diameter about 21", degree of condensation 5 (Morris scale, 2.5 Ferrin scale). Central condensation diameter approximately 10". Comet did show a sharp central condensation on a faint and wide rotationally symmetric coma, with no irregularities of any kind. (Three drawings supplied at 0020, 0105, and 0140 UT. Ed.)  
 NOTE C Because of comet's low altitude (fainter stars were more difficult to see than 2 hrs. earlier). [sic]  
 NOTE D (Duration not indicated. Time of observation is assumed to be start time.)  
 NOTE E Someone saw a jet. Saw it again 10 min. afterwards. Then didn't see it. Saw one narrow line (wide and bright). (Illusion). (Roughly translated by IEW staff. Ed.)  
 NOTE F Thin cirrus.  
 NOTE G Total magnitude estimate 5.9. Barlow lens used to double magnification.  
 NOTE H Inner coma was somewhat eccentric as compared to the outer coma. It was somewhat flattened towards the south. The outer coma is round. No tail. (Translated by IEW staff. Ed.)  
 NOTE I A kernel-like condensation visible in the center of the coma. Coma with two distinct envelopes. Tail at PA 71, 52'; and PA 49, 12'. (Translated by IEW staff. Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE J Pseudo nucleus diameter 15", VM: 9.0, ellipsoidal 15" x about 10"; coma diameter 13", VM: 5.9; 9' 12" tail at PA 50. [sic]  
 NOTE K Tail at PA 44, straight, narrow and bright; jet at PA 180, dense, slightly curved eastward; jet at PA 221, about sunward, then curved in a large and diffuse fountain; jet at PA 303, then curved toward PA 12, becoming diffuse; tail at PA 76, PA of the axis.  
 NOTE L (Additional drawing submitted made using 11x80 binoculars (1.97"/mm). Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
10.012	850405	1.970	5.5	0.355	1.0 x 0.7	13.00	Kodak 2415		Y		1/P	1	Crist,M	A
10.026	850406	1.970	5.5	0.355	1.0 x 0.7	25.00	Kodak 2415		Y		2/P	1	Crist,M	A
10.188	850407	0.500	3.6	0.140	4.1 x 2.7	10.00	3M 1000	1000/	N	O	14/N	7	Edberg,S.J	
10.188	850408	0.050	2		39.6 x 27.0	10.00	Ilford HP 5	500/	N	O	43/C	7	Edberg,S.J	
10.196	850409	0.500	3.6	0.140	4.1 x 2.7	5.00	3M 1000	1000/	N	O	15/N	7	Edberg,S.J	B
10.199	850410	0.500	3.6	0.140	4.1 x 2.7	1.00	3M 1000	1000/	N	O	16/N	7	Edberg,S.J	
10.210	850411	0.300	1.5	0.200	6.9 x 4.6	4.00	Kodak 2415		Y	S	2/P	1	Yen,B	C
10.221	850412	0.050	2		39.6 x 27.0	1.00	3M 1000	1000/	N	O	17/N	7	Edberg,S.J	
10.221	850413	0.200	2.8		10.3 x 6.9	4.00	Kodak Tri-X	400/	N	X	702/N	1	Lazerson,H	D
10.231	850414	0.260	5.2	0.050	7.9 x 5.3	10.00	3M 1000	1000/	N	O	19/N	7	Edberg,S.J	
10.237	850415	0.260	5.2	0.050	7.9 x 5.3	5.00	3M 1000	1000/	N	O	20/N	7	Edberg,S.J	
10.240	850416	0.260	5.2	0.050	7.9 x 5.3	1.00	3M 1000	1000/	N	O	21/N	7	Edberg,S.J	
10.444	850417	0.850	3.4	0.25	2.4 x 1.6	18.75	Kodak 6415		Y	C	5/P	1	Kojima,T	E
10.817	850418	0.100	2.9		20.4 x 13.7	20.00	Kodak Tri-X	400/	N	T	139/P	1	Hernschler,W	F
10.840	850419	0.803	2.1	0.350	2.6 x 1.7	1.50	Kodak 2415		Y	M	20/P	1	Guarro,J	
10.847	850420	0.803	2.1	0.350	2.6 x 1.7	10.00	Kodak 2415		Y	M	21/P	1	Guarro,J	
10.861	850421	0.300	1.5	0.200	6.9 x 4.6	7.00	Kodak 2415		Y	O	1/T	2	Guebriera,J	

NOTE A High developer temperature may account for somewhat "fogged" and dense negative. Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.  
 NOTE B Start time approximate.  
 NOTE C Start time approximate. (Observer's image identifier is 12. Ed.) Instrument is Schmidt camera.  
 NOTE D (Observer's image identifier is 17-2. Ed.) "Push" processed to 800 ASA.  
 NOTE E Instrument is Wright-Schmidt. Large format (120 size) film used.  
 NOTE F Lumicon Deep Sky filter used. (Observer's image identifier is followed by suffix "/85".) City lights interfered with the observation.

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SUB-NETWORK: SPECTROSCOPY

Date(UT)	ACN#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdag	Id/Typ	Site	Observer(s)	Notes
10.083	870103	600G-O	CL	0.135	1.9		20.00	Kodak Tri-X	400/27	N	C	503/S	2	Buchanan, W.T	A

NOTE A (Observer's image identifier is E-115-03. Ed.) Halley visible.



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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
11.021	813512	5.9	B	101													
11.021	813513				5.9	7			0.203	R	15	15	6.1	Y	1	Ferrin,I	
11.029	813514	5.4	B	101					0.036	B	13	110		Y	1	Phillips,J	
11.029	813515			101	13.0	6			0.07	B		3	6.5	Y	2	de Assis Neto,V.F	
11.054	813516	6.0	B	101					0.12	B		20	6.5	Y	2	de Assis Neto,V.F	A
11.056	813517	4.6	M	101					0.05	B		7	4.5	Y	1	Ferrin,I	
11.083	813518	6.5	S		11	5	0.02		0.080	B		11	8	Y	3	DeYoung,J.A	
11.12	813519	4.4	S	101			0.50	68	0.080	B		11	5.5	Y	1	Spratt,C.E	B
11.142	813520	6.0	B	101				70	0.05	B		7	5.5C	Y	10	Chmielewski,W	
11.2062	813521	5.8	S	DCS			0.20	77	0.254	N	3.8	32	5.0		3	Machholz,D	
11.208	813522	6.4	S	101					0.203	SC	10	125	4.5C	Y	1	Gronek,J.D	C
11.333	813523	5.0	M	101					0.05	B		10	5.5	Y	1	Fabre,R	D
11.354	813524				6.5	7	0.4	60	0.10	N	10	55	5.0C	Y	1	Kato,T	
11.378	813525	5.3	M	101					0.030	B		8	5.0C	Y	1	Kato,T	
11.41	813526	5.7	S	101					0.049	B		3				Jones,A	
11.41	813527			101					0.050	B		7				Jones,A	
11.417	813528	6.3	B	101					0.050	B		7	5.8C	Y	1	Parkinson,M	E
11.42	813529				12	4			0.317	N	5	86	5.0			Jones,A	
11.42	813530	8.7	S	SAO				50	0.317	N	5	86				Jones,A	F
11.42	813531	4.7	S	101					0.03	R	7	8	6.2C	Y		Lovejoy,T	
11.42	813532	5.9	S	101					0.050	B		7	5.0C	Y	1	Matchett,V	
11.434	813533	5.7	S	101					0.1	N	10	40	4.0	Y	6	Ichikawa,K	
11.44	813534				7.5	6			0.21	N		80				Knyazyuk,N	
11.445	813535	5.8	M	101					0.08	B		11	4.5	N	1	Mitsuma,S	
11.458	813536	6.0	B	101					0.05	B		7	4.0C	Y	1	Hasegawa,T	
11.47	813537	5.6	M	101					0.05	B		7	5.0	Y	2	Suzuki,K	
11.47	813538	5.8	B		18	6	0.7		0.05	B		10	5.0	N	1	Uda,K	
11.476	813539	6.1	B	101					0.07	B		10	4.5	Y	1	Date,M	
11.50	813540	7.0	B	SAO					0.15	N	5.7	34	3	Y	2	Tanikawa,M	G
11.51	813541	7.1	B	SAO					0.15	N	6	23	3	Y	2	Tanikawa,M	G
11.51	813542	6.0	B	SAO					0.05	B		7	3	Y	2	Tanikawa,M	
11.521	813543	6.2	S	101					0.15	N	6	32	C	Y	1	Nakatsuki,M	
11.548	813544	5.7	S	101					0.07	B		10	3.5	Y	1	Kobayashi,J	
11.549	813545	6.2	S	101					0.08	R	12.5	40	5.5	Y	1	Feisheng,J	
11.563	813546	5.3	M	101					0.1	N	10	40	5.5	Y	1	Ichikawa,K	
11.563	813547	5.6	M	101					0.060	R	15	45	5.4C	Y	1	Purviskis,R	
11.57	813548	5.1	S	101					0.065	B		20	5.4	Y		Pearce,A	
11.63	813549	5.1	B	AAVSO					0.11	R	7					Churyumov,K	
11.70	813550	5.7	B	AAVSO					0.20	R	15					Churyumov,K	
11.709	813551	6.1	B	101					0.114	N	7.9	45	5.4C	Y	1	Raffaello,D	H
11.71	813552	6.2	B	101					0.08	B		20	5.5	Y	1	Spell,J	I
11.73	813553	6.0	B	M					0.08	B		40				Palko,Yu	
11.736	813554								0.305	N	5	60	6.2		2	Zanotta,M.V	J
11.75	813555	5.6	S	AAVSO					0.08	R	10	29				Golubev,V	
11.776	813556	5.6	B	101					0.065	B		20	4.1	Y	1	McBain,J	
11.785	813557	6.0	B	101					0.05	B		7	5			Dal Santo,M	K
11.785	813558	6.1	M	101					0.07	B		16	4.5C	Y	1	Taylor,M.D	L
11.79167	813559	5.8	B	101					0.05	B		10	6.0C	Y	2	Franciosi,C	M
11.792	813560	6.3	B	101					0.114	N	8.7	100		Y	1	Rodriguez C.,J.A	
11.80	813561	4.6	B	101					0.050	B		7	5.5	Y	2	Merlin,J.-C	
11.80	813562	5.1	B	AAVSO					0.11	R	7					Churyumov,K	
11.803	813563	7.0	S	SAO					0.31	N	5	62				Giampaolo,G	
11.833	813564	6.0	AAVSO						0.080	B		11		Y		Stomeo,E	
11.854	813565	5.8	B	4A					0.050	B		7	5.5	Y	1	van der Mey,L	
11.858	813566	6.7	B	101					0.080	B		20	5.0C	Y	2	Dionisi,M	N
11.87	813567	5.7	S	DCS 6A					0.050	B		16	5	Y	1	van Asperen,H	
11.872	813568	6.2	M	122					0.114	N	8	36	5.0	N	1	Pennelli,G	
11.875	813569			101					0.15	N	6.6	50	5.5	Y		Dal Santo,M	
11.878	813570								0.508	C	20	240	5.0	Y	4	Foulkes,M	O
11.889	813571	5.6	S	101					0.065	B		12	5.0	Y	4	Foulkes,M	O
11.903	813572	6.0	M	101					0.05	B		10	6.0C	Y	3	Melandri,F	
11.908	813573			101					0.030	B		8	5.0C	N	1	Villa,M	
11.913	813574	4.7	S	101					0.05	B		10	3.0	N	1	Hurst,G.M	P
11.913	813575	5.9	M	101					0.030	B		8	5.0C	Y	1	Villa,M	
11.922	813576			101					0.114	N	8.7	25	4.5C	Y	1	Villa,M	
11.94	813577	6.2							0.034	B		9			1	Pereira,A	Q
11.958	813578	4.9	S	101					0.03	B		6	5.0C	Y	1	Milani,G	

NOTE A Tail invisible.

NOTE B Hazy weather. VVL hazy coma. [sic]

NOTE C Exc. see.

NOTE D (PA value appears to be measured incorrectly. Ed.)

NOTE E Star-like central condensation.

NOTE F Condensation.

NOTE G m2 (observer's symbol believed to mean "approximately equal to", Ed.) 11.

NOTE H No tail.

NOTE I Faint aurora.

NOTE J In yellow-green filter, tail broken in two parts divided by a darker area where it joins the coma; afterward the two parts gathered (giving an egg-shape to the coma-tail system); then the tail went on straight and narrow. Tail PA 65.

NOTE K Cloudy - limited visibility. (Observer indicated Y/N for dark adaptation).

NOTE L Haze. Seeing Antoniadis III.

NOTE M Veiled ski. [sic] Coma diameter approximate.

NOTE N Coma diameter accuracy +/-0.1. Clouds.

NOTE O Unsteady.

NOTE P Coma diameter approximate. Passing cloud.

NOTE Q (Observer gave limit as 8.0. Ed.)

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
11.000	830452	0.66	0.114	N	8	45.90	41	4.5	1	Mac Kenzie,G	
11.026	830453	0.22	0.203	R	13	110				Phillips,J	A
11.51	830454	1.03	0.15	N	5.7	34	14	3	2	Tanikawa,M	B
11.51	830455	1.37	0.15	N	5.7	23	14	3	2	Tanikawa,M	C
11.845	830456	0.1	0.080	B		20	65	5.0	2	Dionisi,M	D
11.885	830457	0.58	0.150	N	6.6	100	4	4.5	1	Dal Santo,M	
11.905	830458	1.2	0.150	N	6.6	33	4	4.5	1	Dal Santo,M	

NOTE A City lights. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Dia. and m2 (observer's symbol believed to mean "approximately equal to", Ed.) 12' and 11', respectively. DC = 5/10. ml =

DATE: 11 DEC 1985

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7.0.  
NOTE C Dia. and m2 (observer's symbol believed to mean "approximately equal to", Ed.) 12' and 11, respectively. DC = 5/10. m1 = 7.1.  
NOTE D City lights interfered with the observation. A very bright jet internal to coma has the same luminosity of the nucleus [sic]; PA 0 at 0.0', PA 27 at 0.5', PA 36.5 at 1.0'. Another jet has the same luminosity of the coma; PA 150 at 0.0', PA 158 at 1.0'.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
11.112	850422	3.00		1.00	0.7 x 0.5	30.00	IIa-O		N		9/P	1	Ferrin,I	A
11.813	850423	0.225	1.7	0.136	9.1 x 6.1	1.50	Kodak 103a-O		N		001/P	1	Bordignon,F	B
11.822	850424	0.803	2.1	0.350	2.6 x 1.7	0.50	Kodak 103a-F		N	M	22/P	1	Guarro,J	
11.825	850425	0.803	2.1	0.350	2.6 x 1.7	1.00	Kodak 103a-F		N	M	23/P	1	Guarro,J	
11.831	850426	0.803	2.1	0.350	2.6 x 1.7	10.00	Kodak 103a-F		N	M	24/P	1	Guarro,J	
11.835	850427	1.400	5.6	0.260	1.5 x 1.0	15.00	Ilford HP5	400/27	N	O	6/C	1	Paolinetti,R	C
11.845	850428	1.400	5.6	0.260	1.5 x 1.0	10.00	Ilford HP5	400/27	N	O	8/C	1	Paolinetti,R	C
11.845	850429	0.600	6		3.4 x 2.3	44.00	Ilford HP4	400/27	N	O	00/C	1	Paolinetti,R	D
11.852	850430	1.400	5.6	0.260	1.5 x 1.0	15.00	Ilford HP5	400/27	N	O	9/C	1	Paolinetti,R	C
11.861	850431	0.180	2.8		11.4 x 7.6	20.00	Kodak 2415		Y	O	2/P	4	Uberti,M	

NOTE A Instrument is Schmidt camera.

NOTE B Instrument used is Celestron 5" [sic] Schmidt camera. The seeing wasn't too good because of several passages of clouds.

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

NOTE D Large format film (4x5 inch) used. Instrument is astrograph.

DATE: 12 DEC 1985

DATE: 12 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	
12.063	813579	5.8	B	101	15	6	0.17	50	0.035	B		7	4.0	Y	1	Stephan,C	A	
12.066	813580	6.8	B	101	25	5			0.203	R	13	85	4.9	N	1	Fox,J.H	B	
12.07	813581	4.5	B	101	35	3				EY			7.0	Y	1	Keen,R		
12.08	813582	5.5	M	101	15	7	1.2	70	0.32	N	4	33	7.0	Y	1	Keen,R		
12.09	813583	5.1	M	101	18	6	0.7	70	0.040	B		8	7.0	Y	1	Keen,R	C	
12.09	813584	5.1	M	54, 100	16	6			0.050	R		8	5.5	Y	14	Morris,C.S	D	
12.10	813585	5.2	M	101	18	6	1.0	70	0.080	B		11	7.0	Y	1	Keen,R	C	
12.11	813586	4.5	S	101	25	6	0.75	65	0.080	B		11	5.5	Y	1	Spratt,C.E		
12.128	813587	5.8	B	101		1			0.05	B		7	4.1	N	2	Benavides,A		
12.146	813588	6.3	S		11	6			0.080	B		11	8	Y	3	Pryal,J	E	
12.167	813589	4.9	S	101	8	6			0.203	SC	11	67	4.0	Y	1	Jacobs,T	F	
12.174	813590	6.1	B	101	15	5		65	0.05	B		7	5.5C	Y	10	Chmielewski,W		
12.184	813591	6.0	M	101	3.5	8			0.076	R	15	48	4.5	Y	4	Poulos,D		
12.2090	813592	5.8	S	DCS	6	9	0.12	77	0.254	N	3.8	32	5.0	Y	3	Machholz,D		
12.222	813593	5.9	B	101		5			0.050	B		10	5.0C	Y	1	Stapleton,J	G	
12.226	813594		M	101	10	7	0.33	305	0.254	N	5.6	157	5.0C	Y	1	Stapleton,J	H	
12.319	813595	4.9	M	101	20	7	0.55	290	0.05	B		10	5.5	Y	1	Fabre,R	I	
12.386	813596	5.5	B	101	25				0.05	B		7	5.0C	Y	1	Hayashi,H		
12.43	813597	4.5	S	101					0.03	R	7	8	6.2C	Y	1	Lovejoy,T		
12.431	813598	6.1	B	101	12	5			0.050	B		7	5.8C	Y	1	Parkinson,M		
12.44	813599	5.0	S	101		3			0.050	B		7	5.0C	Y	1	Matchett,V		
12.447	813600	5.5	S	101	15	3			0.050	B		12	5.8	Y	1	Batza,H		
12.45	813601	5.8	M	101	10	7	0.42		0.08	B		11	5.5	Y	1	Mitsuma,S	J	
12.45	813602						0.33	70	0.08	B		15				Seargent,D		
12.458	813603	4.7	S	101		7			EY				6	Y	1	Seargent,D		
12.458	813604	6.2	S	101	2.0	3			0.08	R	12.5	40	5.5	Y	1	Feisheng,J		
12.458	813605	4.5	S	101					0.05	B		10	6.0	Y	13	Garradd,G		
12.46	813606	5.4	S	AAVSO	10	5			0.13	N	6.3	24	4.5	Y	1	Hayashi,A		
12.470	813607	5.6	S	101		7			0.05	B		10	5.0	Y	1	Williams,P.F		
12.471	813608				6.5	6	0.13	60	0.10	N	10	55	5.0C	Y	1	Kato,T		
12.472	813609	6.1	S	101	3.1	6			0.15	N		6	32	C	Y	1	Wakatsuki,M	
12.475	813610				5	9			0.15	N		8	50	5.0	Y	1	Williams,P.F	
12.477	813611	5.0	M	101	17	6			0.030	B		7	5.0C	Y	1	Kato,T		
12.500	813612	5.5	B	101	10				0.035	B		7		Y	2	Okada,M		
12.51	813613	5.5	M	101			0.7		0.05	B		7	5.5	Y	2	Suzuki,K		
12.51	813614				3.9	5			0.31	N	5.7	147	5.5	Y	2	Suzuki,K	K	
12.528	813615	5.7	S	101	8	5			0.153	N	8.6	33	3.5	Y	1	Iwaki,Y		
12.556	813616	5.9	B	101	15	5			0.060	B		10	4.0	Y	1	Moriya,M	L	
12.573	813617	6.0	B	101					0.07	B		10	5.0	Y	1	Dale,M	M	
12.576	813618	5.6	M	101	7.8				0.060	R	15	45	5.1C	N	1	Purvinakis,R	N	
12.60	813619	5.3	B	AAVSO	25	6	1	70	0.11	R	7	61	4	C	Y	1	Churyumov,K	
12.635	813620				6.2	5			0.254	N	6	41	4	C	Y	1	Bhadriah,L.H.E	
12.65	813621	5.4	B	AAVSO					0.11	R	7					Churyumov,K		
12.65	813622	5	B	M	10				0.03	B		8				Zin'yev,V.A		
12.691	813623	4.7	S	101	20	6	2.0		0.152	N	5	44	5.4	Y	2	Moeller,X	O	
12.694	813624	4.7	S	101		6			0.050	B		7	4.5	N	1	Lunde,R	P	
12.698	813625	5.7	M	101	8	4			0.08	B		10	5.0C	N	1	Rapavy,P	Q	
12.708	813626	4.7	S	101	12.0	6			0.080	B		20	4.3C	Y	1	Baroni,S		
12.708	813627	4.4	S	101	17	7	1.06	64	0.050	B		7	6.5	Y	1	Meozzi,D		
12.71	813628				8	6	0.33	80	0.100	B		14	5.0	Y	1	Kralling,W	R	
12.71	813629	5.2	B	101	8	6			0.056	B		8		Y	1	Kralling,W		
12.71	813630	5.8	B	M					0.08	B		40				Palko,Yu		
12.712	813631	5.6	M	101	9	4			0.10	B		25	5.0C	Y	1	Rapavy,P	Q	
12.716	813632	4.5	S	101	11.6	6	0.57	70	0.140	SN	3.6	19	6.5	Y	1	Meozzi,D		
12.72	813633	4.8	B	4A	5	6			0.056	B		8	4.7	Y	1	Kralling,W		
12.72	813634	4.8	B	4A	5	6	0.33	70	0.100	B		14	4.7	Y	1	Kralling,W	S	
12.726	813635	5.2	M	101	18	6	0.67	75	0.08	B		11	4.0	Y	1	Gubo,H		
12.726	813636	5.4	B	101	13.4	4			0.03	B		8	5.5	Y	1	Hasubick,W		
12.729	813637	6.2	B			5			0.050	B		10	C	Y	1	Linke,H		
12.730	813638	5.8	B	101					0.050	B		7	5.0C	Y	1	Ruiz,J		
12.73	813639	5.5	B	DCS 6A	12	4			0.063	B		8	4.5C	N	1	Geenen,J.J		
12.73	813640	5.6	S	AAVSO					0.08	R	10	29				Goldfarb,M		
12.735	813641				6	6			0.208	N	5.8	48	5.0C	Y	1	Ruiz,J		
12.736	813642	5.3	S	101	7	6			0.050	B		7	4.5C	Y	1	Piccinini,M		
12.740	813643	5.2	B	101	8.4				0.080	B		20	5.5	Y	1	Koch,B.O		
12.740	813644	5.0	M	101	10	4	0.5	80	0.040	B		8	6.0	Y	2	Weissferdt,F	T	
12.75	813645	5.1	M	101	10	7			0.05	B		10	4.3	Y	1	Bottger,B		
12.75	813646	5.4	S	101	6	7			0.08	B		15	4.5	Y	1	Glowinski,C		
12.75	813647	4.3	S	DCS 6A	15	8			0.050	B		10	5.5C	Y	1	Aerts,L		
12.75	813648	5.3	B	DCS6A6B	12	7	0.42	60	0.115	N	8	45	5.5C	Y	1	van Munster,T		
12.75	813649	4.5	V	101	45	3	1.25	68		EY		6	6.0	Y	2	Merlin,J.-C		
12.756	813650	6.1	B	101	2	2			0.050	B		12	4.3C	N	1	Raffaello,D	U	
12.7562	813651	5.5	S	AAVSO		5			0.05	B		7	5.0	N	1	Sicoli,P		
12.76	813652	5.7	M	101		4			0.15	N	8	56	5.0	Y	1	Sardini,D		
12.760	813653	6.0	B	101		3			0.07	B		10	5.2	N	1	Deconinck,M		
12.763	813654	5.7	B	101	5.6	6	0.17	90	0.330	N	4.5	59	6.3	Y	1	Castino,R		
12.764	813655	4.7	B	101	10.7	6	0.77	68	0.030	B		8	5.0	Y	2	Linder,J		
12.764	813656						0.8	61	0.250	N	6	150		Y	1	Guthier,O	V	
12.765	813657	4.9	B	101	11.5	7	0.7	70	0.063	B		9	5.5	Y	3	Kammerer,A		
12.765	813658	4.8	S	101	13.0	7	1.27	60	0.08	B		15	6.3	Y	5	Haver,R		
12.775	813659	4.6	S	101	13.5	6	1.53	60	0.05	B		7	6.3	Y	5	Haver,R		
12.7775	813660	6.0	B	101	5	4			0.08	B		20	4	Y	1	Gozzoli,E	W	
12.778	813661	6.0	M	101	16	4	0.50	300	0.050	B		10	4.5C	Y	1	Lozano,L	X	
12.780	813662	4.4	S	101					EY				6.3	Y	5	Haver,R		
12.78	813663	5.5	B	DCS 6A		5			0.063	B		9	5.5C	N	1	Swart,E.T		
12.78	813664	4.9	S	DCS 6A	6	7			0.050	B		10	5.5C	Y	1	van Loo,F.R		
12.78	813665	5.4	B	E		3			0.08	B		88				Dzhultsev,K		
12.78	813666	5.4	B	E		3			0.08	B		8				Kolchanov,V		
12.78	813667	5.4	B	E		3			0.08	B		8				Sladkov,Ya		
12.78	813668				20		0.1		0.05	B		7				Sedelkin,D		
12.78	813669	5.6	B	M					0.08	R	10	29				Goldfarb,M		
12.78	813670	5.4	B	E					0.08	B		8				Navalihin,M		
12.78	813671	5.4	B	E					0.08	B						Chuprakov,S		
12.781	813672				6.7	3			0.150	N	6	45	5.2	Y	1	Castino,R	Y	
12.781	813673				8	5	0.7	70	0.20	N	6	40	5.0C	Y	1	Iz Causi,G		
12.781	813674	4.8	S	101	5	5			0.05	B		10	6.0	Y	1			

DATE: 12 DEC 1985

DATE: 12 DEC 1985

Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
12.785	813680	4.8	B	101	15				0.03	B		6	6.0	Y	2	Milani,G	
12.785	813681	5.8	B	101	5	5			0.210	N	5.7	66	4.3C	Y	1	Temprano,J	
12.79	813682	5.0	S	DCS 6A		3			0.080	B		15	5	Y	2	Bril,H.J	
12.79	813683	5.2	B	M	7				0.08	B		8				Golubev,V	
12.79167	813684	5.7	B	101	9	7			0.05	B		10	6.2C	Y	2	Franciosi,C	
12.792	813685	5.6	M	101					0.06	R	4.5	10	4.3	Y	1	Chodorowski,F	
12.792	813686				6	5			0.15	N	6.6	50	5.0C		1	Dal Santo,M	a
12.792	813687	5.0	B							BY						Guthier,O	
12.792	813688	4.5	S	101	15	7		70	0.08	B		20	5.7	Y	3	Parasio,R	
12.799	813689				10	3			0.064	R	12	32	4.3	Y	1	Chodorowski,F	
12.799	813690	6.0	B	101					0.05	B		7	5	Y	1	Dal Santo,M	b
12.80	813691	5.4	B	DCS 6A					0.080	B		15	5	Y	2	Bril,H.J	
12.809	813692	6.2	M	122	6.0				0.114	N	8	36	5.0	N	1	Pennelli,G	
12.819	813693	4.2			45	6	1.0	70	0.080	B		15	5.0	Y	3	Lucius,D	c
12.83	813694	4.2	S	DCS 6A	21	4	1.5		0.046	R	4	8	6	Y	3	van de Weg,R.L.W	
12.83	813695	5.0	B	DCS 6A	21	4	1.5		0.046	R	4	8	6	Y	3	van de Weg,R.L.W	
12.83	813696	4.4	S	DCS 6A	17	7	2.0	70	0.060	B		12	6	Y	3	van de Weg,R.L.W	d
12.83	813697	5.0	B	DCS 6A	17	7	2.0	70	0.060	B		12	6	Y	3	van de Weg,R.L.W	d
12.833	813698	6.7	B	58	15	5			0.102	R	14.7	60		Y	1	Medway,K	e
12.835	813699	6.0	B	101	10.5	2			0.08	B		20	5.2	Y	1	Gigli,P	f
12.840	813700	5.8	B	101	0.4	6	0.06	297	0.28	SC	5	70	4.1	Y	1	Amoretti,M	
12.85	813701	6.0	S	101	8	7			0.203	SC	10	44	5.6C	Y	2	Maraziti,A	
12.851	813702	6.0	B	101	2.5	3	0.03	60	0.080	B		20	5.0C	Y	2	Dionisi,M	g
12.865	813703	5.0	B	101	4.5	4	0.15	85	0.203	SC	10	50	5.0	Y	1	Dietrich,M	T
12.903	813704	4.7	B	101	8	6	0.27	68	0.100	B		14	5	Y	1	Linder,J	h
12.95	813705	4.1	S	AA	25	6			0.050	B		7				Green,D.W.E	i
12.951	813706				5				0.040	B		8			1	Levai,R	
12.97	813707	4.7	S	AAVSO					0.050	B		10				Bortle,J.E	j

NOTE A Tail approx 10' ring in 7x35's. Only narrow portion seen.

NOTE B Streamers in coma. SAO 128260 comparison star.

NOTE C Modified Sidgwick method used.

NOTE D Chart 101 also used.

NOTE E Clouds at 20:00 PST.

NOTE F Tail just barely visible in 7x35 binocular not in 8 inch Schmidt-Cass.

NOTE G Near horizon. In Psc.

NOTE H Some light pollution. (PA value may have been incorrectly determined. Ed.)

NOTE I (PA value appears to be measured incorrectly. Ed.)

NOTE J 9.5. PA 65 to 70.

NOTE K Meter: coma diameter is P1 + P2.

NOTE L Seeing 3/5.

NOTE M Cloud impeding observation.

NOTE N A round disk-like orange nucleus, a distinctly seen cone of matter emanation to S and to sun, exactly what V. Struve and

F. Bessel saw in comet Halley in 1835.

NOTE O PA 80, 130. Twilight.

NOTE P Deep twilight.

NOTE Q High clouds. Cirrus?

NOTE R Type I.

NOTE S Tail PA approximate.

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

NOTE U No tail.

NOTE V Core structure. (Translated by IHW staff. Ed.)

NOTE W Haze.

NOTE X Fog.

NOTE Y Magnification approximate.

NOTE Z Core magnitude 10. (Translated by IHW staff. Ed.)

NOTE a Lighted sky - haze. Coma diameter approximate. (Observer indicated Y/N for dark adaptation. Ed.)

NOTE b Very cloudy after this estimate.

NOTE c (Observer indicated "A" method [Argelander?]. Ed.) Coma diameter approximate.

NOTE d Tail length is lower limit.

NOTE e (Observer gave limit as 13.0. Ed.)

NOTE f Clear, slight wind. (Translated by IHW staff. Ed.)

NOTE g Coma diameter accuracy +/-0.6. Tail length accuracy +/-0.01.

NOTE h Poor weather. Tail length approximate.

NOTE i Coma diameter approximate.

NOTE j Cirrus clouds.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
12.041	830459	0.25	1.00		21	210	87	6.2	1	Ferrin,I	A
12.043	830460	0.38	0.254	N	5.6	60,120,180	17	6.5	2	Knisely,D	B
12.066	830461	0.6	0.203	R	13	85,225	10	4.9	1	Fox,J.H	C
12.075	830462	0.99	0.15	N	6	30	5		1	Zanette,D	
12.080	830463	0.43	0.203	N	6	61,116	10	5.5	1	Williams,J	D
12.51	830464	1.03	0.15	N	5.7	34	14	3	2	Tanikawa,M	E
12.747	830465	0.58	0.100	M	10.5	35	10	4.5	1	Piccinini,M	
12.764	830466	0.250	N	6	75				1	Guthier,O	F
12.766	830467	0.06	0.40	N	5	81,254	15	6.0	2	Merlin,J.-C	G
12.778	830468	0.250	N	6	150				1	Guthier,O	H
12.785	830469	0.2	0.210	N	5.7	66			1	Temprano,J	I
12.785	830470	0.6	0.200	N	6	35,200	10	5	1	Li Causi,G	J
12.786	830471	0.58	0.150	N	6.6	100	3	4.5	1	Dal Santo,M	
12.814	830472	2	0.05	R	7	40	25	5.0	1	Kopp,M	K
12.816	830473	1.92	0.080	B	15		30	5.0	3	Lucius,D	L
12.839	830474	0.356	SC	11	200		165		1	Verdenet,M	M
12.861	830475	0.22	0.203	SC	10	77,167	20	5.6	2	Maraziti,A	N

NOTE A Comet looked featureless, all symmetric around, with strong central condensation of diameter about 14 arc sec. (Three drawings supplied made at 0020, 0105, and 0140 UT. Ed.)

NOTE B Stellar central condensation surrounded by bright irregular disk about 10" arc diameter. Hint of possible outer envelope at southwest edge of coma. Dark patch PA 20 from 1/2 coma radius to coma edge. Bright spine from nucleus down tail to about 15' arc from nucleus. Faint radial streamer or jet noted at PA 120 approximately 7' arc long. Tail faint and uniform except for vague patch just outside coma with tail 1/2 to 1/3 coma diameter at its widest. Magnification of 240x also used.

NOTE C "Fountain effect" W of nucleus more apparent at 225x. At 85x, W side of coma just seems brighter and more sharply defined than E which simply diffuses to invisibility. Nuclear condensation more easily seen than in previous nights.

NOTE D Fuzzy starlike center with coma brightening toward center. Outer coma very faint, no detail. Lights from city (pop. 1,000,000) 30 miles to the west starting to interfere by brightening sky.

NOTE E Dia. and m2 (observer's symbol believed to mean "approximately equal to", Ed.) 12' and 11, respectively. DC = 5/10. ml = 6.5.

NOTE F Coma distinctly condensed, condensation in center approximately 10th magnitude. Tail: PA 61, 48'; PA 69, 60'; PA 76, 36'. (Translated by IHW staff. Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE G Jet at PA 3, diffuse, tail at PA 31, straight, tail at PA 68; jet at PA 167, bright jet finishing in curved and diffuse fountain to PA 113; jet at PA 229, narrow, curved jet about sunward; jet at PA 276, diffuse.

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NOTE E Using 150x, a "kidney-shaped" structure became visible. Naked eye observation of Halley approximately 5.1 mag. (Translated by IHW staff. Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE I (Duration not indicated. Time of observation is assumed to be roughly mid time. Ed.)

NOTE J Coma was very bright and little shaded. DC was 5. Tail at PA 70 was brighter from condensation to the indicated star. The rest of the tail was very little contrasted, and difficult to see. [sic] To see the second tail was easier at 200x. I'm not sure at all about the presence of the third feature/tail. City lights interfered with the observation.

NOTE K Temp.: 2 deg. C. Diffuse coma very faint but increasing brightness toward the center; tail faint, too. Vertex distance:  $V = 10.5$ . Semi latus rectum:  $P_1 = 9.0'$ ,  $P_2 = 9.0'$ . Tail PA = 30 deg.

NOTE L Tail at PA 70.

NOTE M (Additional drawing submitted made using 11x80 binoculars (2.05"/mm). Ed.)

NOTE N Bright "nucleus", not pointlike (Word translated by IHW staff. Ed.); bright condensation surrounding the nucleus which is placed in the northern side of it at PA 355. Very large and diffuse coma (DC = 7); no tail seen. Vertex distance = 3.1'. Semi latus rectum  $P_1 = P_2 = 4.0'$ .

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.015	850432	3.00		1.00	0.7 x 0.5	14.00	IIa-O		N		2/P	1	Ferrin,I	A
12.131	850433	0.500	5		4.1 x 2.7	10.00	Ilford KP1	400/	N	S	1/P	3	Sanford,J	B
12.153	850434	0.180	2.8		11.4 x 7.6	7.00	Ilford KP1	400/	N	S	2/P	3	Sanford,J	B
12.163	850435	0.200	2.8		10.3 x 6.9	4.00	Kodak Tri-X	400/	N	X	709/N	1	Lazerson,H	C
12.174	850436	0.205	3.8		10.0 x 6.7	10.00	Kodak VR 200		N	T	8/P	1	Cunningham,J	D
12.194	850437	0.205	3.8		10.0 x 6.7	10.00	Kodak VR 200		N	T	9/P	1	Cunningham,J	D
12.210	850438	0.300	1.5	0.200	6.9 x 4.6	4.00	Kodak 2415		Y	S	3/P	1	Yen,B	E
12.747	850439	0.100	2.9		20.4 x 13.7	20.00	Kodak Tri-X	400/	N	T	140/P	1	Hernschier,W	F
12.759	850440	0.500	3.5		4.1 x 2.7	5.00	103a-O		N		701/P	1	Soc. Astro. de France	G
12.792	850441	1.400	5.6	0.260	1.5 x 1.0	20.00	Ilford HP5	400/27	N	O	21/C	1	Paolinetti,R	
12.803	850442	1.400	5.6	0.260	1.5 x 1.0	10.00	Ilford HP5	400/27	N	O	22/C	1	Paolinetti,R	
12.813	850443	1.400	5.6	0.260	1.5 x 1.0	15.00	Ilford HP5	400/27	N	O	23/C	1	Paolinetti,R	
12.816	850444	0.300	1.5	0.200	6.9 x 4.6	8.00	Fujichrome	400/	N	O	2/T	2	Genebriera,J	H
12.841	850445	0.803	2.1	0.350	2.6 x 1.7	0.50	Kodak 103a-F		N	M	25/P	1	Guarro,J	
12.848	850446	0.803	2.1	0.350	2.6 x 1.7	8.00	Kodak 103a-F		N	M	26/P	1	Guarro,J	
12.864	850447	0.300	1.5	0.200	6.9 x 4.6	9.00	Kodak 2415		Y	O	4/T	2	Genebriera,J	
12.921	850448	1.905	5.4	0.350	1.1 x 0.7	30.00	Kodak 2415		Y	O	5/T	2	Genebriera,J	
12.947	850449	0.600	1.7	0.350	3.4 x 2.3	13.00	Ilford HP4		N		001/T	1	Belli,V	A
12.957	850450	0.600	1.7	0.350	3.4 x 2.3	2.05	Kodak 103a-O		N		002/T	1	Belli,V	A

NOTE A Instrument is Schmidt camera.

NOTE B Skylight filter used.

NOTE C (Observer's image identifier is 17-9. Ed.) "Push" processed to 800 ASA.

NOTE D Film "push" processed from ISO 200 to 800.

NOTE E Start time approximate. (Observer's image identifier is 21. Ed.) Instrument is Schmidt camera.

NOTE F Lumicon Deep Sky filter used. (Observer's image identifier is followed by suffix "/85".) City lights interfered with the observation.

NOTE G Photograph made by P. Morel.

NOTE H (Observer's report form is ambiguous. The film may have been hyper-sensitized in forming gas (10% H<sub>2</sub>, 90% N<sub>2</sub>) at 48 C for 22 hours. Ed.)

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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	
13.021	813708	6.8	B	101	20	5			0.203	R	13	85	4.3	N	1	Fox,J.H	A	
13.045	813709	5.0	B	101	23.2	6			0.07	B		10	6.5	Y	2	de Assis Neto,V.F	B	
13.066	813710	5.5	B	101		2			0.05	B		7	4.1	Y	2	Benavides,A		
13.09	813711	4.8	M	100,101	14	7			0.050	R		8	5.5	Y	14	Morris,C.S		
13.094	813712	5.8	B	101	15	5			0.050	B		10	5.0C	Y	1	Stapleton,J	C	
13.10	813713	4.8	M	100,101	12	7	2.5	68	0.080	B		20	5.5	Y	14	Morris,C.S	D	
13.11	813714	4.3	S	101	25	6	1	65	0.080	B		11	6.0	Y	1	Spratt,C.E		
13.11	813715	4.4	S	101	20	7	1	65	0.140	SN	3.6	28	5.7	Y	1	Spratt,C.E	E	
13.146	813716	5.3	M	101	17.0	7			0.05	B		12	7.0	Y	1	Knight,S		
13.1736	813717	5.1	DCS		10				0.080	BY		20	5.4		3	Machholz,D		
13.1736	813718	5.6	S	DCS	12	6	0.23	79	0.080	B		20	5.4		3	Machholz,D		
13.1736	813719	5.1	DCS		10				0.080	BY		20	5.4		3	Machholz,D		
13.177	813720	4.9	M	101	17.0	7	2.0	70	0.05	B		12	7.0	Y	1	Knight,S	F	
13.184	813721	6.1	B	101	16	14		65	0.05	B		7	5.5C	Y	10	Chmielewski,W		
13.215	813722	5.0	M	101	11	6			0.050	B		7	4.7	Y	1	Robertson,T		
13.222	813723			101	8.7	7			0.15	N	8	68	4.7	Y	1	Robertson,T		
13.229	813724	4.9	M	101	20	6	2	290	0.05	B		10	5.5	Y	1	Fabre,R	G	
13.385	813725	5.4	M	101	25	7			0.035	B		7	3	Y	1	Watanabe,H		
13.395	813726	5.6	M	101	14	7	0.67	65	0.08	B		11	6.5	Y	2	Mitsuma,S	I	
13.399	813727	5.4	M	101	25	6			0.035	B		7	3	Y	1	Watanabe,A		
13.417	813728	4.9	M	101	13.5	6			0.030	B		8	4.5C	Y	1	Kato,T	J	
13.42	813729	4.5	S	101					0.05	B		10	5	Y	1	Sargent,D		
13.438	813730				5	6			0.10	N	10	55	4.5C	Y	1	Kato,T	J	
13.44	813731	4.4	S	101	20	7			0.05	BY		7	7.32	Y	2	Lovejoy,T	K	
13.453	813732	5.7	B	101	25				0.05	B		7	4.5C	Y	1	Hayashi,H		
13.458	813733	6.2	S	101	2.0	3			0.08	R	12.5	40	5.5	Y	1	Feisheng,J		
13.458	813734	4.5	S	101		7			0.05	B		10	6.0	Y	13	Garradd,G		
13.458	813735	6.0	S	101	3.2				0.15	N	6	45	5	Y	1	Watanabe,M		
13.46	813736	5.4	S	AAVSO	9	5	0	60	0.13	N	6.3	24	4.5	Y	1	Hayashi,A		
13.47	813737	5.0	B	101		6			0.15	N	8.6	41	6.0	Y	4	Makino,Y		
13.47	813738	5.5	M	101					0.05	B		7	4.5	Y	2	Suzuki,I		
13.47	813739			101	3.5	5	0.5		0.31	N	5.7	147	4.5	Y	2	Suzuki,K	L	
13.48	813740	4.9	S	101	12.7	6	0.6	60	0.05	B		7	5.0	Y	1	Kanai,K		
13.48	813741	5.1	B	101	12.7	6	0.6	60	0.05	B		7	5.0	Y	1	Kanai,K		
13.486	813742	5.7	B	101					0.050	B		7	5.8C	Y	1	Parkinson,M		
13.49	813743	5.5	M	SAO	14	5			0.06	R	12	22	4.0	Y	4	Nakamura,A		
13.492	813744	5.3	S	101	12	3	0.33	70	0.05	B		10		Y	1	Tregaskis,T.B	M	
13.52	813745	5.6	B	M	7				0.05	B		7				Konstantinov,S		
13.52	813746	5.6	B	M	5	6	3	61	0.05	B		7				Guryanov,S		
13.528	813747	5.5	M	101	5.9	7	0.33		0.2	R	12	25	4.0	Y	1	Ichikawa,K	N	
13.542	813748	6.0	B	101		3			0.05	B		7	4.0C	Y	1	Hasegawa,T		
13.56	813749	6	B	M					0.05	B		7				Ponomarev,E		
13.566	813750	5.9	B	101					0.07	B		10	5.0	Y	1	Date,M		
13.573	813751	5.7	M	101					0.050	B		7	4.9C	N	1	Purvinakis,R	O	
13.65	813752	5	B	M	10				0.03	B		8				Zinvyev,V.A		
13.656	813753				7.2	5			0.254	N	6	61	4	C	Y	1	Bhadriah,L.H.E	
13.66	813754	6.1	M	M	28	6			0.04	B		12				Maydik,A		
13.67	813755	5.2	B	AAVSO	12				0.08	B		8				Golubev,V		
13.68	813756	5.0	B	E	20	5			0.05	B		7				Mormil,V		
13.68	813757	5.9	B	M	6	3			0.07	N	8	33				Yurchenko,Yu		
13.68	813758	5.0	B	E	20	5			0.05	B		7				Mormil,V		
13.69	813759	6.2	B	M	7.5	5	0.1	130	0.10	R	10	169				Shilov,S	P	
13.70	813760	5.4	B	M	38	3	1.2		0.05	B		7				Budilka,P		
13.712	813761	6.1		101	0.5	5			0.06	R	6.9	20	4.6	Y	1	Guerrini,F		
13.715	813762	5.5	M	101		5			0.050	B		20	4	C	Y	1	Bhadriah,L.H.E	
13.719	813763	4.4	S	101	16.0	6			0.080	B		20	5.0C	Y	1	Baroni,S		
13.72	813764	6.0	S	101	12	5			0.05	B		10	4.5	Y	1	Zanut,S		
13.73	813765	5.2	S	101					0.08	B		10	4.0	Y	1	Shanklin,J.D	Q	
13.73	813766	5.3	S	VAS 231	5	5			0.205	N	6	80	5.5	Y	1	Germann,R		
13.73	813767	5.2	B	AAVSO					0.11	R		7				Churyumov,K		
13.7395	813768	5.7	B	101	9	7			0.05	B		10	6.0C	Y	2	Franciosi,C	R	
13.743	813769	5.6	M	101	16	13	1.5	65	0.08	B		11	6.0	Y	1	Fleet,R.W	S	
13.747	813770	5.5	S	101	10	6			0.114	N	7.9	26	5.0C	N	1	Bernardis,A	T	
13.747	813771	5.2	B	101	13	5			0.05	B		7	4.5	Y	1	Gainsford,M.J	Q	
13.75	813772	5.3	B	101	2.9	4			0.20	N	4.7	104	5	Y	1	Cappellari,M		
13.750	813773	5.0	B	101	35	7			0.065	B		20	5.0	Y	1	McBain,J	U	
13.751	813774			101	5	4			0.15	N	8	56	5.0	Y	1	Sardini,D		
13.751	813775	6.1		101	0.5	5			0.06	R	6.9	20	4.4	Y	1	Guerrini,F		
13.753	813776	4.5	S	101	10	4	0.20	80	0.050	B		7	4.8C	N	5	Meozzi,D		
13.75634	813777	6.0	B	101	5.4	4			0.08	B		20	3.5	Y	1	Gozzoli,E	V	
13.760	813778	5.2	B	101	30	5	2	70	0.04	B		8		Y	1	Morrisby,A	W	
13.76	813779	5.4	B	E	18	3			0.08	B						Dzhultaev,K		
13.76	813780	5.5	B	E	18	3			0.08	B						Kolchanov,V		
13.76	813781	5.5	B	E	18	3			0.08	B						Sladkov,Ya		
13.76	813782	5.4	B	E	13				0.08	B						Danilov,M		
13.76	813783	5.5	B	E					0.06	R	10	28				Kamnev,Y		
13.76	813784	5.5	B	E					0.06	R	10	28				Pleshkunov,D		
13.76	813785	5.6	B	AAVSO					0.08	R	10	29				Goldfarb,M		
13.76	813786	5.4	B	M	15		0.2		0.08	B		8				Muravyeva,Yu		
13.76	813787	5.4	B	E	12				0.08	B		8				Dyachuk,A		
13.760	813788	5.9	B	101	4	9			0.210	N	5.7	66	4.4C	Y	1	Temprano,J		
13.764	813789	5.5		101					0.05	B	EX	10	6.0	Y	1	Fleet,R.W		
13.771	813790	5.8	M	101	17	7			0.07	B		16	4.5C	N	1	Melandri,F	X	
13.771	813791	5.8	S	101	13.5	4			0.22	R	4	35	5.4	Y	2	Taylor,M.D	Y	
13.771	813792	5.3	B	101	35	25	6	1.1	0.114	N	8.7	100		Y	1	Vincent,J	Z	
13.774	813793	5.1	B	101	12				0.12	R	15	53	6.0C	Y	2	Rodriguez C.,J.A		
13.7743	813794			101	8.5	7	0.11	80	0.03	B		8		Y	1	Franciosi,C	a	
13.781	813795	5.7	B	101	4	2			0.05	B		10	5.5C	N	1	Dominici,A	b	
13.785	813796	5.7	B	101	12	4			0.05	B		7	4.4		2	Menichetti,R		
13.785	813797	5.7	M	CZ	6	4			0.05	B		16	5.8	Y	1	Pravec,P		
13.791	813798	5.4	B	101	5.3	6	0.16	90	0.050	B		36	5.0	Y	1	Castino,R		
13.795	813799	6.1	M	122	6.5	5			0.114	N	8	36	5.0	Y	1	Pennelli,G		
13.80	813800	5.8	B	M	3				0.05	R		20				Nesterov,Yu		
13.806	813801	6.8	B	58	15	5			0.102	R	14.7	60		Y	1	Madway,K	c	
13.809	813802	5.5	B	101					0.050	B		10	6.5	Y	1	Trebacz,A		
13.813	813803				5	4			0.15	N	6.6	50	4.0C	Y	1	Dal Santo,M	d	
13.813	813804	5.8	B	101					0.05	B								

DATE: 13 DEC 1985

DATE: 13 DEC 1985

Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes	
13.840	813809	5.9		AAVSO	8	5	0.83		0.080	B		11		Y		Stomeo,E		
13.844	813810	6.0	B	101	10.5	3			0.08	B		20	5.5	Y	1	Gigli,P	g	
13.860	813811	4.7	S	101	13.0	7	1.63	65	0.080	B		15	6.2	Y	5	Haver,R		
13.864	813812	5.1	S	101	12	6			0.05	B		10	4	C	Y	1	Giuntoli,M	
13.865	813813	6.0	B	101	3.0	3	0.04	62	0.080	B		20	5.0C	Y	2	Dionisi,M	h	
13.87	813814	6.1	S	101	8.1	7			0.203	SC	10	44	5.4C	Y	2	Maraziti,A		
13.88	813815	6.0	B	101					0.05	B		7	5.4C	Y	2	Maraziti,A		
13.880	813816	4.6	S	101	13.5	6	1.63	65	0.05	B		7	6.2	Y	5	Haver,R		
13.880	813817	4.4	S	101						EY			6.2	Y	5	Haver,R		
13.885	813818	5.8	M	101					0.030	B		8	6.0	Y	1	Villa,M		
13.893	813819			101	16				0.030	B		8	5.5	Y	1	Villa,M		
13.90	813820	5.0	M	101	20	6			0.06	R	4	15	5.0	Y	1	Granslo,B.H	i	
13.906	813821	8.4	S	SAO					0.31	N	5	62				Giampaolo,G		

NOTE A Streamers in coma. SAO 128260 comparison star.

NOTE B Tail invisible.

NOTE C Slight haze. In Pac.

NOTE D Gas tail was narrow.

NOTE E Hint of dust tail at PA 90.

NOTE F Gas tail.

NOTE G Filar micrometer used for coma diameter. Central condensation dia. using filar micrometer was 1.08'.

NOTE H (PA value appears to be measured incorrectly. Ed.)

NOTE I m2 = 9.5.

NOTE J Poor transparency.

NOTE K Hint of tail with naked eye. 2.0 deg., PA about 70 tail seen through 15x80.

NOTE L Meter: coma diameter is P1 + P2.

NOTE M Thin cloud. (Observer gave limit as 9.0. Ed.)

NOTE N PA = E.

NOTE O Cloud impeding observing.

NOTE P Tail length and PA approximate.

NOTE Q Cloud.

NOTE R Coma diameter approximate.

NOTE S 19'x16' coma, averted vision.

NOTE T Evident asymmetry.

NOTE U Seen with naked eye.

NOTE V Haze.

NOTE W Tail faint.

NOTE X See with naked eye.

NOTE Y Antoniadis III.

NOTE Z Comp. stars 5.4 and 5.0.

NOTE a Nucleus = 8".

NOTE b (Observer gave limit as 8.5. Ed.)

NOTE c (Observer gave limit as 12.0. Ed.)

NOTE d Very lighted sky. Coma diameter approximate.

NOTE e Lighted sky.

NOTE f I perceive detail. (Roughly translated by IHW staff. Ed.)

NOTE g Clear, no wind. (Translated by IHW staff. Ed.)

NOTE h Coma diameter accuracy +/-1.1. Tail length accuracy +/-0.02.

NOTE i Coma diameter uncertain.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
13.014	830476	0.67	0.090	M	11	50	10	5	2	Arpin,P	A
13.024	830477	0.6	0.203	R	13	85,150	10	4.3	1	Fox,J.H	B
13.715	830478		0.06	R	6.9	20	10	4.6	1	Guerrini,F	
13.758	830479		0.06	R	6.9	20	18	4.4	1	Guerrini,F	
13.760	830480	0.26	0.210	N	5.7	66		5.0	1	Temprano,J	C
13.837	830481		0.06	R	6.9	20	20	4.0	1	Guerrini,F	
13.854	830482	1.5	0.080	B		15	10	6.2	5	Haver,R	D
13.867	830483	0.12	0.125	N	5.8	28, 40, 60	46	4.5	1	Riccabone,G	E
13.881	830484	0.03	0.400	N	5	40,166	16	5.6	2	Sarocchi,D	

NOTE A The central condensation is almost stellar and slightly off center of a circular coma. Total magnitude 4.80.

NOTE B W side of coma definitely brighter and more sharply defined than E side. NE bright edge does not extend into nucleus.

NOTE C Without tail. (Duration not indicated. Time of observation is assumed to be roughly mid time. Ed.)

NOTE D Tail at PA 65. S-shaped feature at PA 70 to 75.

NOTE E Area of greater luminosity at PA 76, PA 118, and at PA 175. The edge of another feature is very distinct and sharp. Diameter of the false nucleus measured with an illuminated reticle is 41 arc sec. Magnifications of 80 and 144 also used. Two drawings included. Intense city lights interfered with the observation. (Translated by IHW staff. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
13.087	850451	1.524	6	0.254	1.4 x 0.9	49.00	Kodak 2415		Y	X	94/P	1	Snyder,L.F	
13.125	850452	2.306	5	0.45	0.9 x 0.6	30.00	Kodak Tri-X		N	M	10/S	1	Webb,R	A
13.163	850453	0.200	2.8		10.3 x 6.9	4.00	Kodak Tri-X	400/	N	X	714/N	1	Lazerson,H	B
13.210	850454	0.300	1.5	0.200	6.9 x 4.6	4.00	Kodak 2415		Y	S	4/P	1	Yen,B	C
13.520	850455	1.760	5.8	0.303	1.2 x 0.8	20.00	Kodak 2415		Y		4/P	1	Niijima,T	D
13.582	850456	0.268	2.6	2	7.7 x 5.1	12.00	Ilford HP5		N	X	4/P	1	Richardson,C	E
13.764	850457	1.400	5.6	0.260	1.5 x 1.0	20.33	Ilford HP5	400/27	N	O	1/C	1	Paolinetti,R	F
13.784	850458	1.400	5.6	0.260	1.5 x 1.0	15.00	Ilford HP5	400/27	N	O	2/C	1	Paolinetti,R	F
13.784	850459	0.300	1.5	0.200	6.9 x 4.6	4.50	Kodak 2415		Y		101/P		Jager,M	G
13.795	850460	1.400	5.6	0.260	1.5 x 1.0	15.00	Ilford HP5	400/27	N	O	3/C	1	Paolinetti,R	F
13.801	850461	1.400	5.6	0.260	1.5 x 1.0	2.00	Ilford HP5	400/27	N	O	4/C	1	Paolinetti,R	F
13.804	850462	1.400	5.6	0.260	1.5 x 1.0	4.00	Ilford HP5	400/27	N	O	5/C	1	Paolinetti,R	F
13.955	850463	0.135	2.8		15.2 x 10.2	24.00	Kodak 2415		Y	O	13/P	4	Portela,A	H

NOTE A Film light-damaged in processing. Included to show large extent of coma. Inner coma and starlike central condensation visible on all original negatives. Film push processed slightly. (Observer indicated C-type guiding as well as M. Ed.)

NOTE B (Observer's image identifier is 17-14. Ed.) "Push" processed to 800 ASA.

NOTE C Start time approximate. (Observer's image identifier is 30. Ed.) Instrument is Schmidt camera.

NOTE D (Observer's image identifier is 851213-1. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

NOTE E Instrument is Meade Schmidt camera.

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

NOTE G Coma 30 to 35 arc min., magnitude 4.5; tails 5 deg. at PA 62, 70 arc min. at PA 69. Instrument is Schmidt camera.

NOTE H (Time supplied by observer may have been start time or mid-exposure time. Ed.)

DATE: 14 DEC 1985

DATE: 14 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	
14.014	813822	5.7	B	101	30	4			0.05	B		7	4.5	N	1	Fox, J.H.	A	
14.015	813823	5.0	B	101	23.2	6	0.9	52	0.07	B		10	6.5	Y	2	de Assis Neto, V.F.		
14.042	813824	6.0	B	101					0.050	B		7		N	1	Kaufmann, R.	B	
14.06	813825	5.8	B	101	16	6			0.080	B		20	5.5	Y		Kronk, G.	C	
14.073	813826	6.0	S	101	8	4			0.080	B		11	4.3C	Y	1	Bailey, G.	D	
14.080	813827	6.0	B	101	18	1	0.47	65	0.05	B		7	5.0	Y	1	Laird, R.		
14.08	813828	4.8	M	101					0.050	R		8	5.0	Y	10	Morris, C.S.		
14.08	813829	4.8	M	101	15	7	1.75	68	0.080	B		20	5.0	Y	10	Morris, C.S.		
14.094	813830	5.5	M	101					0.050	B		10		Y	1	Ariail, R.B.		
14.108	813831	6.0	B	101	14	5			0.05	B		7	6.0C	Y	10	Chmielewski, W.		
14.125	813832	5.4	S	101	17.1	7	1.5	69	0.108	N	4	24	5.5	Y	2	Franch, J.	E	
14.187	813833	5.0	M	101	35	6	1.5	50	0.279	SC	10	100	5.0	Y	1	Kemble, L.J.	F	
14.1875	813834	5.0	M	101	12	6	2.00	72	0.05	B		7	6.0	Y	5	Cook, A.J.		
14.379	813835	5.0	M	101	15	6	0.50	60	0.030	B		8	5.5C	Y	1	Kato, T.		
14.38	813836	5.7	M	101					0.08	B		11	5.5	N	1	Mitsuma, S.		
14.396	813837	5.3		101					EX				5.5C	Y	1	Kato, T.		
14.403	813838				6	6	0.33	60	0.10	N	10	55	5.5C	Y	1	Kato, T.		
14.42	813839	5.5	M	101					0.05	B		7	5.0	Y	2	Suzuki, K.		
14.43	813840	6.0	B	101	5.2	7			0.20	N	5	36		Y	1	Curtis, D.	G	
14.44	813841	6.9	B	SAO	13	7	0.33	85	0.15	N	6	23	5	Y	3	Tanikawa, M.	H	
14.45	813842	4.5	S	101	20	7	3.0	68		EX			7.3Z	Y	2	Lovejoy, T.	I	
14.458	813843	6.2	S	101	2.0	3			0.08	R	12.5	40	5.5	Y	1	Feisheng, J.		
14.458	813844	4.5	S	101					0.05	B		10	6.0	Y	13	Garradd, G.		
14.46	813845	5.0	S	101	13.5	6	0.3	55	0.05	B		7	5.0	N	1	Kanai, K.		
14.46	813846	5.4	B	101	13.5	6	0.3	55	0.05	B		7	5.0	N	1	Kanai, K.		
14.46	813847	5.4	S	AAVSO	9	5	0.33	65	0.13	N	6.3	24	5.0	Y	1	Hayashi, A.		
14.465	813848					3			0.08	B		15	5.0	Y	13	Garradd, G.		
14.47	813849	4.8	S	101	10	7			0.07	B		10	5.0	Y	1	Yasuki, M.		
14.471	813850			101	7.4	5			0.32	N	8	150	5	Y	1	Tregaskis, T.B.	J	
14.478	813851	5.3	S	101		3			0.05	B		10		Y	1	Tregaskis, T.B.	K	
14.479	813852	5.8	B	101	8	4	0.33	55	0.108	N	4	16	7	Y	2	Turner, N.		
14.49	813853	5.5			25	7			0.12	B		20	6.0	Y	1	Washi, S.	L	
14.526	813854	5.4	M	101	5.8				0.1	N	10	56	6.5	Y	1	Ichikawa, K.	M	
14.53	813855	4.8	S	101	11	4			0.03	R		6	5.6	Y		Clark, M.L.		
14.53	813856	5.7	B	101	15	6	0.8		0.16	N	4.8	24		Y	1	Maeda, S.		
14.54	813857	5.2	S	101	9	6	0.35	110	0.41	N	4.2	86	5.6	Y		Clark, M.L.		
14.590	813858	4.6	S	101	18	5	0.58	60	0.07	B		10	2.5	Y	1	Kobayashi, J.		
14.65	813859	5	B	M	10				0.03	B		8				Zibuyev, V.A.		
14.707	813860	6.0		101	0.5	5			0.06	R	6.9	20	4.2M	Y	1	Guerrini, F.		
14.708	813861	6.0	M	101	9	4			0.09	M	11	56	5.0	Y	2	Westlund, M.		
14.7083	813862	5.2	B	101	9	7			0.05	B		10	6.5MT	Y	1	Franciosi, C.	N	
14.722	813863	6.0	S	101	20	5			0.07	B		20	5.5	Y	2	Camurri, L.		
14.73	813864	6.1	S	101	9.3	7			0.203	SC	10	44	5.1C	Y	2	Maraziti, A.		
14.730	813865	6.0	B	101					0.050	B		7	4.0CT	N	1	Ruiz, J.		
14.73	813866	5.4	S	AAVSO					0.08	R	10	29				Goldfarb, M.		
14.735	813867			101	5	6			0.208	N	5.8	48	4.0CT	N	1	Ruiz, J.		
14.74	813868	6.1	B	101					0.05	B		7	5.1C	Y	2	Maraziti, A.		
14.743	813869	4.4	S	101	15	6	1.35	72	0.050	B		7	6.4	Y	1	Meozzi, D.		
14.75	813870	5.7	B	101	9	5			0.08	B		20	4.5	Y	1	Gozzoli, E.		
14.75	813871	6.2	S	101, 100	8	6			0.05	B		10	4.3	Y	1	Zanut, S.		
14.756	813872	4.5	S	101	10.8	7	0.70	80	0.140	SN	3.6	19	6.4	Y	1	Meozzi, D.		
14.76	813873	6.0	M	101	10	4			0.15	N	8	56	5.0	Y	1	Sardini, D.		
14.764	813874	5.9	M	101	17	5	0.55	305	0.050	B		10	4.5C	Y	1	Lozano, L.	O	
14.77	813875	5.4	S	M	4	3	0.1		0.06	R	10	28				Muravyeva, Yu		
14.77	813876	5.2	B	AAVSO	15				0.08	R		8				Golubev, V.		
14.771	813877	5.8	B	101					0.05	B		7	4	Y	1	Dal Santo, M.	P	
14.78	813878	5.3	B	E		4			0.08	B						Dzhultsev, K.		
14.78	813879	5.3	B	E	15	4			0.08	B						Kolchanov, V.		
14.78	813880	5.3	B	E	15	4			0.08	B						Sladkov, Ya		
14.78	813881	5.5	B	E	13				0.08	R	10	29				Danilov, M.		
14.78	813882				14		0.2		0.08	B		8				Sedelkin, D.		
14.781	813883	6.1	M	122	5.0	4			0.114	N	8	36	4.5	N	1	Pennelli, G.		
14.783	813884	4.6	S	101	12				0.03	B		6	5.5C	Y	1	Milani, G.		
14.79	813885	4.8	S	101					0.08	B		10	5.5	Y	1	Shanklin, J.D.		
14.792	813886		M	101	21				0.05	B		10	6.0	Y	2	Melandri, F.	Q	
14.792	813887	5.8							0.03	B		8				Melandri, F.		
14.80	813888			101					0.20	R	12	40	5.5	Y	1	Shanklin, J.D.	R	
14.833	813889	5.4	B	101	5.5	6	0.16	90	0.050	B		16	5.8	Y	1	Castino, R.		
14.834	813890	5.1	S	101	12	3			0.05	B		10	4	C	N	1	Giuntoli, M.	
14.840	813891	6.4	B	101					0.05	B		7	5.0C	Y	1	Kukkonen, I.T.		
14.848	813892	6.0	B	101	10.5	3			0.08	B		20	5.5	Y	1	Gigli, P.	S	
14.850	813893	4.4	S	101	15	7		70	0.41	N	4.5	75	6.5	Y	2	Parisio, R.		
14.85	813894	4.8	B	M					0.11	B						Churymov, K.		
14.858	813895	5.7	B	101	15.2	7	0.8	70	0.050	B		10	6.0	Y	1	Rossi, L.	T	
14.858	813896	5.6		AAVSO	5	4			0.080	B		11		Y		Stomeo, E.		
14.86	813897	5.2			9				0.034	B		9				Pereira, A.	U	
14.861	813898	5.6	B	101	13	4			0.05	B		10	5.5C	Y	1	Menichetti, R.		
14.868	813899				2.0	5			0.076	R	16	139	5.0C	Y	1	Kukkonen, I.T.	V	
14.881	813900	6.0	S	101	8	3			0.080	B		20	4	C	Y	1	Boetto, M.	W
14.889	813901	6.0	M	101	12	5	0.6	40	0.07	B		16	5.0C	Y	1	Taylor, M.D.	X	
14.892	813902	5.8	S	101	12	5	0.6	40	0.07	B		16	5.0C	Y	1	Taylor, M.D.		
14.910	813903			101	2.3	7	0.05	40	0.21	N	5	43	5.0C	Y	1	Taylor, M.D.		
14.910	813904			101	14				0.050	B		10	6.0	Y	2	Villa, M.		
14.924	813905	5.9	M	101					0.030	B		8	6.0	Y	2	Villa, M.		
14.951	813906	5.5	M	101	5	7	0.25	90	0.203	N	8	128	5.0	Y	1	Hannon, J.		
14.96	813907	4.3	S	AA	28	7			0.050	B		7				Green, D.W.E.	Y	
14.969	813908	6.7	S	101	3.7	5			0.203	N	6	101	4.5	Y	1	Hudak, D.M.		
14.99	813909	4.8	S	AA	27	7	1		0.080	B		20				Green, D.W.E.	Z	

NOTE A SAO 128281 comparison star.

NOTE B Barely visible, fuzzy coma. Tail length small. [sic]

NOTE C Exceptionally clear.

NOTE D Much easier to see.

NOTE E Gas tail.

NOTE F Tail very diffuse.

NOTE G Faint stellar nucleus suspected.

NOTE H m2 (observer's symbol believed to mean "approximately equal to", Ed.) 10.5.

NOTE I Tail longer and more prominent. 3.0 deg., PA 68 tail seen through 15x80.

NOTE J Coma brighter on f. side. Crescent moon and windy. No stellar-like nucleus.

NOTE K Crescent moon, drifting cloud.

NOTE L (Observer indicated "Y" method. Ed.)



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NOTE M PA = E.  
 NOTE N Central condensation about 20".  
 NOTE O Mist.  
 NOTE P Haze.  
 NOTE Q Very clear sky.  
 NOTE R Central condensation magnitude 5.6. Thin central brighter spine.  
 NOTE S Clear, no wind. (Translated by IHW staff. Ed.)  
 NOTE T Tail length approximate. Halley visible with naked eye.  
 NOTE U (Observer gave limit as 9.0. Ed.)  
 NOTE V Coma diameter determined as an average of five transit time observations.  
 NOTE W Slight haze.  
 NOTE X Tail fanned to 78 deg. (?). Seeing Antoniadi III.  
 NOTE Y Coma diameter approximate.  
 NOTE Z Coma diameter and tail length approximate.

## SUB-NETWORK: DRAWING

Date(UT)	AO#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
14.010	830485	0.6	0.203	R	13	85	10	4.5	1	Fox, J.H	A
14.053	830486		0.203	SC	10	81			2	Lohvinenko, T.W	B
14.061	830487		0.203	SC	10	81			1	Lohvinenko, T.W	C
14.139	830488		0.108	N	4	24	20	5.5	2	Franch, J	D
14.166	830489		0.254	N	4.8	32	24	6.0	1	Troiani, D.M	E
14.189	830490	3.2	0.050	B		7	5	6.0	5	Cook, A.J	
14.44	830491	1.40	0.15	N	5.7	23	14	5	3	Tanikawa, M	F
14.527	830492	0.2	0.318	N	8	150	3			Tregaskis, T.B	G
14.7	830493	0.29	0.254	N	4.5	125, 45	72	6	1	Pesci, S	H
14.705	830494	1.6	0.090	M	11	56	10	5.0	2	Westlund, M	
14.711	830495		0.06	R	6.9	20	12	4.2	1	Guerrini, F	
14.877	830496	0.08	0.125	N	5.8	28, 40, 60	33	4.0	1	Riccabone, G	I

NOTE A Star embedded in W coma looks almost like 2nd nucleus. Its surrounding condensation is probably an artifact.  
 NOTE B Comet Halley is seen here with a nuclear magnitude of 7.9 (check star: AGK 3+0 deg. 0181) and an integrated magnitude of 5.8 (check stars: HR 69, 61 Cyg A, B). The comet on this date was seen through 16x50 binoculars and through the Celestron 6x30 finderscope and then I saw it with the naked eye. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE C The comet is seen here with a size of 233.47" and is seen with some forms of a tail with spikes forming at PA 240 and PA 16. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE D Gas tail at PA 69. The comet, now of 5.4 magnitude, possessed a somewhat parabolic coma which was some 17' in total extent. The nucleus was reported as being ill-defined and inconspicuous, being hard to extract from the strong central condensation of the coma. The gas tail was well seen, extending to the northeast for almost 1.5 deg. Scale = 10.0"/mm.  
 NOTE E Sky darkness (1-5): 5. Ray at PA 90 deg. Envelope in coma at PA 20 deg. Streamer at PA 180 deg. DC = 4.5.  
 NOTE F Feature at PA 85, length 20". Dia. and m2 (observer's symbol believed to mean "approximately equal to", Ed.) 13' and 10.5, respectively. DC 7/10. m1 = 6.9.  
 NOTE G No stellar-like nucleus. DC 5.  
 NOTE H No special feature visible in coma DC 6/7; central condensation appears not exactly in coma's center. "Water-drop" feature towards north: very faint.  
 NOTE I Areas of greater luminosity at PA 65 and at PA 103. Diameter of the nucleus is 44 arc sec. Magnifications of 80 and 144 also used. Two drawings included. Intense city lights interfered with the observation. (Translated by IHW staff. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AO#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
14.049	850464	1.583	8	0.203	1.3 x 0.9	20.00	Kodak 2415		Y	C	2/P	1	Minton, R.B	A
14.151	850465	0.135	2.8		15.2 x 10.2	7.00	Ektachrome	400/	N		5/S		Pryal, J	
14.210	850466	0.300	1.5	0.200	6.9 x 4.6	4.00	Kodak 2415		Y	S	5/P	1	Yen, B	B
14.552	850467	0.268	2.6	2	7.7 x 5.1	12.00	Ilford HP5		N	X	5/P	1	Richardson, C	C
14.720	850468	0.500	5.6		4.1 x 2.7	30.00	Kodak 103a-O		N	O	1/C	3	Cimatti, A	
14.787	850469	0.200	3.5		10.3 x 6.9	14.00	Kodak 103a-O		N	O	3/C	3	Cimatti, A	
14.795	850470	0.500	5.6		4.1 x 2.7	30.00	Kodak 103a-O		N	O	2/C	3	Cimatti, A	
14.798	850471	0.200	3.5		10.3 x 6.9	13.00	Kodak 103a-O		N	O	4/C	3	Cimatti, A	
14.810	850472	0.300	1.5	0.200	6.9 x 4.6	5.00	Kodak 2415		Y		102/P		Jager, M	D
14.842	850473	0.803	2.1	0.350	2.6 x 1.7	1.00	Kodak 103a-F		N	M	28/P	1	Guarro, J	
14.848	850474	0.803	2.1	0.350	2.6 x 1.7	8.00	Kodak 103a-F		N	M	27/P	1	Guarro, J	
14.994	850475	0.225	1.7	0.140	9.1 x 6.1	3.50	Kodak 2415		Y	S	4/P	1	Dilsizian, R	E

NOTE A Measured coma diameter = 5.7 arc min. Measured tail length = 18 arc min. (Print submitted by observer is a composite of two contiguous 10 min. Ed.)  
 NOTE B Start time approximate. (Observer's image identifier is 32. Ed.) Instrument is Schmidt camera.  
 NOTE C Instrument is Meade Schmidt camera.  
 NOTE D Coma 30 arc min.; magnitude 4.5, tails 3 deg. at PA 66, 4 deg. at PA 69, 90 arc min. at PA 73. Instrument is Schmidt camera.  
 NOTE E Exposures limited below 5 minutes to allow for stellar guiding with a minimum of "proper motion" distortion in resolution.

DATE: 15 DEC 1985

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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	
15.00	813910	4.9	B	AA						EY						Green,D.W.E		
15.00	813911	4.4	M	AA						EY						Green,D.W.E		
15.001	813912				5.5	7			0.203	R	13	110		Y	1	Phillips,J		
15.003	813913	6.0	B	101	3.2	6			0.05	B		20		Y	3	Diaz P.,E		
15.014	813914	5.5	B	101					0.050	B		10	5	C	Y	1	Robinson,R.L	
15.024	813915	5.6	S	101	13	4			0.035	B		7	6.3	Y	3	Morrison,W		
15.03	813916	4.8	S	AAVSO	11.5	5			0.050	B		10				Bortle,J.E		
15.031	813917	4.7	M	101	10.1	6	1.0	63	0.05	B		7	6.3	Y	4	DeYoung,J.A		
15.042	813918	5.7	B	101					0.080	B		20	6.0	Y		Smith,D		
15.05	813919	5.0	S	101	18	6	0.5	110	0.203	N	7	54	4.0	N	1	Harrington,P		
15.059	813920	4.8	B	78		2			0.05	B		20	5.5	Y	7	da Silva,L.A.L		
15.06	813921	5.7	B	101	16	6			0.080	B		20	5.5	Y		Kronk,G	A	
15.06	813922	6.6	B	101	10.3	7	0.22	65	0.154	N	8.0	68	5.5	Y		Kronk,G	A	
15.076	813923	5.8	S	101	4.3	3			0.08	R	11	39	4.1C	N	1	Graves,D	B	
15.076	813924	5.8	B	101	16	1	0.33	68	0.05	B		7	5.0			Laizet,R		
15.097	813925	5.7	B	101	15	6	0.17	50	0.035	B		7	5.0	Y	1	Stephan,C	C	
15.10	813926	4.3		101	45	3				EY						Morris,C.S		
15.11	813927	4.9	M	101, 54	16.5	7			0.050	R		8	6.5	Y	7	Morris,C.S		
15.135	813928	6.3	S	101	34	5			0.203	SC	10	80	4.5C	Y	1	Gronsek,J.D	D	
15.14	813929	4.9	M	101, 54	13	7	1.75	65	0.080	B		20	6.5	Y	7	Morris,C.S	E	
15.15	813930								0.256	N	4.5	45	6.5	Y	7	Morris,C.S	F	
15.167	813931	6.0	S	101	4	2			0.152	N	8	135	5	Y	1	Lewis,D.E		
15.198	813932	4.8	M	101	20	7	0.58	290	0.05	B		10	6.5	Y	4	Fabre,R	G	
15.21	813933	5.1	M	101	20	5	1.0	70	0.040	B		8	6.5	Y	1	Keen,R	H	
15.2222	813934	5.0	M	101	12	6	1.68	66	0.05	B		7	6.0	Y	2	Cook,A.J		
15.229	813935	5.9	B	101	15	4			0.050	B		10	5.0C	Y	1	Stapleton,J	I	
15.250	813936	5.9	S	101		7			0.05	B		7	5.0	Y	1	Bracken,R		
15.28	813937	4.9	M	101			1.5	50	0.05	B		10	6.5	Y	5	Bale,A		
15.37	813938	4.8	S	101	9.5	7			0.07	B		10	5.5M	Y	1	Yasuki,M		
15.375	813939	5.9	S	101	10	4			0.153	N	8.6	33	5.5	Y	1	Iwaki,Y		
15.378	813940	4.8	M	101	15	6	0.8	60	0.030	B		8	5.5M	Y	1	Kato,T		
15.379	813941	4.9		101	10					EY						Kato,T		
15.389	813942				7	6	0.5	60	0.10	N	10	55	5.5M	Y	1	Kato,T		
15.421	813943	5.8	M	101	7	5			0.442	N	4.4	221	5.8	Y	1	Glassett,W		
15.439	813944	4.6	S	101	20	5	0.58	80	0.07	B		10	3.5	Y	1	Kobayashi,J		
15.444	813945	5.9	B	101,100					0.07	B		10	5.0	Y	1	Date,M		
15.447	813946	5.5	S	101	15	3			0.050	B		12	5.0	Y	1	Batza,H	J	
15.45	813947	6.0		101		2			0.050	B		7	4.9C	Y	1	Matchett,V	K	
15.458	813948	6.2	S	101	2.0	3			0.08	R	12.5	40	5.5	Y	1	Feisheng,J		
15.465	813949	5.7	M	101	11	7	0.50	60	0.08	B		11	5.5	Y	1	Mitsuma,S	L	
15.469	813950	6.0	S	101	5.1	7			0.15	N	6	45	6.2	Y	2	Wakatsuki,M		
15.47	813951	5.5	S	AAVSO	10	5	0.50	65	0.13	N	6.3	24	5.5	Y	1	Hayashi,A		
15.47	813952	5.6	M	SAO	11	4	0.42	70	0.06	R	12	22	4.0	Y	3	Nakamura,A		
15.485	813953	5.8	M	101		7			0.05	B		7	5.5	Y	1	Mitsuma,S		
15.49	813954	5.6	S	AAVSO	10	5	0.33	65	0.07	B		10	6.0	Y	1	Hayashi,A		
15.496	813955	4.8	M	101	9	5	0.33		0.1	N	10	25	6.5	Y	1	Ichikawa,K	M	
15.521	813956	4.4	M	101	12.1	4			0.13	N	6.1	32	5.5C	Y	1	Ino,Y	N	
15.53	813957					4			0.21	N	9	31				Konstantinov,S		
15.56	813958	5.0	S	101	10	5			0.065	B		20	5.2	Y		Pearce,A		
15.563	813959	6.2	M	101	3.2	5			0.060	R	15	45	5.0M	Y	1	Purvisakis,R		
15.62	813960	5.6	B	M					0.05	B		7				Konstantinov,S		
15.636	813961	5.9	B	101					0.05	B		7	5.0CM	Y	1	Kukkonen,I.T		
15.660	813962				2.1	5			0.076	R	16	139	5.0CM	Y	1	Kukkonen,I.T	O	
15.66	813963	5.3	B	AAVSO					0.11	R						Churyumov,K		
15.705	813964	5.9	B	101	10		1.4	30	0.030	B		8	5	CM	N	2	Adamoli,G	
15.71	813965	6.2	S	101	10.3	7			0.203	SC	10	44	6.0	Y	4	Maraziti,A		
15.71	813966	5.8	B	101	7				0.045	B		7	5.5	Y	1	Spell,J	P	
15.715	813967	4.5	S	101	13	6	1.02	64	0.050	B		7	6.1	Y	1	Meozzi,D		
15.72	813968	6.0	B	101					0.05	B		7	6.0	Y	4	Maraziti,A		
15.720	813969	4.5	S	101	9.5	7	0.49	62	0.140	SN	3.6	19	6.1	Y	1	Meozzi,D		
15.730	813970	6.1	B	101					0.050	B		7	4.0C	N	1	Ruiz,J		
15.735	813971			101	5	6			0.208	N	5.8	48	4.0C	N	1	Ruiz,J		
15.740	813972	8.0	S	SAO					0.31	N	5	62				Giampaolo,G		
15.742	813973			101	14				0.030	B		8	5.0CM	Y	1	Villa,M		
15.743	813974					6			0.15	N	6.6	50	4.3C	Y		Dal Santo,M		
15.743	813975	5.9	B	101					0.05	B		7	4.3C	Y	1	Dal Santo,M	J	
15.743	813976	6.1	S	SAO					0.05	B		10				Giampaolo,G		
15.750	813977	5.8	B	101	0.4	6	0.06	297	0.28	SC	5	70	4.1	Y	1	Amoretti,M		
15.750	813978	5.6	B	101	9.2	7	0.4	63	0.050	B		10	6.0M	Y	1	Rossi,L		
15.752	813979	6.1	M	101	8	3			0.15	N	8	56	5.0	Y	1	Sardini,D		
15.752	813980								0.080	B		20	6.0		4	Zanotta,M.V	Q	
15.763	813981	5.7	B	101	5	6	0.15	90	0.050	B		16	5.5	Y	1	Castino,R	R	
15.768	813982	6.0	B	101	18	5			0.102	R	14.7	60				Medway,K	S	
15.771	813983				9	4			0.20	SC	10	111	6.0	Y	1	Bremseth,P.-J	T	
15.771	813984	6.5	S						0.050	B		10	6.0	Y	1	Bremseth,P.-J		
15.774	813985	5.5	B	101	10	4			0.05	B		10	5.5C	Y	1	Menichetti,R		
15.78	813986	6.4	B	DCS 6B		3			0.080	B		15		CM	N	1	Keijmel,P.C	
15.781	813987	6.0	M	122	5.3	3			0.114	N	8	36	4.5	N	1	Pennelli,G		
15.79	813988	5.6			9		0.20	80	0.034	B		9			1	Pereira,A	U	
15.792	813989	6.8	B	57	15	5			0.102	R	14.7	60			1	Medway,K	V	
15.792	813990	5.3	S	101	12	4			0.05	B		10	5.5	Y	1	Vanin,G		
15.793	813991	5.0	B	101	10				0.114	N	8.7	100			1	Rodriguez C.,J.A		
15.809	813992	5.9	M	101	17	5	0.55	305	0.050	B		10	4.5C	Y	1	Lozano,L		
15.830	813993	5.8	M	101					0.030	B		8	4.5C	Y	1	Villa,M		
15.832	813994	6.1	B	101	10.0	2			0.08	B		20	5.5	Y	1	Gigli,P	W	
15.833	813995	5.2	M	101	9	6	0.5	64	0.080	B		10	7.0	Y	1	Mikuz,B		
15.836	813996	4.1	S	101						EY					2	Milani,G		
15.837	813997				15	4	0.33	70	0.08	B		20	6.3	Y	2	Mikuz,B		
15.840	813998	5.3	M	101	10	7	0.2	64	0.050	B		7	7.0	Y	1	Mikuz,B		
15.851	813999	5.8	B	101		4			0.080	B		20	3.5C	Y	1	Dionisi,M		
15.860	814000	4.3	S	101						EY					5	Haver,R		
15.865	814001	5.8	M	101	15				0.05	B		10	5.5	Y	1	Melandri,F	X	
15.865	814002	4.5	S	101	14.0	6	1.6	65	0.08	B		15	6.2	Y	5	Haver,R		
15.8777	814003	5.8	B	101	8	7			0.05	B		10	5.8CTM	Y	2	Franciosi,C		
15.880	814004	4.4	S	101	15.0	5	1.6	65	0.05	B		7	6.2	Y	5	Haver,R		
15.965	814005			101		3			0.05	B		7	5.0					

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NOTE A Exceptionally clear.  
 NOTE B Urban city lights.  
 NOTE C Tail averted vision.  
 NOTE D Exc. see.  
 NOTE E Tail very faint.  
 NOTE F Bulge in comet's coma toward the north.  
 NOTE G (PA value appears to be measured incorrectly. Ed.)  
 NOTE H Modified Sidwick method used.  
 NOTE I Near horizon, some high clouds.  
 NOTE J Haze.  
 NOTE K Cloud.  
 NOTE L 9.5.  
 NOTE M PA = E.  
 NOTE N Difficult to observe. Lines are too bright. [sic] Every day is a hazy day. (Translated by IHW staff. Ed.)  
 NOTE O Coma diameter determined as an average of five transit time observations.  
 NOTE P Faint aurora.  
 NOTE Q Narrow and straight tail with central spine at PA 65 deg. Faint broad tail, probably bent toward PA greater than 15 deg.  
 NOTE R Moon.  
 NOTE S Some drifting thin clouds interfered. (Observer gave limit as 11.5. Ed.)  
 NOTE T Inner coma fainter. (Instrument used for this note not specified. Ed.)  
 NOTE U (Observer gave limit as 9.4. Ed.)  
 NOTE V (Observer gave limit as 12.5. Ed.)  
 NOTE W Looks less luminous and slightly smaller. The shape is hardly oval, and is instead more round than previously. (Translated by IHW staff. Ed.)  
 NOTE X Veiled sky.  
 NOTE Y Gas tail.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
15.001	830497	0.22	0.203	R	13	110				Phillips,J	A
15.017	830498	0.67	0.090	M	11	50	20	4.5	1	Arpin,P	
15.018	830499	0.3	0.200	N	8	81,130	10	5	1	Robinson,R.L	B
15.215	830500			N	4.5	50,150	20	6.5	3	Fabre,R	C
15.224	830501	3.1	0.050	B			15	6.0	2	Cook,A.J	
15.740	830502	0.58	0.150	N	6.6	100	4	4.5	1	Dal Santo,M	
15.762	830503	0.21	0.114	SN	8.7	25,100	15	5.0	1	Abbadessa,M	D
15.788	830504	0.23	0.20	SC	10	111	30	6	3	Bremseth,P.-J	E
15.806	830505	0.08	0.125	N	5.8	28, 40, 60	42	4.0	1	Riccabone,G	F
15.878	830506	0.04	0.83	R	19.7	900	10	5.0	3	Soc. Astro. de France	G
15.974	830507	0.75	0.318	N	8	40, 75,160	65	5.5	1	Hathaway,W	

NOTE A Comet found quickly by scanning with 7x50 binoculars. Getting larger and brighter. Central condensation of comet passed just south of star in drawing at 0010 UT. City lights. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE B A star was traversed by the comet head. Unfortunately, I did not observe it while it passed the central condensation. During a moment of very stable seeing a thin, faint line appeared in the tail just behind the coma. It was not seen again.  
 NOTE C Note that the semi latus rectums are compressed (in) this observation as compared to 4 Dec. The tail has a brighter area (spike) down its center. Scale = 10"/mm  
 NOTE D City lights interfered with the observation.  
 NOTE E Brightest structure at PA 225, line structure at PA 170, diffuse structures at PA 45 and at PA 90. Different structures in the coma was visible, B (brightest). The small central condensation and the inner coma was weaker than before. The whole coma had a smooth surface brightness. Diameter (central condensation) 7 arc sec. At 1927 UT, the central condensation occulted "nearly exactly" star A. Star A mag. about 10. I could not see the centr. con. at 1927 UT when the star was at the center! No drop in brightness was observed. The star only turned half a magnitude weaker (perhaps little more). [sic]  
 NOTE F Nucleus diameter, average of three measurements, is 39 arc sec. Magnifications of 80 and 144 also used. Two drawings included. Intense city lights interfered with the observation. (Translated by IHW staff. Ed.)  
 NOTE G Jet at PA 32, 21" long; jet at PA 155, 30" long; jet at PA 195, 25" long; jet at PA 255, 18" long; jet at PA 312, 23" long; jet at PA 341, 24" long. Drawing made by Alain Perez.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
15.037	850476	0.135	2.8		15.2 x 10.2	7.00	Kodak Tri-X	400/	N		3/P	2	Tatum,R	
15.069	850477	0.200	4.5		10.3 x 6.9	10.00	Ektachr.400		N	T	17/S	1	Priester,D.C	A
15.111	850478	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	240/P	1	Sabia,J.D	
15.117	850479	0.305	1.5	0.203	6.8 x 4.5	2.00	Kodak 2415		Y	X	241/P	1	Sabia,J.D	
15.131	850480	2.306	5	0.45	0.9 x 0.6	28.00	Kodak Tri-X		N	M	11/S	1	Webb,R	B
15.147	850481	0.200	3.5		10.3 x 6.9	30.00	Kodak 2415		N	T	1/P		Levy,A	C
15.195	850482	0.200	3.5		10.3 x 6.9	30.00	Kodak 2415		N	T	2/P	1	Levy,A	C
15.210	850483	0.300	1.5	0.200	6.9 x 4.6	4.00	Kodak 2415		Y	S	6/P	1	Yen,B	D
15.226	850484	0.200	3.5		10.3 x 6.9	20.00	Ektachr. Pro	200/	N	T	000/P	1	Levy,A	
15.701	850485	0.950	4.7	0.20	2.2 x 1.4	5.00	Kodak 2415		Y		7/P	1	Conrad,R	E
15.716	850486	0.200	4		10.3 x 6.9	11.00	Kodak 103a-O		N	O	1/C	3	Cimatti,A	F
15.725	850487	0.500	5.6		4.1 x 2.7	30.00	Kodak 103a-O		N	O	1/C	3	Cimatti,A	F
15.725	850488	0.200	4		10.3 x 6.9	15.00	Kodak 103a-O		N	O	2/C	3	Cimatti,A	F
15.745	850489	0.135	3.5		15.2 x 10.2	15.00	Kodak 103a-O		N	O	3/C	3	Cimatti,A	F
15.753	850490	0.500	5.6		4.1 x 2.7	30.00	Kodak 103a-O		N	O	2/C	3	Cimatti,A	F
15.764	850491	0.200	4		10.3 x 6.9	20.00	Kodak 103a-O		N	O	4/C	3	Cimatti,A	
15.772	850492	1.905	5.4	0.350	1.1 x 0.7	40.00	Fujichrome	400/	N	O	6/T	2	Genebriera,J	G
15.785	850493	0.500	5.6		4.1 x 2.7	40.00	Kodak 103a-O		N	O	3/C	3	Cimatti,A	
15.791	850494	1.400	5.6	0.260	1.5 x 1.0	25.00	Ilford HP5	400/27	N	O	6/C	1	Paolinetti,R	H
15.798	850495	0.200	5.6		10.3 x 6.9	30.00	Kodak 103a-O		N	O	5/C	3	Cimatti,A	
15.806	850496	1.400	5.6	0.260	1.5 x 1.0	15.00	Ilford HP5	400/27	N	O	7/C	1	Paolinetti,R	H
15.808	850497	1.905	5.4	0.350	1.1 x 0.7	40.00	Kodak 2415		Y	O	7/T	2	Genebriera,J	
15.815	850498	1.400	5.6	0.260	1.5 x 1.0	10.00	Ilford HP5	400/27	N	O	8/C	1	Paolinetti,R	H
15.818	850499	1.000	5	0.200	2.1 x 1.4	15.00	3M 1000	1000/	N	X	4/S	1	Vanin,G	
15.819	850500	0.600	1.7	0.350	3.4 x 2.3	15.00	Ilford FP4		N	O	1/T	1	Battaini,P	I
15.820	850501	0.500	5.6		4.1 x 2.7	40.00	Kodak 103a-O		N	O	4/C	3	Cimatti,A	
15.822	850502	1.400	5.6	0.260	1.5 x 1.0	6.00	Ilford HP5	400/27	N	O	9/C	1	Paolinetti,R	J
15.823	850503	0.135	3.5		15.2 x 10.2	20.00	Kodak 103a-O		N	O	6/C	3	Cimatti,A	
15.825	850504	1.400	5.6	0.260	1.5 x 1.0	3.00	Ilford HP5	400/27	N	O	10/C	1	Paolinetti,R	K
15.826	850505	1.400	5.6	0.260	1.5 x 1.0	0.50	Ilford HP5	400/27	N	O	11/C	1	Paolinetti,R	K
15.833	850506	0.300	1.5	0.200	6.9 x 4.6	8.00	Fujichrome	400/	N	O	8/T	2	Genebriera,J	G
15.838	850507	0.135	3.5		15.2 x 10.2	15.00	Kodak 103a-O		N	O	7/C	3	Cimatti,A	
15.843	850508	0.300	1.5	0.200	6.9 x 4.6	8.00	Kodak 2415		Y	O	9/T	2	Genebriera,J	
15.874	850509	0.760	4	0.19	2.7 x 1.8	8.00	Ilford HP5	400/27	N	S	1/T	1	Mikuz,H	
15.884	850510	0.760	4	0.19	2.7 x 1.8	9.00	Ilford HP5	400/27	N	S	2/T	1	Mikuz,H	
15.894	850511	0.760	4	0.19	2.7 x 1.8	5.00	Ilford HP5	400/27	N	S	3/T	1	Mikuz,H	

NOTE A Push processed to 800 ASA.  
 NOTE B Intermittent high cirrus interference. Inner coma and starlike central condensation visible on all original negatives. Film push processed slightly. (Observer indicated C-type guiding as well as M. Ed.)  
 NOTE C (Print submitted by observer is a composite of 1 and 2 showing two comet images. Observer's image identifier is the equivalent Roman numeral. Ed.)

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NOTE D Start time approximate. (Observer's image identifier is 5. Ed.) Instrument is Schmidt camera.  
NOTE E City lights interfered with the observation; Vienna, from room!  
NOTE F Moonlight interfered with the observation.  
NOTE G (Observer's report form is ambiguous. The film may have been hyper-sensitized in forming gas (10% H2, 90% N2) at 48 C for 22 hours. Ed.)  
NOTE H (Observer's image identifier is followed by suffix A. Ed.)  
NOTE I Instrument is Schmidt camera.  
NOTE J Image shows star occultation; see images 10 and 11 on this date. (Observer's image identifier is followed by suffix A. Ed.)  
NOTE K With star occultation; see that negative number 9 dated 15 December 1985. [sic] (Observer's image identifier is followed by suffix A. Ed.)

SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
15.109	870104	600G-O	CL	0.135	1.9		18.00	Kodak Tri-X	400/27	N	C	521/S	1	Buchanan,W.T	A

NOTE A (Observer's image identifier is E-115-21A. Ed.) Halley visible.

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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	
16.000	814011				7		0.20	75	0.15	R	5	31	5.7M	Y	3	Morrison, W		
16.026	814012	4.7	B	101		1			0.05	B		20	4.0	Y	1	da Silva, L.A.L		
16.067	814013	4.5	B	101	4	3			0.06	R	12	56	5.3	Y	1	Onofre D., D		
16.083	814014	5.6	B	101					0.080	B		20	5.8	Y		Smith, D		
16.09	814015	4.5	S	AA	25	5			0.050	B		7				Green, D.W.E	A	
16.09	814016	4.6	S	AA	25	5			0.080	B		20				Green, D.W.E	A	
16.104	814017	5.5	M	101		7	0.40	55	0.050	B		10	6.2	Y	1	Ariail, R.B		
16.104	814018	6.0	B	101		5			0.08	B		11	4.5	Y	1	Gorski, L		
16.104	814019	5.9	B	101	20	5			0.050	B		10	5.0C	Y	1	Stapleton, J	B	
16.12	814020	4.8	S	101,100	20	6	0.50	65	0.080	B		11	5.0	Y	1	Spratt, C.E		
16.125	814021	6.3	S		9	5			0.080	B		11	8	N	3	Pryal, J	C	
16.153	814022	5.8	M	101			0.50	90	0.050	B		10	5.4	Y	1	Smith, A	D	
16.2104	814023	5.3	S	DCS	18	5	0.22	75	0.080	B		20	5.2	Y	3	Machholz, D	E	
16.351	814024	5.2	M	101	20	6			0.035	B		7	4	Y	1	Watanabe, H		
16.354	814025	5.2	M	101	25	6			0.035	B		7	4	Y	1	Watanabe, A		
16.380	814026	5.1	M	101	12	6			0.030	B		8	4.5M	Y	1	Kato, T		
16.389	814027				3.5	6	0.08	60	0.10	N	10	55	4.5M	Y	1	Kato, T		
16.39	814028	5.8	B	E	11	4			0.21	N		80				Knyazyuk, N		
16.458	814029	6.1	S	101	2.3	3			0.05	R	16	20	4.5M	Y	1	Feisheng, J		
16.479	814030	5.8	B	101,100					0.07	B		10	4.5	Y	1	Date, M		
16.48	814031	5.4	M	101		5			0.05	B		7	4.5M	Y	2	Suzuki, K		
16.493	814032	5.6	B	101	30	5			0.05	B		7	5.0C	Y	1	Hayashi, H		
16.542	814033	5.8	B	101					0.05	B		7	4.5C	Y	1	Hasegawa, T		
16.545	814034	5.3	M	101	6.8			80	0.1	N	10	25	5.0	Y	1	Ichikawa, K		
16.55	814035	5.8	B	M					0.05	B		7				Konstantinov, S		
16.563	814036	6.1	M	101					0.060	R	15	45	5.0M	Y	1	Purvinskis, R		
16.59	814037	6	B	M					0.05	B		7				Ponomarev, E		
16.61	814038	5.9	B	AAVSO					0.20	R	15					Churyumov, K		
16.64	814039	5.9	B	M	5				0.05	R		20				Nesterov, Yu		
16.68	814040	5.7	B	101	8	6			0.045	B		7	5.5	Y	1	Spell, J		
16.688	814041	5.8	M	AAVSO	7	7	0.8	110	0.063	R	13.3	52				Kosa-Kiss, A	F	
16.715	814042	5.6	M	101	4	4			0.08	B		10	4.5M	N	1	Rapavy, P	G	
16.726	814043	7.4	S	101	3.5	5			0.090	R	14	46	4.6	Y	1	Hirth, G	H	
16.730	814044	6.0	B	101					0.050	B		7	4.0C	N	1	Ruiz, J		
16.735	814045			101	6				0.208	N	5.8	48	4.0C	N	1	Ruiz, J		
16.736	814046	5.7	S	101		6			0.114	N	7.9	45	5.0C	N	1	Bernardis, A		
16.742	814047	5.9	M	101	10	3			0.15	N	8	56	5.0M	Y	1	Sardini, D		
16.743	814048	5.5	M	101	15	6	0.3	67	0.05	B		12	4	Y	1	Tanti, T	I	
16.750	814049	5.4	M	101	12	6			0.089	R	5.5	18	5.4M	N	1	Ventura, F	J	
16.7527	814050	5.6	B	101	6	7			0.05	B		10	5.0CM	Y	2	Franciosi, C	K	
16.767	814051	5.5	S	101	3.6	3	0.2	28	0.07	B		16	4.5CM	Y	1	Taylor, M.D	L	
16.770	814052	5.7	B	101	5	6	0.15	90	0.050	B		16	5.0	Y	1	Castino, R	M	
16.774	814053	5.5	B	101	10	3			0.05	B		10	5	CM	N	1	Menichetti, R	
16.781	814054	5.9	B	101		4			0.05	B		10		M	Y	2	Frosina, A	N
16.79	814055	5.5			9				0.034	B		9			1	Pereira, A	O	
16.79	814056	5.3	B	AAVSO					0.20	R	15					Churyumov, K		
16.79	814057	4.8	B	AAVSO	15	5	0.7	66	0.11	R	7	20	5.0CM	Y	3	Churyumov, K		
16.792	814058	5.5	M	101	11	3			0.06	R	5.7	36	4.5	N	1	Cardiel, N	P	
16.799	814059	5.9	M	101	17	5			0.050	B		10	4.0M	N	1	Lozano, L	Q	
16.802	814060	6.0	M	122	5.4	3			0.114	N	8	36	4.5	N	1	Pennelli, G		
16.806	814061	5.4	S	101				30	0.08	B		11	4	N	1	Gainsford, M.J	R	
16.816	814062	5.7	B	101	0.4	6	0.06	297	0.28	SC	5	70	4.1	Y	1	Amoretti, M		
16.833	814063	5.5	B	4A					0.050	B		7	5.5	Y	1	van der Mey, L		
16.844	814064	5.7	S	101	12				0.05	B		10	4.0C	Y	6	Melandri, F	S	
16.861	814065	5.7	B	101		4			0.080	B		20	3.5C	Y	1	Dionisi, M		
16.910	814066	5.2	M	100,101	10	8	0.25	64	0.080	B		10	7.0	Y	1	Mikuz, H		
16.95	814067	4.4	S	AA	25	6			0.050	B		7				Green, D.W.E	A	
16.990	814068	5.6	S	101	7	6	0.35	50	0.080	R	4.4	19	3.0	N	1	Jacobs, T		
16.990	814069	5.8	B	101		6			0.08	B		11	4.3	Y	2	Gorski, L		

NOTE A Coma diameter approximate.

NOTE B Moon out, clear.

NOTE C Saog poor. [sic]

NOTE D Faint tail barely seen.

NOTE E Comet barely visible to the naked eye.

NOTE F Naked eye!

NOTE G Coma ellipt.

NOTE H Moon, clouds.

NOTE I Seeing good, transparency excellent. Moon.

NOTE J Coma decidedly oval. The central condensation has a pear-like shape with the wide end in the west and the narrow part at the eastern end. Coma diameter uncertain.

NOTE K Veiled sky. [sic]

NOTE L Haze. Antoniadis IV. Moon.

NOTE M Moon.

NOTE N Limit = 9.5. h0 approximately 60 deg.

NOTE O (Observer gave limit as 9.0. Ed.)

NOTE P Moon 4 days.

NOTE Q Crescent moon.

NOTE R Patchy cloud. Coma dia. = ?. DC = ?. Tail length = ?. PA uncertain.

NOTE S Veiled sky.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
16.021	830508		0.203	SC	10	70		6.5		Williams, D.J	A
16.032	830509	0.4	0.203	N	6	61,116	10	5.5	1	Williams, J	B
16.052	830510		0.203	SC	10	81			2	Lohvinenko, T.W	C
16.688	830511	0.89	0.063	R	13.3	52		6.3		Kosa-Kiss, A	D
16.768	830512	0.08	0.125	N	5.8	28, 40, 60	39	4.5	1	Riccabone, G	E
16.773	830513	0.23	0.114	SN	8.7	25,100	15	5.0	1	Abbadessa, M	F
16.792	830514	1.2	0.06	R	5.7	20	30	5.0	3	Cardiel, N	
16.950	830515	0.31	0.114	N	8	45	55	4.9	1	Mac Kenzie, G	
16.981	830516	0.67	0.156	N	8	52	116	5.7	2	Cuthill, D.D	G

NOTE A Very clear. Halley was easily spotted in the finderscope of the 8". The center of Halley is still very compact and bright. Halley must have swept between us and a star, because just east of the nucleus was a bright point. After checking the AAVSO chart, the plotted path for Halley does indicate that a star would be very near Halley. If you move the scope just enough so that the comet nucleus is out of the field and if you use averted vision, a faint tail is visible. (Duration not indicated. Time of observation is start time. Ed.)

NOTE B Coma brightens toward central condensation. No detail. There was a star embedded in the coma. It was brighter than the

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central condensation. Moonlight, city lights interfered with the observation.

NOTE C Today we can see that the nuclear magnitude is 7.7 (check star: AGK 3+0 deg. 0181) and an integrated magnitude of 5.8 (check star: HR 69). The diameter of the comet is 243.62". The comet is very noticeable even with the unaided eye out here away from the city lights. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Feature at PA 110 deg. Schematic drawing. (Duration not indicated. Time of observation is end time. Ed.)

NOTE E One area of distinctly greater luminosity at PA 265. Nucleus diameter 59 arc sec. Magnification of 80 and 144 also used. Two drawings included. Moonlight and intense city lights interfered with the observation. (Translated by INW staff. Ed.)

NOTE F City lights and moonlight interfered with the observation.

NOTE G The bands of the inner tail were visible by sweeping the scope perpendicular to the lengths of the bands with a blue filter. (N & S movement). Coma now appears distinctly asymmetrical. Also a very distinct blue-green color is evident. Medium blue, red, and violet filters used. Synchronic bands [sic] at PA 40, 68, and 80.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
16.736	850512	1.820	5.2	0.350	1.1 x 0.8	20.00	Kodak 103a-O		N	O	1/C	2	Cimatti,A	A
16.828	850513	0.420	1.7	0.250	4.9 x 3.3	15.00	Kodak 2415		Y	S	3/P	1	Bruhlin,W	B
16.867	850514	0.760	4	0.19	2.7 x 1.8	20.00	Ilford HP5	400/27	N	O	1/T	1	Mikuz,H	
16.885	850515	0.760	4	0.19	2.7 x 1.8	15.00	Ilford HP5	400/27	N	O	2/T	1	Mikuz,H	
16.895	850516	0.760	4	0.19	2.7 x 1.8	10.00	Ilford HP5	400/27	N	O	3/T	1	Mikuz,H	

NOTE A Moonlight interfered with the observation.

NOTE B (Observer's image identifier is III. Ed.)

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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
17.000	814070	5.4	B	101	25	4			0.06	R	8.3	30	4.5	N	1	Fox, J.H	A
17.00	814071					4			0.20	N	5	35				Tsvetkov, L	
17.025	814072	5.4	S	101	17	1			0.05	B		10	4.5C	N	3	Hause, R.R	B
17.063	814073	5.7	B	101					0.080	B		20	5.5M	Y		Smith, D	
17.09	814074	4.9	M	100, 101		6	1.58	58	0.080	B		20	4.5M	Y	10	Morris, C.S	
17.1160	814075	4.9	S	DCS	14	4	0.30	76	0.050	R	12.0	13	5.2		3	Machholz, D	C
17.12	814076	5.8	B	101	11	6			0.080	B		20	4.0	Y		Kronk, G	D
17.1208	814077	5.2	S	DCS	16	5	0.33	76	0.080	B		20	5.2		3	Machholz, D	C
17.132	814078	5.8	B	101	15	4			0.050	B		10	4.5C	Y	1	Stapleton, J	E
17.167	814079	5.5	B	101	15	7			0.20	SC	6	30	4.5	Y	2	Saxon, V.P	F
17.208	814080	6.1	S		10	5	0.02		0.080	B		11		Y	3	Pryal, J	G
17.2639	814081	5.3	M	101	10	6	1.83	65	0.05	B		7	6.0	Y	2	Cook, A.J	
17.41	814082	5.1	S	SAO	15	4			0.05	B		7	5.5	Y	1	Ashdown, M	H
17.42	814083	5.6	S	101	9.7	7	0.4	65	0.05	B		7	5.0M	N	1	Kanai, K	
17.42	814084	5.6	B	101	9.7	7	0.4	65	0.05	B		7	5.0M	N	1	Kanai, K	
17.42	814085	5.5	M	100, 101	9	7	0.50	60	0.08	B		11	5	Y	1	Mitsuma, S	I
17.424	814086	5.4	S	101	19	5	0.33	90	0.07	B		10	3.5	Y	1	Kobayashi, J	
17.43	814087	5.4	M	101					0.05	B		7	5.5M	Y	2	Suzuki, K	J
17.43	814088			101	3.5	5	1.0		0.31	N	5.7	147	5.5M	Y	2	Suzuki, K	
17.44	814089	4.4	S	101					0.05	B		10	5	Y	1	Seargent, D	
17.445	814090	5.6	M	100, 101		8			0.05	B		7	5	Y	1	Mitsuma, S	
17.458	814091	6.1	S	101	2.3	3			0.05	R	16	20	4.5M	Y	1	Feisheng, J	
17.465	814092	5.4	S	101		7			0.05	B		10	5.0	Y	1	Williams, P.F	
17.470	814093				5	9			0.15	N	8	100	5.0	Y	1	Williams, P.F	
17.475	814094	5.6	B	101		6			0.050	B		7		Y	3	Bembrick, C	
17.48	814095	5.5	S	AAVSO	8	5	0	65	0.13	N	6.3	24	5.5M	Y	1	Hayashi, A	
17.48	814096	5.5	B	M	5	6	3	62	0.05	B		7		Y	1	Guryanov, S	K
17.482	814097	5.7	M	101	4.7	6			0.12	N	6	36	3.0C	Y	1	Kishi, A	
17.49	814098	5.6	S	AAVSO	8	4			0.07	B		10	5.0M	Y	1	Hayashi, A	
17.49	814099	6.2	B	M					0.05	B		7		Y	1	Sikoru, L	
17.500	814100	5.0	S	101	12	3			0.05	B		10		Y	1	Tregaskis, T.B	L
17.51	814101	4.9	S	101	8	7			0.08	B		11	3.5	N	1	Momose, M	
17.556	814102	4.6	M	101	20	4	1	80	0.05	B		20	5.0	Y	7	Ichikawa, K	
17.56	814103	5.4	B	AAVSO					0.20	R						Churyumov, K	
17.57	814104	5.0	B	AAVSO					0.11	R						Churyumov, K	M
17.59	814105	5.6	B	AAVSO					0.20	R						Churyumov, K	
17.60	814106	6.8	B	E	7	4			0.05	B		7				Mozmil, V	
17.60	814107	5.0	S	E	18				0.05	R	8	20				Zagaynov, V.A	
17.62	814108	5.6	B	E	17				0.03	B		8				Zagaynov, V.A	
17.62	814109	5.8	B	E	18				0.03	B		8				Zagaynov, V.A	
17.64	814110	4.8	B	AAVSO	25	6	1.5	66	0.11	R						Churyumov, K	
17.71	814111	5.2	B	E	17				0.03	B		8				Zagaynov, V.A	
17.715	814112	5.7	B	M	4				0.05	B		7				Nesterov, Yu	N
17.733	814113	5.3	S	101	3.5	4			0.063	R	13.3	34	3.0C	N	1	Skjaeraasen, O	O
17.743	814114	5.1	M	101		6			0.05	B		12	4	Y	1	Tanti, T	P
17.743	814115	7.2	S	101	3.6	5			0.090	R	14	46	4.3	Y	1	Hirth, G	Q
17.750	814116	5.2	M	101		6			0.089	R	5.5	18	5.0M	N	1	Ventura, F	
17.802	814117	5.2	B	101	5.3	5			0.080	R	15	39	4.3MC	Y	1	Szulc, M	
17.833	814118	6.5	B	57	16	5			0.102	R	14.7	60		Y	1	Medway, K	R
17.837	814119	5.6	B	101		5			0.063	R	13.3	21	4.5M	N	1	Pilski, A	
17.910	814120	5.9	M	101, 100	17	5			0.200	N	6	40	5.0M	Y	2	Lozano, L	
17.97	814121	4.4	S	AA	16	4			0.080	B		20				Green, D.W.E	S
17.98	814122	4.3	S	AA	18	5			0.050	B		7				Green, D.W.E	S

NOTE A SAO 127993 comparison star.

NOTE B Hazy sky.

NOTE C 32% moon 21 degrees away.

NOTE D Mostly cloudy.

NOTE E Bright moon.

NOTE F City lights and moon.

NOTE G Elongated coma. (Observer gave limit as 10. Ed.)

NOTE H Some moonlight.

NOTE I 9.1.

NOTE J Meter: coma diameter is P1 + P2.

NOTE K Four fragments in the head. (0.15 m Newtonian, 96x.)

NOTE L Scattered cloud, crescent moon. (Observer gave limit as approximately 8.5. Ed.)

NOTE M The cone emanating the matter to the south, resembling that of Dec. 12.60.

NOTE N Granulation in the central condensation.

NOTE O Severe light pollution made the background sky awfully bright, and in addition, thin clouds made it difficult/impossible to

see the outer parts of the coma.

NOTE P Seeing good, transparency excellent. Moon.

NOTE Q Moon.

NOTE R (Observer gave limit as 12.0. Ed.)

NOTE S Coma diameter approximate.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
17.003	830517	0.6	0.203	R	13	85	10	4.5	1	Fox, J.H	A
17.010	830518	0.203	SC	10	70			6.0		Williams, D.J	B
17.139	830519	0.15	0.23	R	12	122,250,600			1	O'Meara, S.J	C
17.143	830520	0.41	0.20	N	6	30, 48	10	5	1	Wilson, A.M	D
17.264	830521	3	0.050	B		7	15	6.0	2	Cook, A.J	
17.735	830522	0.46	0.063	R	13.3	34, 53	17	3.5	1	Skjaeraasen, O	E

NOTE A A bright knot in coma at PA 290. Seeing is so bad that a sharp focus is impossible. Separation and PA about the same as "star" noted 12/14/85.

NOTE B The moonlight has started interfering with observing Halley. The comet is still easily visible through the 8" finderscope, but the tail is washed out in the moonlight. (Duration not indicated. Time of observation is start time. Ed.)

NOTE C (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Y and V filters used.

NOTE E Lumicon Deep Sky filter used. Thin clouds made the comet's coma (no tail was seen) invisible every now and then, but it reappeared after a few minutes, until 17.741 UT when it disappeared completely. Due to those clouds, the visibility of the comet varied and I had to take several pauses. Difficult to distinguish between the rather bright background sky and the outer parts of the coma. Very much light pollution, almost no wind, bad seeing. Moonlight interfered (though not as much as the light pollution). Circular smooth coma, with brightness gradually decreasing outwards from the innermost tiny central condensation. Total field: 48'.

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## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
17.122	850517	2.306	5	0.45	0.9 x 0.6	30.00	Kodak Tri-X		N	M	12/S	1	Webb,R	A
17.249	850518	0.180	2.8		11.4 x 7.6	5.00	3M 1000	1000/	N	S	7/P	2	Cook,A.J	
17.252	850519	0.180	2.8		11.4 x 7.6	2.00	3M 1000	1000/	N	S	8/P	2	Cook,A.J	
17.257	850520	0.180	2.8		11.4 x 7.6	10.00	3M 1000	1000/	N	S	9/P	2	Cook,A.J	
17.319	850521	0.500	5		4.1 x 2.7	10.00	Ilford XPl	400/	N	S	1/P	1	Sanford,J	B

NOTE A Moonlight a problem; slight interference by 5-day old moon. Inner coma and starlike central condensation visible on all original negatives. Film pushed processed slightly. (Observer indicated C-type guiding as well as M. Ed.)

NOTE B Very windy, S = 3-5 sec.

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
17.162	870105	-O	CL	0.135	1.9		25.00	Kodak 103a-F		N		602/S	2	Buchanan,W.T	A

NOTE A Error in RA guiding. Halley invisible. (Note probably refers to observing conditions. Observer's image identifier is E-116-02. Ed.)



DATE: 18 DEC 1985

DATE: 18 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
18.000	814123	4.4	B	78		0			0.05	B		20	3.5	Y	1	da Silva,L.A.L	A
18.00	814124	4.7	S	AAVSO	10.5	5			0.050	B		10				Bortle,J.E	
18.00	814125	5.3	B	AAVSO	12	5			0.20	N	5	35				Tsvetkov,L	
18.028	814126	6.1	M	101	4.1	4			0.114	N	8	45	4.1	Y	1	Mac Kenzie,G	B
18.031	814127	5.4	B	101	20	4			0.06	R	8.3	30	3.7M	N	1	Fox,J.H	C
18.042	814128	5.5	B	101					0.080	B		20	5.8M	Y		Smith,D	
18.08	814129	4.9	M	101		6	1.25	60	0.080	B		20	5.0M	Y	10	Morris,C.S	
18.104	814130	5.6	B	101		4			0.08	B		11	4.0	Y	1	Gorski,L	
18.12	814131	4.5	S	101,100	20	5	0.25	65	0.080	B		11	4.5	Y	1	Spratt,C.E	D
18.125	814132	6.3	S		7	3			0.080	B		11		Y	3	Pryal,J	E
18.13	814133	5.5	B	101	11	8			0.080	B		20	4.0	Y		Kronk,G	F
18.22	814134	5.0	M	100			1.2	50	0.05	B		10	6 M	Y	2	Hale,A	G
18.367	814135	5.0	M	101	12	6			0.030	B		8	4.5MT	Y	1	Kato,T	
18.385	814136	5	M	101	20	6			0.035	B		7		Y	1	Watanabe,H	
18.389	814137				4.5	6	0.10	60	0.10	N	10	55	4.5M	Y	1	Kato,T	
18.389	814138	5.0	M	101	20	6			0.035	B		7		Y	1	Watanabe,A	
18.41	814139	5.1	S	SAO	15	4			0.05	B		7	5.5	Y	1	Ashdown,M	H
18.415	814140	5.5	B	101	25	6			0.05	B		7	4.5M	Y	1	Hayashi,H	
18.43	814141	5.5	M	100	10	8			0.05	B		7	4.5M	Y	1	Mitsuma,S	
18.440	814142	5.7	M	101	5.5	6			0.12	N	6	36	3.0MC	Y	1	Kishi,A	
18.44	814143	5.4	M	100	9.5	8	0.42	65	0.08	B		11	4.5M	Y	1	Mitsuma,S	I
18.47	814144	4.8	S	101	9	7			0.07	B		10	4.5M	Y	1	Yasuki,M	
18.472	814145	5.2	S	101	12	3			0.05	B		10		Y	1	Tregaskis,T.B	J
18.483	814146	5.8	B	101,100					0.07	B		10	3.7M	Y	1	Date,M	
18.49	814147	5.6	S	AAVSO	8	4			0.07	B		10	5.0M	Y	1	Hayashi,A	
18.49	814148	5.4	M	101		5	2.5	260	0.050	B		7	CM	Y	1	Matchett,V	K
18.50	814149	5.7	B	M		5	2	60	0.05	B		7				Guryanov,S	
18.51	814150	5.4	S	AAVSO	8	5			0.13	N	6.3	24	5.0M	Y	1	Hayashi,A	
18.57	814151	5.7	B	M					0.05	B		7				Konstantinov,S	
18.65	814152	5.7	B	M	12	2			0.07	N	8	33				Shitikov,A	
18.65	814153	5.7	B	M	4				0.05	B		7				Nestorov,Yu	L
18.691	814154	5.5	B	100	10	5			0.063	R	13.3	21	4.5M	Y	1	Pilski,A	
18.698	814155	5.5	M	101					0.060	R	4.5	10	5.0M	Y	1	Chodorowski,F	
18.70	814156	5.0	B	AAVSO	15	6			0.11	R	7					Churyumov,K	
18.706	814157	5.7	B	101					0.050	B		10	5.5	Y	1	Trebacz,A	
18.708	814158	6.4	M	100	15	5			0.150	N	5.3	45	5.5	Y	1	Wikholm,L	
18.73	814159	5.0	S	101					0.08	B		20	3.0	Y	1	Shanklin,J.D	
18.750	814160	6.0	M	100,101	25	4			0.030	B		8	5.5C	Y	1	Honko,M	
18.750	814161	6.1	M	100,101	25	4			0.030	B		8	5.5C	Y	2	Kosinski,J	M
18.760	814162	5.2	S	100	11	5			0.08	B		11	4.8	Y	1	Gainsford,M.J	N
18.764	814163	5.9	M	AAVSO	6	7			0.063	R	13.3	52				Kosa-Kiss,A	O
18.767	814164	5.9	S	100	4.6	6	0.04	65	0.076	R	12	37	5.5CM	Y	1	Taylor,M.D	P
18.771	814165	4.8	S	101	8.4	8	0.04	98	0.05	B		10	4.7M	Y	3	Abbott,J	Q
18.771	814166	5.5	B	101	8.4	8	0.03	98	0.05	B		10	4.7M	Y	3	Abbott,J	R
18.779	814167	5.1	S	100	4	6			0.25	N	6	60	4.8	Y	1	Gainsford,M.J	S
18.785	814168				12	4	0.4	80	0.200	R	14	40	5.4	Y	1	Rogers,J.H	T
18.785	814169	5.6	S	100	8	5			0.080	B		10	5.4		1	Rogers,J.H	N
18.785	814170	5.4	S	100	10	4			0.050	B		10	5.4		1	Rogers,J.H	N
18.79	814171	5.3	B	M					0.03	B		8				Tsygankov,D	
18.792	814172	4.6	S	101	18	6	0.67	67	0.05	B		10	3.0M	N	1	Hurst,G.M	U
18.792	814173	5.2	B	101	15	8	0.67	90	0.06	R		25	5.5	Y	1	Ward,A	
18.794	814174	5.5	B	100		4			0.05	B		10	M	Y	2	Frosina,A	V
18.798	814175				18	7	0.67	67	0.08	B		15	3.0M	N	1	Hurst,G.M	U
18.7981	814176	5.7	B	101	5	6			0.05	B		10	5.0CM	N	2	Franciosi,C	
18.799	814177	5.0	B	101	25	5	0.33		0.102	R	14.7	60		Y		Medway,K	W
18.80	814178	6.0	S	101	9.6	6			0.203	SC	10	44	5.5C	Y	2	Maraziti,A	
18.81	814179	5.8	B	101					0.203	SC	10	44	5.5C	Y	2	Maraziti,A	
18.81	814180	4.7	S	DCS 6B	10	6			0.050	B		10	3.5MC	N	1	van Loo,F.R	
18.819	814181	4.9	S	101	10	9	0.33	55	0.065	B		12	4.5	N	1	Foulkes,M	X
18.833	814182	4.7	S	101	9	3			0.08	B		20	5.5	Y	4	Milani,G	Y
18.837	814183	5.8	M	100	6.4	4	0.05	72	0.07	B		16	5.0CM	Y	1	Taylor,M.D	Z
18.86	814184	5.0	B	AAVSO		6			0.05	R	4	7				Chernis,K	
18.86	814185	5.7	S	100					0.050	B		7	5.0	Y	1	Spalding,G.H	N
18.87	814186	5.5	B	100	10	5			0.080	B		20	CM	N	1	Jannink,D.W	a
18.88	814187	4.5	S	DCS 6B	12	5			0.040	B		7	4 MC	Y	5	Bus,E.P	
18.96	814188	4.3	S	AA	22	5			0.050	B		7				Green,D.W.E	b
18.97	814189	4.4	S	AA	22	4			0.080	B		20				Green,D.W.E	b
18.978	814190	4.7	M	101	11.4	6			0.05	B		7	5.0M	Y	1	DeYoung,J.A	
18.98	814191				3.5	7	0.8	67	0.317	N	6	68				Bortle,J.E	c
18.98	814192	4.7	S	AAVSO	11.5	6			0.050	B		10				Bortle,J.E	
18.985	814193	5.3	S	101	9	1			0.05	B		10	3.5CM	N	3	House,R.R	d

NOTE A Moonlight.

NOTE B Size increased a large amount since last observation. (5 day old moon nearby.)

NOTE C SAO 127993 comparison star.

NOTE D Sea fog in area.

NOTE E Near first quarter moon. Fog at 20:00 PST. (Observer gave limit as 9. Ed.)

NOTE F Mostly cloudy, moon.

NOTE G Comet 10 deg. from crescent moon, which may have slightly affected brightness and tail length estimates. The comet could be seen with the naked eye without much difficulty.

NOTE H Some moonlight.

NOTE I 9.0.

NOTE J Crescent moon and drifting clouds. (Observer gave limit as 8.3. Ed.)

NOTE K Magnitude is upper limit.

NOTE L Granulation in the central condensation.

NOTE M Coma diameter uncertain.

NOTE N Moon.

NOTE O Naked eye!

NOTE P Antinadi II.

NOTE Q Comparison stars 4.9, 5.4, 4.5. First quarter moon 12 deg. The "tail-lobe" structures seen in 10x50 binoculars corresponded to fountain-like features seen in larger instruments. The northern "tail-lobe" was 0.04 deg. long at PA 98. The southern "tail-lobe" was 0.04 deg. at PA 117.

NOTE R Comparison stars 5.4, 5.8. The "tail-lobe" structures seen in 10x50 binoculars corresponded to fountain-like features seen in larger instruments. The northern "tail-lobe" was 0.03 deg. long at PA 98. The southern "tail-lobe" was 0.03 deg. at PA 117.

NOTE S Moon. Tail PAs uncertain.

NOTE T See drawing. Moon.

NOTE U Strong moonlight.

NOTE V Limit = 9.3. h0 approximately 50 deg.

NOTE W 1st quarter moon 10 deg. SE. (Observer gave limit as 11.0. Ed.)

NOTE X Moon up.

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NOTE Y Moon cirri.  
NOTE Z Antoniadi III.  
NOTE a Telescopic limit is 8.  
NOTE b Coma diameter approximate.  
NOTE c Narrow, straight type I tail.  
NOTE d Hazy sky.

# SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
18.026	830523	0.26	0.114	N	8	45	14	3.9	1	Mac Kenzie,G	
18.031	830524	0.6	0.203	R	13	85,225	10	3.7	1	Fox,J.H	A
18.107	830525		0.203	SC	10	81			1	Lohvinenko,T.W	B
18.135	830526	0.75	0.318	N	8	40	31	5.5	1	Hathaway,W	
18.748	830527	0.21	0.298	N	5	40, 65,269	27	5.8	1	Stott,D	C
18.781	830528	0.5	0.200	R	14	40,170	10	5.4	1	Rogers,J.B	D
18.802	830529	2.0	0.05	B		10	30	3.0	1	Hurst,G.M	E
18.830	830530	0.21	0.203	SC	10	80,165	10	4.5	1	Foulkes,M	F

NOTE A Wing-like extensions from nucleus more easily seen at higher magnification. W edge of coma not so much brighter than E, but it is more sharply defined. Very mottled surface appearance.  
NOTE B (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
NOTE C Hood at PA 155 deg. Tail at PA 85 deg. Hood is rather a vague structure. The PA refers to its centre.  
NOTE D Coma DC 4, asymmetric, inner part bright with no stellar nucleus. "Horns" (probable), north and south edges of parabola. "Spine" (probable), centre of tail about 24' long at PA 80 deg. (These features were seen with both eyepieces, with nucleus out of field at 170x, so were almost certainly real.)  
NOTE E Difficult as moon near comet's field, but tail still seen, straight, broad, in PA 67 deg.  
NOTE F Central bright area offset from coma centre. Surrounded by a circular disk which in turn was surrounded by a fainter elliptical disk. Faint tail visible, 8' at PA 50. Coma diameter 5'x4', DC = 6.

# SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Eyp	Gdng	Id/Typ	Site	Observer(s)	Notes
18.812	850522	0.500	5.6		4.1 x 2.7	3.92	Kodak Tri-X	400/	N	X	1/P	1	Ward,A	A
18.816	850523	0.500	8		4.1 x 2.7	10.00	Fujichrome	400/27	N	O	2/S	2	Townsend,R	
18.817	850524	0.500	5.6		4.1 x 2.7	3.83	Kodak Tri-X	400/	N	X	2/P	1	Ward,A	A
18.980	850525	0.225	1.7	0.140	9.1 x 6.1	3.00	Kodak 2415		Y	S	5/P	1	Dilsizian,R	B

NOTE A UV filter used. Moon in sky.  
NOTE B Exposures limited below 5 minutes to allow for stellar guiding with a minimum of "proper motion" distortion in resolution.

DATE: 19 DEC 1985

DATE: 19 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	
19.024	814194	5.8	B	100	15	3			0.06	R	8.3	30	3.7	N	1	Fox,J.H		
19.028	814195	6.5	S	100	3.4	8			0.152	N	5.5	69	4.5M	Y	1	Hudak,D.M	A	
19.096	814196	5.9	B	101,100	16	1			0.05	B		7	4.5	Y	1	Laird,R		
19.111	814197	4.9	M	101		6	1.17	63	0.080	B		20	4.5M	Y	10	Morris,C.S		
19.117	814198	5.9	B	101		2			0.05	B		7			1	Benavides,A		
19.12	814199	5.6	B	100	12	7			0.080	B		20	3.5	Y		Kronk,G	B	
19.13	814200	6.0	B	100	9	7			0.154	N	8.0	68	3.5	Y		Kronk,G	B	
19.1424	814201	5.2	S	IHW	13	6	0.18	74	0.080	B		20	4.8		3	Machholz,D	C	
19.1451	814202	5.5	S	IHW	17	7	0.27	74	0.152	N	8.0	76	4.8		3	Machholz,D	C	
19.40	814203	5.8	B		12	6			0.05	B		10	3.5	N	1	Uda,K		
19.41	814204	5.7	S	100					0.045	R	6	13	2.5			Jones,A	D	
19.42	814205			100	2	6			0.317	N	5	86				Jones,A	E	
19.42	814206	8.8	S	SAO					0.317	N	5	86				Jones,A	F	
19.420	814207	5.5	M	101	10	6	0.25	60	0.070	B		10	4.5M	Y	1	Kato,T		
19.431	814208				4.0	6	0.10	60	0.15	N	8.5	100	4.5M	Y	1	Kato,T		
19.434	814209				6	6	0.15	60	0.15	N	8.5	50	4.5M	Y	1	Kato,T		
19.435	814210	5.6	M	100	8.5	8			0.05	B		7	4.5M	Y	1	Mitsuma,S		
19.445	814211	5.6	M	100	6.9	8	0.42	65	0.08	B		11	4.5M	Y	1	Mitsuma,S	G	
19.469	814212	6.1	S	100	6	2			0.05	B		10		Y	1	Tregaskis,T.B	H	
19.48	814213	5.5	B	M		5	2	60	0.05	B		7				Guryanov,S		
19.483	814214	6.1	B	101,100					0.07	B		10	3.0M	Y	1	Date,M		
19.54	814215	6.3	B	M					0.05	B		7				Konstantinov,S		
19.55	814216	4.9	B	AAVSO					0.11	R	7					Churyumov,K		
19.60	814217	5.9	B	M					0.05	B		7				Ponomarev,E		
19.64	814218	5.0	B	E	12	5			0.05	B		7				Mormil,V		
19.66	814219				12	5	1	60	0.050	B		7	4	N	1	Luthen,H	I	
19.67	814220	5.0	B	E	12	5			0.05	B		7				Mormil,V		
19.67	814221	5.6	B	M	7	3			0.07	N	8	33				Yurchenko,Yu		
19.69	814222	5.3	B	AAVSO					0.20	R	15					Churyumov,K		
19.70	814223	5.0	B	E	12	5			0.05	B		7				Mormil,V		
19.7083	814224	5.8	B	100	6	7			0.05	B		10	5.0MC	N	2	Franciosi,C		
19.729	814225	5.3	S	100	15	5			0.080	B		15	5	CM	Y	1	Korth,S	J
19.729	814226	6.1	B			6			0.050	B		10	M	Y	1	Linke,H		
19.730	814227	5.9	B	101					0.050	B		7	3.5C	N	1	Ruiz,J		
19.73	814228	5.8	B	100	10	5			0.050	B		7	CM	Y	1	Jannink,D.W	K	
19.74	814229	4.9	S	DCS 6B	12	4	0.33	25	0.050	R		8	4	CM	Y	1	Wils,P	
19.743	814230	5.6	S	100	7	5			0.050	B		7	5.0M	N	1	Mikuz,E		
19.747	814231	5.4	S	100	9	6			0.114	N	7.9	26	4.5CM	N	1	Bernardis,A		
19.75	814232	5.0	B	E	10	5			0.05	B		7				Mormil,V		
19.7541	814233	5.4	S	AAVSO					0.05	B		7	5.0	Y	1	Sicoli,P		
19.76	814234	5.0	S	DCS 6B		6			0.050	B		10	5	M	N	1	van der Laan,T.A	
19.76	814235	4.3	B	100	30	4			0.050	B		7	4.5	Y	2	Merlin,J.-C		
19.764	814236	6.3	M	101	72	0			0.070	R	14	20	4.5	Y	1	Luga,M		
19.774	814237	4.5	B	100	25	5	0.5		0.102	R	14.7	60		Y		Medway,K	L	
19.785	814238	5.6	M	101					0.050	B		7	5.5	N	1	Stott,D	M	
19.79	814239	5.5							0.034	B		9				Pereira,A	B	
19.84	814240	4.5	S	DCS 6B	15	5			0.040	B		7	5	M	Y	3	Bus,E.P	
19.85	814241	4.5	S	DCS 6B		7			0.100	B		14	4.5MC	N	1	van Loo,F.R		
19.907	814242	5.3	B	100	9				0.114	N	8.7	100		Y	1	Rodriguez C.,J.A	N	
19.948	814243	6.1	M	100	4.2	4			0.114	N	8	45	3.5	Y	1	Mac Kenzie,G	O	
19.96	814244	4.4	S	AA	17	6			0.050	B		7				Green,D.W.E	E	
19.977	814245	5.4	S	100,110	11	4			0.035	B		7	4.9M	N	3	Morrison,W	P	
19.993	814246	6.5	S	100	2.8	7			0.203	N	6	101	5.0M	Y	1	Hudak,D.M		

NOTE A Strong moonlight. SAO 127894 comparison star.

NOTE B Moonlight.

NOTE C 52° moon 15 degrees away.

NOTE D Moon 7d.

NOTE E Coma diameter approximate.

NOTE F Condensation.

NOTE G 9.0.

NOTE H First quarter moon, clear. (Observer gave limit as approximately 8.0. Ed.)

NOTE I Tail PA approximate. Moon nearby, cloudy.

NOTE J Coma diameter approximate. Tail almost invisible because of moon.

NOTE K Telescopic limit is 7.5.

NOTE L Comet easily seen in 10x40 mm finder. (Observer gave limit as 11.0. Ed.)

NOTE M Patchy cloud.

NOTE N Moon and fog.

NOTE O Appeared to be very slightly elliptical (centre point in coma appeared brighter than last night but no overall mag. change).

NOTE P Temperature: -12 deg. C.

NOTE P Moon 20 deg. away.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
19.007	830531	0.1	0.204	N	8	58,203	20	3.5	1	Robinson,P.C	A
19.024	830532	0.6	0.203	R	13	85	10	3.7	1	Fox,J.H	B
19.030	830533	0.3	0.200	N	8	81,130	16	3	1	Robinson,R.L	C
19.806	830534	0.11	0.125	N	5.8	28, 40, 60	35	4	1	Riccabone,G	D
19.957	830535	0.33	0.114	N	8	45, 90,150	75	3.5	1	Mac Kenzie,G	E
19.988	830536	0.48	0.200	N	8	81,130	14	3	1	Robinson,R.L	F

NOTE A Ray tail at PA 60, there was a diffuse tail on the south side of the "ray" tail; diffuse tail at PA 60-90; jet (in coma) at PA 290. The center of the coma was brighter on the west side of stellar central condensation. The north semicircle of the coma was dimmer than the rest and not as extensive. Moonlight interfered with the observation.

NOTE B Bright sky background makes coma extent less than previous nights. Still better defined edge to W. Nucleus not very distinct.

NOTE C Central condensation notably brighter than on 15/12/85. During a brief period of improved seeing a bright line appeared to project forward from the central condensation.

NOTE D Three measurements of the diameter of the comet's nucleus all yielded 54 arc sec. Magnifications of 80 and 144 also used. Two drawings included. Moonlight and intense city lights interfered with the observation. (Translated by IHW staff. Ed.)

NOTE E Magnification of 300x also used.

NOTE F Inner coma had a wedge-shape and was brighter than outer region of coma. During a short period of good seeing a thin ray projected forward. Two tails appeared to be present: a longer main tail at PA 293 and a short projection on the south side at PA 242. The central condensation was distinctly stellar in nature. (Values of PA given appear to be in error. They should probably be subtracted from 360 for true values. Ed.)

DATE: 19 DEC 1985

DATE: 19 DEC 1985

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	ID/Typ	Site	Observer(s)	Notes
19.966	850526	0.225	1.7	0.140	9.1 x 6.1	2.00	Kodak 2415		Y	S	6/P	1	Dilsizian,R	A

NOTE A Exposures limited below 5 minutes to allow for stellar guiding with a minimum of "proper motion" distortion in resolution.

DATE: 20 DEC 1985

DATE: 20 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	
20.003	814247	4.6	M	101	10.1	7			0.05	B		7	5.0M	Y	1	DeYoung,J.A		
20.01	814248					7	0.2	70	0.317	N	6	68				Bortle,J.E	A	
20.01	814249	4.6	M	AA	12	8			0.203	N	6	49				Green,D.W.E	B	
20.01	814250	4.9	S	AAVSO	7	6			0.050	B		10				Bortle,J.E		
20.015	814251	6.0	B	100		2			0.05	B		7	4.3		1	Benavides,A		
20.024	814252	6.0	B	100	16	1			0.05	B		7	4.5			Lairret,R		
20.024	814253	6.2	M	100			0.11		0.035	B		10		Y	3	Torres,E	C	
20.038	814254		B	100		1			0.05	B		18	4.5			Lairret,R		
20.10	814255	4.9	M	101		6			0.080	B		20	4.5M	Y	10	Morris,C.S		
20.125	814256	6.3		100	5	4	0.33	90	0.060	R	15	35	5.0M	Y		Underhay,E		
20.1264	814257	5.5	S	IHW	9	7	0.18	71	0.080	B		20	4.6		3	Machholz,D	D	
20.174	814258	5.9	B	100	15	4			0.050	B		10	5.0C	Y	1	Stapleton,J	E	
20.188	814259			100	15	4	0.50	320	0.254	N	5.6	157	5.0C	Y	1	Stapleton,J	F	
20.39	814260	5.2	S	100					0.08	B		11	3.0	N	1	Momose,M	G	
20.392	814261	5.4	S	100	15	5	0.33	90	0.07	B		10	5.5	Y	1	Kobayashi,J		
20.420	814262	5.6	M	101	8	7	0.17	60	0.070	B		10	5.0M	Y	1	Kato,T		
20.420	814263	4.9	M	100	18	6			0.035	B		7	5	Y	1	Watanabe,A		
20.427	814264	4.9	M	100	18	6			0.035	B		7	5	Y	1	Watanabe,H		
20.434	814265	6.3	M	101	6	6	0.20	60	0.15	N	8.5	50	5.0M	Y	1	Kato,T		
20.44	814266	5.5	B	100	7.7	7	0.4	80	0.05	B		7	4.0M	N	1	Kanai,K		
20.44	814267	5.5	M	100	6.5	8	0.42	65	0.08	B		11	5	M	Y	1	Mitsuma,S	H
20.45	814268	4.7	S	100					0.05	B		10	M	N	1	Seargent,D		
20.472	814269	5.5	M	100	4.7	6			0.12	N	6	36	3.0MC	Y	1	Kishi,A		
20.542	814270	6.1	M	100	3.1	5			0.060	R	15	45	4.5M	N	1	Purvinskis,R	I	
20.69	814271	6.5	B	M	8				0.03	B		8				Zinvyev,V.A		
20.722	814272	5.9	M	100					0.060	R	4.5	10	4.5M	Y	1	Chodorowski,F		
20.722	814273	5.4	B		2.4	3	0.6		0.030	B		8	5.0M	Y	1	Winkler,R		
20.760	814274	6.1	M	100	72	0			0.070	R	14	20	6.0	Y	1	Luga,M	J	
20.760	814275	7.1	S	100	3.9	5			0.090	R	14	46	4.0	Y	2	Hirth,G	X	
20.7687	814276	5.9	B	100		7			0.05	B		10	5.0	N	2	Franciosi,C		
20.770	814277	5.7	B		8.0	4			0.063	R	13.3	44	5.5M	Y	1	Bartnik,M		
20.81	814278	5.4							0.034	B		9			3	Pereira,A	L	
20.813	814279	6.3	M	CZ		5			0.05	B		7	4	N	1	Silhan,J	M	
20.861	814280	6.0	M	CZ	18	3			0.10	B		25	4.5M	Y	1	Hajek,P		
20.944	814281	6.1	M	100	4.4	4			0.114	N	8	45	3.7	Y	1	Mac Kenzie,G	N	

NOTE A Vague, narrow tail.

NOTE B Coma diameter approximate.

NOTE C (Observer gave limit as 9.0. Ed.)

NOTE D 62° moon 26 degrees away.

NOTE E Bright moon clear.

NOTE F Coma bright. (PA value may have been incorrectly determined. Ed.)

NOTE G Bright moon. (Translated by IHW staff. Ed.)

NOTE H 9.3.

NOTE I Wispy cloud interrupted observing.

NOTE J Clouds passing.

NOTE K Moon.

NOTE L Moonlight.

NOTE M Coma dia. less than 10 arc min. among running clouds.

NOTE N Temperature: -13 deg. C.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
20.023	830537		0.035	B		10	35		4	Cifuentes,E	A
20.113	830538	0.29	0.204	N	8	81,203	36	3.5	1	Robinson,P.C	B
20.776	830539	0.09	0.125	N	5.8	28, 40, 60	35	3.5	1	Riccabone,G	C
20.958	830540	0.28	0.114	N	8	45	99	3.7	1	Mac Kenzie,G	

NOTE A Tail faintly visible in "V" shape. Easy to get one (side) of 6 or 7 arc min., one of 15 arc min. (not precisely measured because moon was near. (Observer gave limit as 9.0. Translated by IHW staff. Ed.)

NOTE B Ray tail at PA 70; short ray at PA 100; faint "hood" at PAs 200, 180, and 155; jet at PA 240. "Hood" was very faint and possibly detached from coma. The inner coma within about 1' of stellar central condensation was generally triangular. Hood sizes: at PA 200, 2.9'; at PA 180, 5.2'; at PA 155, 5.8'. Moonlight interfered with the observation.

NOTE C Three measurements of the diameter of the false nucleus with an illuminated reticle yielded 54 arc sec. and 62 arc sec. Magnification of 80 also used. Two drawings included. Moonlight and intense city lights enhanced by the presence of light haze interfered with the observation. (Translated by IHW staff. Ed.)

DATE: 21 DEC 1985

DATE: 21 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	
21.014	814282	6.4	B	100	10	5			0.06	R	8.3	30	3.7	N	1	Fox, J.H	A	
21.035	814283	5.9	B	100		2			0.05	B		7	4.3	Y	1	Benavides, A		
21.035	814284	5.9	B	100	16	1	0.40	59	0.05	B		7	4.5			Laizet, R		
21.063	814285	5.9	M	100					0.035	B		10		Y	3	Torres, E	B	
21.073	814286		B	100		1			0.05	B		18	4.5			Laizet, R		
21.09	814287	5.7	B	100	12	7			0.080	B		20	3.5	Y		Kronk, G	C	
21.09	814288	5.0	M	101		6			0.080	B		20	4.5M	Y	10	Morris, C.S	C	
21.10	814289	6.4	B	100	7.7	8			0.335	N	4.5	56	3.5	Y		Kronk, G	C	
21.129	814290	6.1	S	100		3			0.318	N	8	41	5.3	N	1	Bathaway, W	D	
21.376	814291	5.5	M	100	12	6			0.030	B		8	4.5M	Y	1	Kato, T		
21.380	814292	6.1	M	100	5.5	6	0.15	60	0.10	N	10	55	4.5M	Y	1	Kato, T		
21.424	814293		M	100	18	5			0.035	B		7	3	Y	1	Watanabe, H		
21.438	814294	5.8	B	100					0.07	B		10	3.7CM	Y	2	Date, M		
21.495	814295	5.7	M	100	3.5	5			0.12	N	6	36	2.5MC	Y	1	Kishi, A		
21.50	814296	4.8	S	100	8				0.07	B		10	4.0M	Y	1	Yasuki, M		
21.65	814297	4.6	B	M	50	6	2.2	40	0.05	B		7				Budilka, P		
21.6652	814298	6.0	M	100		7			0.05	B		10	5.5	N	1	Franciosi, C		
21.688	814299	6.7	S	100	4.2	5			0.090	R	14	46	4.0	Y	2	Hirth, G	D	
21.69	814300	5.4	B	M	3				0.05	B		7				Mesterov, Yu		
21.704	814301	5.6	B	100	4	5			0.030	B		8	4.5M	N	1	Zische, E		
21.706	814302	5.4	B	100	7.7	5			0.080	B		20	4.5	Y	1	Guthier, O		
21.708	814303	5.8							0.080	B		15	4	Y	1	Nagelle, A	E	
21.715	814304	6.2	B	100		8			0.060	R	8	15	5.0M	Y	1	Schambeck, C.M		
21.729	814305	6.1	B	100		3			0.07	B		10	4.0	Y	1	Decoinck, M	D	
21.733	814306	5.3	S	100	15	6			0.080	B		15	5 CM	Y	1	Korth, S	F	
21.740	814307	5.8	B	4A	10.5	6			0.050	B		7	5.0M	N	1	Koschny, D		
21.740	814308	5.8	B	100	25	6			0.050	B		10	4.3	Y	2	Thomas, A	G	
21.75	814309	5.3	S	100	12	5			0.056	B		8	4.4M	N	1	Fischer, D		
21.750	814310	4.7	S	100	15	6			0.050	B		10	4.5	N	1	Marekfa, G	G	
21.75	814311	4.3	B	100	30	4	0.67	66	0.050	B		7	5.0	Y	2	Merlin, J.-C		
21.760	814312	5.2	M	100					0.089	R	5.5	18	4.5	N	1	Ventura, J	H	
21.77	814313	5.2	B	AA	9	6			0.050	B		7	4.5M	N		Schmeer, P		
21.77	814314	5.2	M	100	11	7			0.05	B		10	4.5	Y	1	Bottger, B		
21.785	814315	5.8							0.030	B		8		M	1	Ratz, M		
21.788	814316	4.9	B	100	9.9	5	0.25	56	0.10	B		14	5.0M	Y	1	Hasubick, W		
21.789	814317	5.8							0.030	B		8		M	1	Ratz, K		
21.792	814318	5.7	B	100	13	6	5	0.2	0.200	R	15	120	4.0M	Y	1	Kalauch, K.-D		
21.799	814319	4.8	B	101,100	12	7			0.050	B		7	4.5M	Y	1	Linder, J	I	
21.802	814320	5.6	S	100					0.05	B		10	4.5MCZ	Y	7	Melandri, F	J	
21.802	814321	4.8			15	4	0.7	70	0.200	SC	10	111	4.5	Y	2	Weissferdt, F	K	
21.809	814322	5.2			15	12	7		0.081	B		22	4 M	Y	1	Sternwarte Hof	G	
21.810	814323	5.0	B	101,100	10	7	0.33	70	0.100	B		14	4.5M	Y	1	Linder, J	L	
21.823	814324	4.3			6.8	5			0.08	B		15	3.5	Y	1	Dietrich, M	M	
21.828	814325	5.6	B	100		6			0.050	B		10	5.0	N	1	Lehmann, T		
21.830	814326	4.9	B	101,100	8	7			0.030	B		8	4.5M	Y	1	Linder, J	L	
21.833	814327		B	100	6				0.07	B		20	4.5M	Y	1	Filimon, E		
21.833	814328	6.3	M	100	4.4	4			0.063	R	6.7	26	6.0C	Y	1	Rudolph, M		
21.835	814329	5.6	B			3			0.080	R	6.2	12	4.0M	Y	1	Lieder, F		
21.844	814330	6.1	B			6			0.050	B		10		M	Y	1	Linke, H	
21.845	814331				4	3			0.130	N	8	40	4.0M	Y	1	Lieder, F		
21.965	814332	5.6	S	100	15	4			0.035	B		7	5.0M	N	3	Morrison, W		
21.972	814333	4.8	M	100	10.0	7	0.5	60	0.05	B		7	4.5M	Y	1	DeYoung, J.A	N	

NOTE A Strong moonlight. SAO 127826 and SAO 127836 comparison stars.

NOTE B (Observer gave limit as 8.0. Ed.)

NOTE C Moonlight.

NOTE D Moon.

NOTE E (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are SAO 127836, 127881.

NOTE F Coma diameter approximate. Tail almost invisible because of moon.

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

NOTE H The coma could be much larger than the 9' recorded since at times the faint outer parts could be made out in spite of the strong moonlight.

NOTE I Strong. Coma diameter approximate.

NOTE J Veiled sky.

NOTE K 9 day old moon. (Observer indicated "A" method [Argelander?]. Ed.)

NOTE L Moonlight. PA approximate.

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

NOTE N Bright moon.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
21.017	830541	0.6	0.203	R	13	85,150	10	3.7	1	Fox, J.H	A
21.063	830542		0.035	B		10	30		4	Cifuentes, E	B
21.743	830543	0.25	0.356	SC	11	200	20		1	Verdenet, M	C
21.757	830544	0.15	0.40	N	5	81,254	20	5.0	2	Merlin, J.-C	D
21.776	830545	0.11	0.125	N	5.8	28, 40, 60	14	2.5	1	Riccabone, G	E
21.797	830546	0.07	0.36	SC	11	434	5		1	Korth, S	F
21.803	830547	0.30	0.36	SC	11	123	7		1	Korth, S	G

NOTE A Darker "wedge" about 120 deg. extent at about PA 90. Coma well seen to NW, W, SW. Contrast low from interfering moonlight. Dark wedge seen at 85x and 150x, but does not extend to nucleus.

NOTE B Tail approximately 35 arc min. long. Straight. (Observer gave limit as 9.0. Translated by IHW staff. Ed.)

NOTE C Moonlight. (Additional drawing submitted made using 11x80 binoculars (1.97"/mm). Ed.)

NOTE D Tail streamer at PA 44; tail at PA 66; tail denser along axis; tail streamer at PA 88; jet at PA 318. Parabolic hood tailward. Brighter area sunward.

NOTE E Moonlight, intense city lights, and haze interfered with the observation. Dimensions were indirectly measured and are not reliable. (Translated by IHW staff. Ed.)

NOTE F Jet or part of tail 49" long at PA 38; jet 16" long at PA 60; jet or part of tail 61" long starting at PA 140, curving to PA 120. Bright moon disturbed observation of faint structures. City lights interfered with the observation. Attention: a zenith mirror was used!

NOTE G Tail? 6" long at PA 70; jet or tail? 3" long at PA 110. Bright moon disturbed observation of tail. City lights interfered with the observation. Attention: a zenith-mirror was used!

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gang	Id/Typ	Site	Observer(s)	Notes
21.074	850527	0.135	2.8		15.2 x10.2	3.00	Ektachrome	200/24	N	M	002/S	1	Brutsche, E	
21.080	850528	0.135	2.8		15.2 x10.2	5.00	Ektachrome	200/24	N	M	003/S	1	Brutsche, E	

DATE: 21 DEC 1985

DATE: 21 DEC 1985

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
21.688	850529	0.950	4.7	0.20	2.2 x 1.4	1.00	Kodak 2415		Y		8/P	1	Conrad,R	A
21.745	850530	1.690	5.6	0.305	1.2 x 0.8	5.00	Agfachrome	1000/31	N		9/S	1	Korth,S	B
21.774	850531	0.300	5.6		6.9 x 4.6	10.00	Agfachrome	1000/	N		001/P	1	Brandli,W	C

NOTE A City lights interfered with the observation, Vienna, from room!

NOTE B Moonlight interfered with the observation. City lights interfered with the observation. (Observer indicated both type O and type X guiding. Ed.)

NOTE C Photo equipment mounted parallel to telescope, electric drive. (Translated by IHW staff. Ed.)

DATE: 22 DEC 1985

DATE: 22 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	
22.010	814334	5.5	S	100	10	1			0.05	B		10	4	CM	N	3	House,R.R	
22.02	814335	4.8	S	AAVSO	9	5			0.050	B		10					Bortle,J.E	A
22.02	814336				3.5	6			0.317	N	6	55					Bortle,J.E	A
22.035	814337	5.9	M	100					0.050	B		7			Y	4	Torres,E	B
22.053	814338	5.8	B	100	16	1	0.47	58	0.05	B		7	3.7				Lalret,R	
22.065	814339	6.0	M	100			1		0.050	B		7			Y	4	Torres,E	C
22.069	814340	6.0	B	100		2			0.05	B		7	3.7			1	Benavides,A	
22.09	814341	4.5	S	AA	11	5			0.203	N	6	49					Green,D.W.E	D
22.10	814342	5.2	M	101		6			0.080	B		20	4.0MC	Y		9	Morris,C.S	
22.563	814343	6.2	M	100	3.3				0.060	R	15	45	4.0M	N		1	Purvinskis,R	E
22.667	814344	5.9	M	100					0.060	R	4.5	10	4.0M	Y		1	Chodorowski,F	
22.684	814345	6.1	B	100					0.063	R	13.3	21	4.0M	N		1	Pilski,A	
22.688	814346			100	6	5			0.064	R	6.3	20	3.5MC	N		1	Maciejewski,W	
22.69	814347	6.5	S	100	3.6	7	0.08	67	0.20	N	6	31	5.0M	Y		1	Jahn,J	
22.694	814348			100	4.5	6			0.150	R	15	56	3.5MCT	N		1	Richert,M	
22.708	814349	6.6	S	100	3.6	5			0.090	R	14	46	4.0	Y		2	Hirth,G	F
22.708	814350	5.2	S	100	15	6			0.080	B		15	5.5CM	Y		1	Korth,S	G
22.710	814351	5.6	B			3			0.080	R	6.2	12	4.0M	Y		1	Lieder,F	
22.71	814352	5.9	B	100		7			0.050	B		12	3.5M	Y		1	Mosch,J	
22.712	814353	5.1	B	100		5			0.10	B		14	5.0M	Y		1	Hesabick,W	
22.714	814354	5.8	M	AAVSO	5	6			0.063	R	13.3	52					Kosa-Kiss,A	H
22.715	814355	5.6							0.035	B		7	4.9CM	N		1	Marr,H	I
22.715	814356	4.8	S	100	15	6	1.3		0.152	N	5	44	5.2	Y		2	Moeller,M	J
22.7173	814357	6.2	B	100		6			0.05	B		10	5.0MC	N		2	Franciosi,C	
22.719	814358	4.9	B		3.7	2	0.7		0.030	B		8	5.0M	Y		1	Winkler,R	
22.72	814359	5.5	S	DCS 7		6			0.050	B		10	4.5MT	N		1	van der Laan,T.A	
22.722	814360	5.3	S	100	8	5			0.056	B		8	4.3M	N		1	Fischer,D	
22.7229	814361	5.2	S	100	26	20		62	0.08	B		10	4.4M	Y		1	Znasik,M	F
22.725	814362	4.2	S	100	8	8			0.050	B		7	4.2MC	N		5	Meozzi,D	
22.726	814363	6.3	M	100	4.4	4			0.063	R	6.7	26	5.5C	N		1	Rudolph,M	
22.729	814364	4.3		100	6.8	5			0.08	B		15	3.5	Y		1	Dietrich,M	K
22.729	814365	6.1	B			6			0.050	B		10	M	Y		1	Linke,H	
22.73	814366	5.0	S	100					0.08	B		20	4.7			3	Shanklin,J.D	
22.73	814367	5.7	B	100	10	6			0.050	B		7	CM	Y		2	Jannink,D.W	L
22.73	814368	4.3	S	DCS 7	17	6			0.046	R	4	8	5.5M	Y		3	van de Weg,R.L.N	
22.736	814369	5.5	M	100	7	6	0.13		0.080	B		10	5.0M	N		1	Mikuz,H	
22.74	814370	5.9	B	DCS 6B	10	4			0.063	B		8	4	CM	N	1	Geenen,J.J	
22.74	814371	4.5	S	DCS 7	14	8	1.0	50	0.060	B		12	5.5M	Y		3	van de Weg,R.L.W	
22.74	814372	4.3	B	100	30	4	1.00	64	0.050	B		7	5.5	Y		2	Merlin,J.-C	
22.750	814373				4	3			0.130	N	8	40	4.0M	Y		1	Lieder,F	
22.750	814374	4		100	5	5			0.114	N	7.9	30	4			1	Kerber,P	M
22.750	814375	5.8	B	100		4			0.068	R	11.7	35	4	M	Y	2	Paradowski,M	
22.750	814376	6.0	S	CZ	3	2			0.10	C	10	25	3.5M	Y		1	Polak,J	
22.753	814377	5.2	B	100	10	7			0.050	B		7	M	Y		1	Bohme,D	N
22.757	814378	5.7	B	100		4			0.064	R	6.3	25	4	M	Y	2	Paradowski,M	
22.757	814379	5.0	S	100	4.0	5			0.063	R	13.3	34	3.5C	Y		4	Skjaeraasen,O	O
22.760	814380	5.6	M	CZ		4			0.05	B		7	4.2M			2	Pravec,P	
22.764	814381	5.7	B	100		4			0.05	B		7	4	M	Y	2	Paradowski,M	
22.764	814382				15	4	1	50	0.10	N	6	38	4.2M			2	Pravec,P	
22.764	814383	5.7	B	100	4	6			0.063	R	13	34	4.5M	N		1	Zische,E	
22.767	814384	6.3	B	100	3	8			0.113	N	8	22	5.0M	Y		1	Schambeck,C.M	
22.770	814385	6.3			12	4			0.050	R	11	22	5.5M	Y		1	Kliche,J	
22.776	814386	5.6	B	100	4.3	3	1.0	293	0.05	B		10	5.2M	Y		1	Bretschneider,H	
22.785	814387	6.0	B	100		3			0.07	B		10	3.5	Y		1	Deconinck,M	F
22.785	814388	5.4	B	SAO,IHW	6.7	5		62	0.080	B		20	4.0	Y		1	Guthier,O	P
22.791	814389	5.6	B	100	6.5				0.07	B		20	4.0M	Y		2	Filimon,E	
22.792	814390	5.7	S		10.0	4			0.063	R	13.3	44	6.0M	Y		1	Bartnik,M	
22.792	814391	5.7	B	100	14	8	0.2	60	0.200	R	15	120	4.5M	Y		1	Kalauch,K.-D	
22.795	814392	6.2	B	100		8			0.060	R	8	15	5.0M	Y		1	Schambeck,C.M	
22.800	814393	5.7	B	100		6			0.050	B		10	4.5	N		1	Lehmann,T	
22.813	814394	5.0			40	5	2.2	65	0.200	SC	10	200	4.5C	N		1	Lucius,D	Q
22.813	814395	5.0			40	5	2.2	65	0.080	B		15	4.5	N		1	Lucius,D	Q
22.833	814396	5.2		100	10	8			0.081	B		22	3.8M	Y		1	Sternwarte Hof	M
22.857	814397	5.1	B	4A	20	8			0.06	R		15	5.5	Y		1	Ward,A	
22.958	814398			100	4.4	4			0.114	N	8	45	3.5	Y		1	Mac Kenzie,G	R

NOTE A Moonlight.

NOTE B (Observer gave limit as 9.5. Ed.)

NOTE C (Observer gave limit as 10.0. Ed.)

NOTE D Coma diameter approximate.

NOTE E Bright moonlight.

NOTE F Moon.

NOTE G Coma diameter approximate. Tail almost invisible because of moon.

NOTE H Naked eye!

NOTE I Comparison stars 2 Psc, 1 Psc. (Observer indicated "A" method [Argelander?]. Ed.)

NOTE J PA 70, 120. Moon.

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

NOTE L Telescopic limit is 7.

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

NOTE N Coma diameter exceeds value given.

NOTE O No light pollution but unfortunately even though the background sky was very dark, thin clouds along the horizon worsened the seeing tremendously.

NOTE P Tail length 2 to 3 deg.

NOTE Q (Observer indicated "A" method [Argelander?]. Ed.) Coma diameter approximate.

NOTE R A very faint tail seemed to become visible rarely (PA: 39; length about 25'). This was not confirmed and should be considered spurious and was not included on diagram. No magnitude estimate was made because of lack of comparison stars.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
22.042	830548		0.050	B		7	40		3	Cifuentes,E	A
22.714	830549	0.88	0.063	R	13.3	52		5.9	1	Kosa-Kiss,A	B
22.716	830550	0.9	0.063	R	13.3	52			1	Csukas,M	C
22.736	830551	0.25	0.356	SC	11	200			1	Verdenet,M	D
22.750	830552		0.75	N	4	115				Delfs,M	E
22.755	830553	0.06	0.40	N	5	81,254	15	5.5	2	Merlin,J.-C	F
22.755	830554	0.49	0.063	R	13.3	34, 53	13	3.5	4	Skjaeraasen,O	G
22.763	830555	0.09	0.36	SC	11	326	6	5.5	1	Korth,S	H
22.799	830556		0.25	N	6	75			1	Guthier,O	I
22.813	830557	0.71	0.200	SC	10	200	60	4.0	1	Lucius,D	J



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DATE: 22 DEC 1985

Date(UT)	ACON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
22.813	830558	1.0	0.080	B		15	60	4.0	1	Lucius,D	J
22.823	830559	2	0.05	R		15, 30, 40	20	4.0	1	Kopp,M	K
22.958	830560	0.20	0.114	N		45, 90	59	3.5	1	Mac Kenzie,G	
22.965	830561		0.050	B		7	20		3	Cifuentes,E	L

NOTE A Tail very faint because of nearby moon. (Observer gave limit as 9.5. Translated by IHW staff. Ed.)

NOTE B Schematic drawing. Moonlight interfered with the observation. (Duration not indicated. Time of observation is end time. Ed.)

NOTE C Halo diameter = 12'; DC = 8; Tail at PA 109, 23' length. A 30' tail had PA 135 6' to nucleus, PA 140 15' to nucleus, PA 152 34' to nucleus. [sic] (Duration not indicated. Time of observation end time. Ed.) Schematic drawing.

NOTE D Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Additional drawing submitted made using 11x80 binoculars (1.97"/mm). Ed.)

NOTE E Wide tail probably not existing (but is indicated in the drawing. Ed.). (Translated by IHW staff. Ed.)

NOTE F Tail at PA 64, largely widening and tail denser along axis; jet at PA 163; jet at PA 235; jet at PA 326, diffuse. Oval shaped coma. "Bright" area toward south-east.

NOTE G Field: 48". Lumicon Deep Sky filter used. The site during this observation was in a little village far away from any town where the seeing usually is very good. Unfortunately, there was moist [sic] in the air and thin clouds along the horizon (also in the direction of Halley) when I observed from there. In addition, the moonlight interfered severely so the seeing was not as good as I had hoped for. Temperature: -4 C. No tail was detectable, and the head of the comet looked totally circular and the surface brightness decreased smooth and gradually outwards from the innermost small central condensation. It was very difficult to distinguish between the outermost parts of the coma and the background (which was satisfactorily dark).

NOTE H Part of tail? 74 arc sec. long at PA 135; jet 11 arc sec. long at PA 195.

NOTE I Condensation not very conspicuous. (Translated by IHW staff. Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE J Tail at PA 65.

NOTE K Stability of star image: good. Temperature: 6 deg. C. Coma less diffuse, brightness towards the center; tail: irregular structure at the borders brightness differences within the tail. Vertex distance: V = 14.0' Semi latus rectum: Pl = 10.5', P2 = 10.0'. Tail PA 40. Moonlight interfered with the observation.

NOTE L Tail visible - large and small openings near ends of "V". Length estimated 1 deg. (Observer gave limit as 10.0. Translated by IHW staff. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
22.688	850532	0.500	6.2	0.080	4.1 x 2.7	10.00	ORWO NP 27	400/27	N	S	08/P	1	Richert,M	A
22.717	850533	0.300	5.6		6.9 x 4.6	4.00	Agfachrome	1000/31	N		10/S	1	Korth,S	B
22.817	850534	0.200			10.3 x 6.9	10.00	Agfachrome	1000/	N	X	2/P	1	Lucius,D	C

NOTE A Twilight, moonlight, and city lights interfered with the observation. OG 5 filter used. (Observer's image identifier is preceded by prefix 86/. Ed.)

NOTE B UV-Haze filter used. City lights interfered with the observation. (Observer indicated both type O and type X guiding. Ed.)

NOTE C City lights interfered with the observation.

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DATE: 23 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	
23.035	814399	4.2	B	100		3			0.06	R	12	56	5.3	Y	1	Onofre D.,D		
23.063	814400	5.8	B	100	16	1	0.53	59	0.05	B		7	4.0			Lairret,R		
23.083	814401	6.0	S	4A	6	5			0.080	B		11		Y	3	Pryal,J	A	
23.365	814402	5.0	M	100	15	6			0.035	B		7	4	Y	1	Watanabe,A		
23.368	814403	5	M	100	15	6			0.035	B		7	4	Y	1	Watanabe,H		
23.42	814404	6.5	B	SAO	10	6			0.15	N	6	23	5	Y	3	Tanikawa,M	B	
23.455	814405	5.0	M	100	7	6			0.030	B			4.5M	Y	1	Kato,T		
23.456	814406	7.0	B		4	5	0.07	60	0.10	N	10	55	4.5M	Y	1	Kato,T		
23.46	814407	4.8	S	100	9	8	0.07	90	0.08	B		11	4.0	N	3	Momose,M	C	
23.500	814408	6.0	S	100	2.5	5			0.08	R	12.5	40	4.0M	Y	1	Feisheng,J		
23.53	814409	6.0	B	M					0.05	B		7				Konstantinov,S		
23.63	814410	4.9	B	E	12	5			0.05	B		7				Mormil,V		
23.67	814411	4.9	B	E	12	5			0.05	B		7				Mormil,V		
23.67	814412	5.7	M	M	23	6			0.04	B		12				Maydik,A		
23.677	814413		S	100	3	4			0.080	R	6.2	31	2.5MCT	N	2	Richert,M		
23.677	814414	6.2	S	100	2	3			0.064	R	12	20	4.7M	N	1	Urbanski,P		
23.68	814415	5.9	B	100		7			0.050	B		12	3.5M	Y	1	Mosch,J		
23.688	814416	6.0	B	100		4			0.030	B		8	3.5MCT	N	2	Richert,M		
23.698	814417	4.9	M	100	11	9	0.47	84	0.08	B		11	3.0M	N	1	Gubo,H		
23.698	814418		S	100	5	4			0.064	R	6.3	20	3.0MC	N	1	Maciejewski,W		
23.698	814419	5.5	B	100	5	3			0.090	N	7.2	26	4.5	Y	1	Vohla,F		
23.70	814420	4.9	B	E	12	5			0.05	B		7				Mormil,V		
23.705	814421	6.1	M	CZ	5	6			0.03	B		8	4.2M	N	1	Silhan,J	D	
23.705	814422	4.9	B		5	2	0.9		0.030	B		8	5.0M	Y	1	Winkler,R		
23.71	814423	6.0	M	AA	6	6			0.106	R	5.7	24				Keszthelyi,S	E	
23.7104	814424	5.3	S	100	25	8	0.42	60	0.08	B		10	4.8M	Y	1	Znasik,M	F	
23.712	814425	5.8	M	CZ	7	4			0.05	B		7	4	M	N	1	Silhan,J	G
23.715	814426	5.2	S	100	8	6			0.04	B		10	4.2CM	N	1	Fischer,D		
23.717	814427	5.5	B	100	4.6	3	1.0	295	0.05	B		10	3.5M	Y	1	Bretschneider,H		
23.722	814428	5.8	M	CZ	5	6			0.055	R		12	4	M	N	1	Silhan,J	
23.729	814429	6.0	M	100	66	0			0.070	R	14	20	4.5	Y	1	Luga,M		
23.729	814430	5.1	B	100	10	7			0.050	B		7	M	Y	1	Bohse,D	H	
23.74	814431	5.6	S	100					0.08	B		20	4.0		3	Shanklin,J.D		
23.740	814432	5.2	S	100	12	6	0.8	60	0.080	B		15	5.2C	Y	1	Korth,S	I	
23.740	814433	5.2	S	100	9	6			0.050	B		16	4.0M	N	1	Nolle,M		
23.746	814434	5.7	M	AAVSO	7	6	0.4	87	0.063	R	13.3	52				Kosa-Kiss,A	J	
23.747	814435	5.0	S	100		4			0.08	B		11	3	Y	1	Gainsford,M.J	K	
23.747	814436	6.0	M	100	25	4			0.067	R	12	60	4.5M	Y	1	Kosinski,J	L	
23.75	814437	5.4	S	100	12	10	0.25	60	0.065	B		12	4.0	N	3	Foulkes,M	M	
23.750	814438	5.1	S	100	5	4			0.080	B		10	4.8		1	Rogers,J.E	N	
23.750	814439		S	100	4.7	7	0.04	40	0.21	N	5	43	5.5CM	Y	1	Taylor,M.D	O	
23.75	814440	5.4	B	DCS 7	9	8	0.08	55	0.115	N	8	45	4.5MC	Y	1	van Munster,T		
23.750	814441	6.3	M	100	4.5	4			0.063	R	6.7	26	5.5C	N	1	Rudolph,M		
23.75	814442	4.9	B	E	10	5			0.05	B		7				Mormil,V		
23.753	814443	4.8		100	7.5	5	0.25	60	0.081	B		22	4.2M	Y	2	Sternwarte Hof	P	
23.760	814444				6	5	0.13	70	0.200	R	14	40	4.8		1	Rogers,J.H	Q	
23.76	814445	5.2	S	DCS 6B	4	7			0.050	B		10	4.5MC	Y	1	van Loo,F.R		
23.760	814446	5.4	M	CZ	5.5	5			0.05	B		7	4.3M		2	Pravec,P		
23.762	814447		S	100	4	4			0.25	N	6	40	3	Y	1	Gainsford,M.J	K	
23.763	814448	4.4	S	100					0.05	B		10	2.5	N	1	Hurst,G.M	R	
23.764	814449	6.2	B		5	6			0.200	N	7.2	36	5.0	Y	1	Lipski,P	S	
23.764	814450	4.5	S	100	4.6	7	0.05	65	0.05	B		10	4.2M	Y	3	Abbott,J	T	
23.767	814451		CZ		4.5	3	6	0.5	80	0.10	N	6	38	4.3M		2	Pravec,P	
23.77	814452	4.3	B	100	30	3	1.00	51	0.060	B		9	6.0	Y	2	Merlin,J.-C		
23.774	814453	5.8	M	100	6.0	4	0.1	38	0.04	B		8	5.5CM	Y	1	Taylor,M.D		
23.78	814454	4.1	S	DCS 7	15	4			0.046	R	4	8	5.8M	Y	3	van de Weg,R.L.W		
23.78	814455	4.4	S	DCS 7	12	7	1.5	50	0.060	B		12	5.8M	Y	3	van de Weg,R.L.W		
23.781	814456	5.7	B	100	10	7	0.3	35	0.200	R	15	120	4.5	Y	1	Kalauch,K.-D		
23.785	814457	5.8	B	100	9.2	4			0.07	B		10	3.5	Y	1	Deconinck,M	F	
23.799	814458	6.0	S	100	4.2	3	0.04	75	0.076	R	12	37	5.5CM	Y	1	Taylor,M.D	U	
23.799	814459	5.6	M	100	6	5	0.05	38	0.07	B		16	5.5CM	Y	1	Taylor,M.D	U	
23.94	814460	4.3	S	AA	20	7			0.050	B		7				Green,D.W.E	V	
23.969	814461	5.0	B	9	5.3	2			0.06	R	15	41	4.0	Y	2	Rodriguez,V		
23.97	814462	4.4	S	AA	18	6			0.035	B		7				Green,D.W.E	V	

NOTE A Bright moon. (Observer gave limit as 9. Ed.)

NOTE B m2 (observer's symbol believed to mean "approximately equal to", Ed.) 10.

NOTE C Bright moon. (Translated by IHW staff. Ed.)

NOTE D Cirrus.

NOTE E + 7x50 B and 8 mag. nucleus. [sic]

NOTE F Moon.

NOTE G Cirrus.

NOTE H Coma diameter exceeds value given.

NOTE I Tail still very diffuse.

NOTE J Naked eye!

NOTE K Moon and cloud.

NOTE L Coma diameter uncertain.

NOTE M Moon up.

NOTE N No definite asymmetry. Moon.

NOTE O Antoniadi III. Moonlight!

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

NOTE Q Coma slightly asymmetric. Tail very faint; PA approximate. Nucleus resolved at 170x.

NOTE R Seen through thick clouds.

NOTE S Oval.

NOTE T Comparison stars 4.0, 5.0, 4.8, 5.5. Moonlight.

NOTE U Antoniadi III. Moon.

NOTE V Coma diameter approximate.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
23.43	830562	1.37	0.15	N	6	23	14	3	2	Tanikawa,M	A
23.712	830563	0.97	0.106	R	5.7	24, 48, 60	10	5.2	1	Keszthelyi,S	B
23.729	830564	0.5	0.11	R	11	30	40	5.5	1	Adamoli,G	C
23.743	830565		0.750	N	7.7	115			1	Freydank,H	D
23.746	830566	0.88	0.063	R	13.3	52		5.9	1	Kosa-Kiss,A	E
23.750	830567	0.25	0.356	SC	11	200			1	Verdenet,M	F
23.790	830568	0.07	0.36	SC	11	439	15	5	1	Korth,S	G
23.813	830569	0.21	0.203	SC	10	80,220	10	4.0	2	Foulkes,M	H
23.835	830570	2	0.05	R	7	25, 40	15	4.0	1	Kopp,M	I

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NOTE A Dia. and m2 (observer's symbol believed to mean "approximately equal to", Ed.) 10' and 10, respectively. DC = 6/10. m1 = 6.5.  
 NOTE B Coma "bump" at PA 30 and at PA 180. (Translated by IHW staff. Ed.)  
 NOTE C City lights and moonlight interfered with the observation. Tail at PA 65. Tail very faint.  
 NOTE D Haze. 3 days before full moon. Brightness about 5.1 mag.; dia. about 50". (Translated by IHW staff. Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE E Feature at PA 87 deg. Schematic drawing. Moonlight interfered with the observation. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE F Intense moon. (Duration not indicated. Time of observation is assumed to start time. Additional drawing submitted made using 11x80 binoculars. Ed.)  
 NOTE G Tail at about PA 100 center of tail; jet 8 arc sec. long at PA 20. Tail very faint and diffuse, darker between PA's 75 and 125, can be traced to a length of about 0.5 deg. City lights interfered with the observation.  
 NOTE H Coma 6"x4", DC = 8. Coma noticeably elliptical in PA 60-240. Central brightening in coma appeared star-like offset from centre of coma. Faint tail glimpsed using AV (averted vision?, Ed.), 6' at PA 60.  
 NOTE I Coma less diffuse, brightness towards the center; tail at the end: irregular structure. Vertex distance: V = 13.0. Semi latus rectum: P1 = 10.5', P2 = 10.5'. Tail PA 42 deg. Moonlight interfered with the observation. Stability of star image: fair. Temperature: 5 deg. C.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
23.716	850535	0.750	6.3		2.7 x 1.8	15.00	ORWO	400/27	N	C	5/N	1	Znasik,M	A
23.733	850536	0.840	13.3	0.080	2.5 x 1.6	30.00	ORWO NP 27	400/27	N	O	601/P	1	Schneidereit,J	
23.739	850537	0.300	4		6.9 x 4.6	2.00	Fotopan HL	400/27	N	O	7/P	1	Slusarczyk,J	
23.741	850538	1.000	5.6		2.1 x 1.4	20.00	Fomapan	400/27	N	O	6/N	1	Zimnikoval,P	B

NOTE A Large format (11.8x8.6 cm) film used.  
 NOTE B Large format (6x6 cm) film used.

DATE: 24 DEC 1985

DATE: 24 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
24.026	814463	5.9	M	100			1		0.050	B		7		Y	4	Torres,E	A
24.033	814464	6.5	B	100	10	5			0.203	R	13	85	4.0	N	1	Fox,J.H	B
24.054	814465	5.8	B	100	12	1	0.60	57	0.05	B		7	5.0			Lalret,R	
24.060	814466	5.9	B	100		2	0.25	63	0.05	B		7	4.3		1	Benavides,A	
24.367	814467	5.2	M	100	8	6			0.030	B		8	4.0MT	Y	1	Kato,T	
24.37	814468	5.3	M	100					0.05	B		7	4.5M	Y	2	Suzuki,K	
24.37	814469		M	100	3.5	5	0.5		0.31	N	5.7	147	4.5M	Y	2	Suzuki,K	C
24.375	814470	4.9	M	100	10	6			0.035	B		7	5	Y	1	Watanabe,A	
24.375	814471	4.9	M	100	10	6			0.035	B		7	5	Y	1	Watanabe,H	
24.382	814472	5.5	B	100	25				0.05	B		7	4.0M	Y	1	Hayashi,H	
24.384	814473				4	6	0.07	60	0.10	N	10	55	4.5M	Y	1	Kato,T	
24.416	814474	5.3	M	100	6.4	6			0.12	N	6	36	3.0C	Y	1	Kishi,A	
24.425	814475	5.4	M	100	6.5	8	0.42	65	0.08	B		11	4.5M	N	1	Mitsuma,S	D
24.456	814476	5.0	S	100	12	3			0.05	B		10		Y	1	Tregeakis,T.B	E
24.462	814477	5.3	M	100	10	5	0.83	95	0.05	B		7	5.0	Y	1	Ichikawa,K	F
24.468	814478			100	3.7	3			0.152	M	8	64		Y	1	Tregeakis,T.B	G
24.47	814479	4.6	S	4A	8	6			0.08	B		11	3.0	N	3	Komoso,M	
24.479	814480	5.8	B	100					0.07	B		10	3.7M	Y	1	Dato,M	
24.49	814481	5.8	S	AAVSO	5	4			0.07	B		10	4.0M	Y	1	Hayashi,A	
24.61	814482	5.7	M	M	20	6			0.04	B		12				Maydik,A	
24.63	814483	4.8	B	E	12	5			0.05	B		7				Mormil,V	
24.63	814484	6.0			3	5			0.045	B		7	4.0M	Y	1	Speil,J	H
24.66	814485	4.8	B	E	12	5			0.05	B		7				Mormil,V	
24.687	814486	5.5	B	100	4.2	4	1.0	305	0.05	B		10	4.5MT	Y	1	Bretschneider,H	
24.691	814487	5.3	S	100		6			0.05	B		7	M	Y	1	Dziura,W	
24.691	814488	4.7	B		5.2	3	1.0		0.030	B		8	5.0M	Y	1	Winkler,R	
24.698	814489	5.6	B	100	5	4			0.090	N	7.2	26	4.5	Y	1	Vohla,F	
24.70	814490	4.8	B	E	12	5			0.05	B		7				Mormil,V	
24.70	814491	5.7	M	M	20	6			0.04	B		12				Maydik,A	
24.708	814492			100	3.5	4			0.064	R	6.3	25	4 M	Y	2	Paradowski,M	
24.710	814493	4	B	101,100		6			0.050	B		7	3 M	N	1	Linder,J	I
24.715	814494	5.1	B	SAO,IHW	6.7	5			0.080	B		20	4.0	Y	1	Guthier,O	
24.72	814495	5.6	B	100		7			0.050	B		12	3.5M	Y	1	Mosch,J	
24.729	814496	6.0	B			7			0.050	B		10	M	Y	1	Linke,H	
24.729	814497	5.6	B	100		4			0.08	B		10	4 M	Y	2	Paradowski,M	
24.733	814498	5.1	B	SAO,IHW					0.125	R	6	35	4.0	Y	1	Guthier,O	
24.736	814499	5.6	B	100		4			0.05	B		7	4 M	Y	2	Paradowski,M	
24.74	814500	5.7	M	M	20	6			0.04	B		12				Maydik,A	
24.75	814501	4.8	B	E	10	5			0.05	B		7				Mormil,V	
24.764	814502				10	2			0.050	R	11	22	5.0M	Y	1	Kliche,J	J
24.781	814503	5.6	B		12.0	5			0.063	R	13.3	44	5.0M	Y	1	Bartnik,M	
24.785	814504	6.2	M	100	4.5	4			0.063	R	6.7	26	5.0MC	N	1	Rudolph,M	
24.79	814505	4.8	B	E	8	5			0.05	B		7				Mormil,V	
24.797	814506	5.1	B	100					0.050	B		7		Y	1	Bohme,D	
24.806	814507	5.5	B	100	10	7	0.3	60	0.200	R	15	120	4.5	Y	1	Kalauch,K.-D	
24.819	814508	4.0		100	7	4			0.08	B		15	3.5	Y	1	Dietrich,M	K
24.938	814509	6.0	B	100	15				0.08	B		15		N	2	Losada,R	
24.94	814510	4.5	S	AA	10	4			0.080	B		20				Green,D.W.E	J
24.968	814511	5.7	B	100		3			0.05	B		7	4.9		3	Benavides,A	
24.989	814512	5.4	S	100,101	8.5	5			0.035	B		7	4.5M	N	3	Morrison,W	
24.990	814513			100		4	0.1	72	0.113	N	8	45	4.9	Y		Benavides,A	

NOTE A (Observer gave limit as 9.0. Ed.)

NOTE B Strong moonlight.

NOTE C Meter: coma diameter is P1 + P2. Blue.

NOTE D 9.1.

NOTE E Bright gibbous moon, thin clouds. (Observer gave limit as approximately 8.0. Ed.)

NOTE F Bright gibbous moon, thin clouds.

NOTE G Bright moon. (Translated by IHW staff. Ed.)

NOTE H Icy wind.

NOTE I Little fog. [sic]

NOTE J Coma diameter approximate.

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

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
24.010	830571		0.203	SC	10	81			1	Lohvinko,T.M	A
24.028	830572		0.050	B		7	20		3	Cifuentes,E	B
24.035	830573	0.6	0.203	R	13	85,150	10	4.0	1	Fox,J.H	C
24.722	830574		0.25	N	6	75			1	Guthier,O	D
24.743	830575		0.203	SC	10	226			2	Frejdank,H	E
24.938	830576		0.080	B		15			4	Losada,R	F

NOTE A Comet Halley has a nuclear magnitude of 7.2 (check stars: SAO 76017, HR 72). (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Tail visible. Length estimate: 1 deg. Openings toward beginning and end. Tails of gas (ion) and dust. (Observer gave limit as 9.0. Translated by IHW staff. Ed.)

NOTE C Coma elongated NS and slightly notched E. Notch may just be outlined by two bright lobes NE and SE of nucleus.

NOTE D The condensation has revived, with a kernel-like center of 20-30". (Translated by IHW staff. Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E 2 days before full moon. Brightness 5.1 mag. dia. about 50". (Translated by IHW staff. Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE F (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

DATE: 25 DEC 1985

DATE: 25 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
25.000	814514	5.8	M	100			1.5		0.050	B		7		Y	4	Torres,E	A
25.003	814515	4.8	M	100	22	7	0.58	290	0.05	B		10	6.5	Y	4	Fabre,R	B
25.014	814516	5.6	B	100	12	2	0.67	52	0.05	B		7	5.0			Lairret,R	
25.024	814517	5.9	B	100	15	10			0.203	R	13	85	4.0	N	1	Fox,J.H	C
25.133	814518	5.6	M	4A	7.1	6			0.06	B		20	4.0MC	N	1	de la Rosa Jr,A	D
25.1340	814519	5.3	S	DCS	9	6			0.080	B		20	4.5		3	Machholz,D	E
25.167	814520	6.1	S	100	35	8	0.17	71	0.203	SC	10	125	3.5CM	Y	1	Gronck,J.D	F
25.371	814521	5.0	S	100	10	5	0.42	90	0.07	B		10	5.5	Y	1	Kobayashi,J	
25.39	814522	4.7	S	4A	12	7	0.10		0.08	B		11	4.5	N	3	Momose,M	G
25.394	814523	5.2	M	100	6	6			0.030	B		8	4.5M	Y	1	Kato,T	
25.42	814524	5.6	B		10	6			0.05	B		10	3.5	N	1	Uda,K	
25.55	814525	5.8	B	M		6			0.05	B		7				Ponomarev,E	
25.61	814526	5.7	M	M	20	6			0.04	B		12				Maydik,A	
25.64	814527	5	B	M	8				0.03	B		8				Zinvyev,V.A	
25.66	814528	5.7	M	M	20	6			0.04	B		12				Maydik,A	
25.66	814529	4.9	B	E	10	5			0.05	B		7				Mormil,V	
25.70	814530	5.7	M	M	20	6			0.04	B		12				Maydik,A	
25.70	814531	4.8	B	E	10	5			0.05	B		7				Mormil,V	
25.7083	814532	5.3	S	100	20	7	0.50	61	0.08	B		10	4.4M	Y	1	Znasik,M	H
25.715	814533	6.0	M	100	60	0			0.070	R	14	20	4.0MT	Y	1	Luga,M	
25.729	814534	5.4	B	100	2.8	4			0.068	R	11.7	35	4 M	Y	2	Paradowski,M	
25.730	814535	5.7	B	100	7				0.050	B		7	3.0C	N	1	Ruiz,J	
25.73	814536	5.3	B	M	3				0.05	R		20				Nesterov,Yu	
25.733	814537	6.0	M	100	60	0			0.070	R	14	20	4.0MT	Y	1	Luga,M	
25.736	814538	5.5	B	100	4				0.064	R	6.3	10	4 M	Y	2	Paradowski,M	
25.74	814539	5.7	M	M	20	6			0.04	B		12				Maydik,A	
25.743	814540	5.4	B	100	7.7	4			0.08	B		10	4 M	Y	2	Paradowski,M	
25.750	814541	4.7	S	100	6				0.050	B		7	4.5	N	1	Lunde,R	I
25.750	814542	5.9			5				0.080	B		15	3	Y	2	Nagele,A	J
25.757	814543	5.4	B	100	4				0.05	B		7	4 M	Y	2	Paradowski,M	
25.76	814544	4.8	B	E	10	5			0.05	B		7				Mormil,V	
25.799	814545	5.2	M	100					0.05	B		12		Y	1	Tanti,T	K
25.81	814546	4.6	S	100	9.5	4	0.30	68	0.125	R	5	32	4.3	N		Clark,M.L	
25.813	814547	5.6	M	100	20	5			0.050	B		16	4.5C	N	1	Lozano,L	
25.832	814548	4.5	B	100	9				0.114	N	8.7	100		Y	1	Rodriguez C.,J.A	H
25.85	814549	5.5	S	DCS 6B	5	8			0.050	B		10	4 MC	N	1	van Loo,F.R	
25.88	814550	5.4							0.034	B		9				Pereira,A	L
25.965	814551	5.1	S	100,101	14	4			0.035	B		7	4.5M	N	4	Morrison,W	
25.979	814552	5.4	S	100	4.6	7			0.203	N	6	101	4.5M	Y	1	Budak,D.M	
25.985	814553	4.3	S	100	9	3			0.05	B		10	4 M	Y	1	Bouse,R.R	M
25.990	814554	4.8	M	100	10.0	7	0.4	55	0.05	B		7	5.0	Y	1	DeYoung,J.A	N

NOTE A (Observer gave limit as 8.5. Ed.)

NOTE B (PA value appears to be measured incorrectly. Ed.)

NOTE C Strong moonlight. SAO 146160 comparison star.

NOTE D Clear skies, moonlight, street lights.

NOTE E 95% moon 88 degrees away.

NOTE F Good see.

NOTE G Bright moon. (Translated by IHW staff. Ed.)

NOTE H Moon.

NOTE I Strong moon.

NOTE J (Observer indicated "A" method [Argelander?]. Ed.) Comparison star is 60 Aqr.

NOTE K Clouds.

NOTE L Moonlight.

NOTE M Hazy sky.

NOTE N Jets?

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
25.024	830577	0.6	0.203	R	13	85,150	10	4.0	1	Fox,J.H	A
25.995	830578	0.15	N	8		64, 98,160	56			Robotham,R	

NOTE A Two brighter "wisps" extending E away from nucleus, but not contacting it. Three faint stars in E coma.

DATE: 26 DEC 1985

DATE: 26 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
26.00	814555	4.7	S	AAVSO	8	5			0.050	B		10				Bortle, J.E	A
26.01	814556	4.1	S	AA	18	5			0.035	B		7				Green, D.W.E	B
26.010	814557	5.6	B	100	10	1	0.40	57	0.05	B		7	3.8	Y	1	Lalret, R	
26.03	814558	4.1	S	AA	18	7			0.050	B		7				Green, D.W.E	B
26.069	814559	5.5	M	4A	4.7	6			0.06	B		20	4.4MC	N	1	de la Rosa Jr, A	C
26.104	814560	5.6	B	100		4			0.050	B		10	4.5M	Y	1	Stapleton, J	D
26.11	814561	4.1	S	100	20	5	0.75	65	0.080	B		11	4.3	Y	1	Spratt, C.E	E
26.11	814562	4.2	S	100	20	6	1	65	0.140	SM	3.6	28	4.3	Y	1	Spratt, C.E	F
26.125	814563	6.2	S	4A	5	3			0.080	B		11	8	Y	4	Pryal, J	G
26.2500	814564	4.7	M	4A	8	6			0.05	B		7	5.0	Y	1	Cook, A.J	H
26.257	814565	4.9	S	100	12	5	0.58	70	0.07	B		10	5.0	Y	1	Kobayashi, J	
26.385	814566	5.2	M	100	8	6			0.030	B		8	4.0M	Y	2	Kato, T	
26.39	814567	4.7	S	4A	12	5	0.25		0.08	B		11	4.0	N	3	Momose, M	I
26.410	814568	5	M	100	10	6			0.035	B		7	3	Y	1	Watanabe, H	
26.413	814569	5.0	M	100	10	6			0.035	B		7	5	Y	1	Watanabe, A	
26.49	814570	4.8	S	100	3	5			0.07	B		10	3.5M	Y	1	Yasuki, M	
26.65	814571	6.0			3				0.045	B		7	3.5M	Y	1	Spell, J	J
26.700	814572	5.7	S	SAC					0.31	N	5	31				Ciampaolo, G	
26.712	814573			100	5	4			0.064	R	6.3	20	3.5MC	N	1	Maciejewski, W	
26.722	814574	4.9	S	100	6.7	6			0.050	B		7	4.0CM	N	1	Piccinini, M	
26.723	814575	5.3	M	100		8			0.030	B		8	4.5M	Y	1	Villa, M	
26.73	814576	5.6	B	DCS 7		6	1.0	75	0.080	B		11	M	N	3	Both, S.J.J	
26.733	814577			100	19				0.030	B		8	4.5M	Y	1	Villa, M	
26.74	814578	5.5	B	AA	13	6			0.050	B		7	4.5M	N		Schmeer, P	
26.760	814579			100		7			0.05	B		10	4.5M2	Y	1	Melandri, F	X
26.760	814580	4.4	S	100	11	6			0.080	B		20	4.0MC	N	5	Meozzi, D	
26.792	814581			100		4			0.07	B		10	3.0	N	1	Decocinck, M	L
26.865	814582	6.3	M	CZ	16				0.05	B		7	4.7CM	Y	1	Kourimsky, M	
26.93	814583	4.0	M	AA	13	7			0.080	B		20				Green, D.W.E	B
26.93	814584	4.1	S	AA	15	7			0.050	B		7				Green, D.W.E	B
26.93	814585	4.1	S	AA	13	7			0.080	B		20				Green, D.W.E	B
26.967	814586	6.5	B	9		1		310	0.05	B		10	2.5	Y	3	Rodriguez, V	M
26.999	814587	5.7	M	100			1.25		0.050	B		7		Y	4	Torres, E	N

NOTE A Moonlight.

NOTE B Coma diameter approximate.

NOTE C Clear skies, moonlight, street lights.

NOTE D Full moon, high clouds.

NOTE E Moon!

NOTE F Fan-shaped tail despite moon.

NOTE G Bazy - fog, and near full moon.

NOTE H Moon bright.

NOTE I Bright moon. (Translated by IHW staff. Ed.)

NOTE J Full moon.

NOTE K Veiled sky.

NOTE L Moon.

NOTE M The valley - Caracas.

NOTE N Dust tail 35 arc min. (Observer gave limit as 7.5. Ed.)

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
26.002	830579		0.050	B		7	25		3	Cifuentes, E	A
26.032	830580		0.254	N	6	48	22	3.0	6	Troiani, D.M	B
26.997	830581	0.21	0.203	R	13	110				Phillips, J	C

NOTE A Gas tail visible, length estimate 1 degree 30 arc min., long and very straight. So-called dust tail very diffuse, toward Se [sic]. Bright central condensation, bright coma, very visible. Brighter than the preceding day. (Observer gave limit as 8.5. Translated by IHW staff. Ed.)

NOTE B Seeing (1-3): 2. Sky darkness (1-5): 1. DC = 5.

NOTE C City lights. Still a fuzzy oval elongated east-west with central condensation. No definite tail visible. Only magnitude 3.0 visible with naked eye due to light pollution. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 27 DEC 1985

DATE: 27 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	
27.056	814588			100	12	1	0.33	57	0.05	B		7	3.7			Lairret,R		
27.068	814589			100		3	0.25	64	0.05	B		7	4.5		1	Benavides,A		
27.0938	814590	4.8	S	DCS	8	5	0.15	68	0.080	B		20	4.5		3	Machholz,D	A	
27.0979	814591	4.9	S	DCS	10	6	0.22	68	0.152	N	8.0	76	4.5		3	Machholz,D	A	
27.10	814592	5.2	M	100		7	0.5		0.080	B		20	3.5M	Y	14	Morris,C.S		
27.11	814593	5.2	M	100		6			0.050	R		8	3.5M	Y	14	Morris,C.S		
27.18	814594	4.8	M	100					0.05	B		10	5.0M	Y	2	Hale,A	B	
27.385	814595	5.0	M	100	9	7			0.030	B		8	4.0M	Y	2	Kato,T		
27.39	814596	4.7	S	4A	8	6	0.13		0.08	B		11	4.5	N	3	Momose,M	C	
27.40	814597	5.7	B	100	4.5	8	0.3	80	0.05	B		7	4.0M	N	1	Kasai,K		
27.403	814598	5.0	B	100					0.035	B		7			1	Okada,M	D	
27.420	814599	5.0	M	100	6.2	6			0.12	N	6	36	3.0C	N	1	Kishi,A		
27.424	814600	5.2	M	100	8	5			0.035	B		7	3	Y	1	Watanabe,H		
27.427	814601	5.2	M	100	10	5			0.035	B		7	3	Y	1	Watanabe,A		
27.472	814602	5.6	S	100	5.3	2			0.05	B		10		Y	1	Tregaskis,T.B	E	
27.476	814603	6.1	B	100					0.07	B		10	2.5M	Y	1	Date,M		
27.50	814604	4.5	V	M						EY						Poroshin,A		
27.58	814605	5.8	B	M					0.05	B		7				Ponomarev,E		
27.663	814606	5.7	B	100					0.05	B		7	4.5CM	Y	1	Kukkonen,I.T		
27.667	814607	6.2	M	4A	15	5			0.150	N	5.3	45	5.2	Y	1	Wikholm,L		
27.684	814608	5.1	B	100	5.4	5			0.080	R	15	39	3.5MC	Y	1	Szulc,M		
27.688	814609				1.8	5	0.1	60	0.076	R	16	139	4.5CM	Y	1	Kukkonen,I.T	F	
27.690	814610	5.9	S	100	12	6	0.33	70	0.485	N	4.3	115	4.0	N	1	Moeller,M	G	
27.698	814611	5.8	B	CZ	8	8			0.10	O		25	5.5MC	Y	1	Mick,I		
27.71	814612	5.8	B	DCS 6B	13	4			0.063	B		8	4	CMT	N	1	Geenen,J.J	
27.719	814613	5	M	CZ					0.10	B		25	3.5MC	Y	1	Valasek,V	H	
27.721	814614	4.6	S	100	8.2	6			0.05	B		10	2.5M	N	1	Hurst,G.M	I	
27.722	814615	5.7	B	100	2	6			0.050	B		16	4.4	Y	1	Castino,R	G	
27.722	814616	6.3	B	100	2	7			0.113	N	8	22	5.0M	Y	1	Schambeck,C.M		
27.722	814617	5.7	M	100	8	3			0.09	M	11	56	3.5M	Y	2	Westlund,M		
27.725	814618				5.8	6			0.08	B		15	2.5M	N	1	Hurst,G.M	I	
27.726	814619	5.0	S	100	3.3	5			0.063	R	13.3	53	2.5C	N	1	Skjaeraasen,O	J	
27.73	814620	4.5	S	DCS 7		6			0.018	B		3	4	MTC	Y	5	Bus,E.P	
27.73	814621	4.5	S	DCS 7	12	6			0.040	B		7	4	MTC	Y	5	Bus,E.P	
27.733	814622	5.7	B	100	8	6			0.080	R	5	22	CM	Y	2	Jannink,D.W	K	
27.733	814623	6.0	M	100	5.6	5	0.1	20	0.07	B		16	5.0CM	Y	1	Taylor,M.D	L	
27.736	814624	6.2	B	100		7			0.06	R	8	15	5.0M	Y	1	Schambeck,C.M		
27.74	814625	4.7	S	100					0.08	B		20	4.0		3	Shanklin,J.D		
27.74	814626	5.4	B	100					0.05	B		10	5	M	N	8	Bouma,R.J	
27.74	814627	5.0	S	100	5	7	1.0	70	0.05	B		10	5	M	N	8	Bouma,R.J	M
27.740	814628	5.5	B	CZ	20	5			0.04	B		7	5.8	Y	1	Brancik,K		
27.744	814630	4.3	S	100	7	7	0.06	85	0.21	N	5	37	5.0CM	Y	1	Taylor,M.D	N	
27.750	814631	4.5	S	100	7.5	5			0.08	B		11	3.5	Y	1	Gainsford,M.J	O	
27.750	814632	4.7	S	100	9	6			0.080	B		20	3.8MC	N	5	Meozzi,D		
27.75	814633	4.7	S	DCS 7	1.8	9	0.12	65	0.05	B		10	4.3M	Y	3	Abbott,J	P	
27.750	814634	5.3	S	100	6	5			0.050	B		10	M	N	1	Aerts,L		
27.75	814635	5.5	S	DCS 6B		8	0.1	20	0.04	B		8	5.0CM	Y	1	Taylor,M.D	Q	
27.751	814636	4.8	S	100	4.2	7			0.050	B		10	4	MC	N	1	van Loo,F.R	
27.757	814637	5.3	S	100	8	6	0.17	60	0.065	B		60	3.5	Y	1	Gainsford,M.J	O	
27.760	814638	4.5	B	100	20	5	0.42		0.102	R	14.7	60	4.5	N	3	Foulkes,M	R	
27.764	814639	5.1	S	100	4	4	0.53	60	0.050	B		10	5.0		3	Medway,K	S	
27.767	814640	5.7	M	100					0.060	R	4.5	10	4.0M	Y	1	Rogers,J.H	T	
27.77	814641	4.0	S	DCS 7	14	5			0.046	R	4	8	5.5M	Y	1	Chodorowski,F	U	
27.77	814642	4.0	S	DCS 7	12	7	2.5	51	0.060	B		12	5.5M	Y	1	van de Weg,R.L.W		
27.771	814643	6.0	M	100	25	4			0.067	R	12	60	4.5M	Y	1	van de Weg,R.L.W	V	
27.777	814644	5.8	B	100	2.7	6			0.330	N	4.5	59	4.2	Y	1	Kosinski,J	G	
27.795	814645	4.6	S	100	6.8	6			0.05	B		10	3.5M	Y	1	Castino,R		
27.799	814646	5.8	M	CZ	25	3			0.05	B		7	4.5M	Y	1	Hurst,G.M	I	
27.802	814647				5.8	6	0.4	67	0.08	B		15	3.5M	Y	1	Hajek,P		
27.813	814648	5.9	B	55	15	5			0.102	R	14.7	60		Y	1	Hurst,G.M	W	
27.850	814649	5.2	B	4A	15	7			0.06	R		15	4.5	Y	1	Medway,K	X	
27.890	814650	5.3	B	4A	15	6			0.05	B		10	4.5	Y	1	Ward,A	Y	
27.94	814651	4.0	S	AA	15	7	1		0.080	B		20				Ward,A	Y	
27.95	814652	4.0	S	AA	15	7	1		0.035	B		7				Green,D.W.E	Z	
27.96	814653	3.9	M	AA	15	7	1		0.050	B		7				Green,D.W.E	Z	
27.96	814654	4.2	S	AA	15	7	1		0.050	B		7				Green,D.W.E	Z	
27.969	814655	4.8	M	100		5	0.2	50	0.05	B		7	5.0	Y	3	Green,D.W.E	Z	
27.978	814656	5.3	S	100	9.5	4			0.035	B		7	4.7M	N	3	DeYoung,J.A		
27.98	814657	4.4	M	AA	9	8			0.203	N	6	38				Morrison,W		
27.98	814658	4.5	S	AA	9	8			0.203	N	6	38				Green,D.W.E	M	
27.99	814659	4.7	S	AAVSO	7	6			0.050	B		10				Green,D.W.E	M	
27.99	814660	4.8	S	AA	7	8			0.229	R	12	86				Bortle,J.E	Q	
																Green,D.W.E	M	

NOTE A 994 moon 112 degrees away.

NOTE B Observation affected by full moon and scattered thin cirrus.

NOTE C Bright moon. (Translated by IHW staff. Ed.)

NOTE D Full moon. (Translated by IHW staff. Ed.)

NOTE E (Observer gave limit as approximately 8.0. Ed.)

NOTE F Coma diameter determined as an average of five transit time observations.

NOTE G Moon.

NOTE H Adapted to the actual (rather bad, street lights visible) observing conditions.

NOTE I Full moon and cirrus.

NOTE J Severe light pollution made the background sky awfully bright, and in addition, thin clouds made it difficult/impossible to see the outer parts of the coma.

NOTE K Telescopic limit is 7.5.

NOTE L Moonlight. Antoniadi II.

NOTE M Coma diameter approximate.

NOTE N Seeing Antoniadi II. Moonlight.

NOTE O Moon and cloud.

NOTE P Comparison stars 5.3, 4.7, 5.0, 4.0. Moonlight.

NOTE Q Moonlight.

NOTE R Moon up.

NOTE S Full moon, drifting thin clouds interfered. (Observer gave limit as 11.0. Ed.)

NOTE T Coma roughly circular, tail very faint, straight, length approximate. Moon.

NOTE U Clouds.

NOTE V Many details, (rays/envelope) in inner coma in 0.100 Newtonian at magnification of 129. Within 0.5 hour clear changes in position of the rays.

NOTE W Tail length uncertain. Field very low.

NOTE X Full moon. (Observer gave limit as 11.5. Ed.)

NOTE Y Misty near horizon.

DATE: 27 DEC 1985

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NOTE 2 Coma diameter and tail length approximate.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
27.002	830582		0.050	B			25	7.5	3	Cifuentes,E	A
27.715	830583	0.6	0.11	R	11	30, 70	20	5.5	1	Adamoli,G	B
27.719	830584	1.6	0.090	M	11	56	10	3.5	2	Westlund,M	C
27.739	830585	0.48	0.063	R	13.3	34, 53, 120	10	2.5	1	Skjaeraasen,O	D
27.748	830586	0.21	0.203	SC	10	80, 220	14	4.5	2	Foulkes,M	E
27.785	830587	0.4	0.254	N	6.4	41	10	4.3	3	Abbott,J	F
27.825	830588	2	0.05	R	7	25, 30, 40	25	4.0	1	Kopp,M	G
27.949	830589	1	0.100	B	4	14	23	6.0	2	Nowak,G.T	H

NOTE A Two tails visible, a gap in "V" (shape). Gas (tail) much longer. Lengths: gas, 1 deg. 15'; dust, 35'. Dust tail has attained approximately half the length of the gas tail. Lengths: gas, 1 deg. 15'; dust, 35'. (Translated by IHW staff. Ed.)

NOTE B Tail at PA 45.

NOTE C Full moon.

NOTE D Lumicon Deep Sky filter used. Moist, no wind, -12 C, turbulence, severe light pollution. Very thin fog-like clouds caused much of the bad seeing. Halley looked totally circular, no tail was observed, and the changes of brightness outwards from the almost star-like central condensation were very smooth/gradual.

NOTE E Coma 5'x4', DC = 8. Coma centre star-like. At a first glance the coma appeared circular. However an elliptical extension was seen using averted vision. Tail faint. Seemed to have a brighter spike along its centre line. Very faint structure (jet???) [sic] glimpsed at PA 120 deg.

NOTE F Moonlight interfered with the observation. Central condensation near stellar. Forward projection at PA 265 deg., approximately 1.2 arc min. Tail spans PA 53 deg. through 56 deg., approximately 3.2x10.4 arc min. Semi latus rectum approximately 2.4 arc min. (both). Vertex distance 2.8 arc min. Near stellar central condensation dominating the coma. Southern edge of tail better defined than the indistinct northern edge. A forward projection in PA 256 deg. appeared from the coma.

NOTE G Stability of star image: good; temperature: -2 deg. C. Tail: more regular structure, bright, though moonlight. Vertex distance: V = 13.5'. Semi latus rectum: P1 = 11.0', P2 = 10.5'. Tail PA = 47 deg. Coma less diffuse. Moonlight interfered with the observation.

NOTE H Gas tail at PA 0, dust tail at PA 320.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Ryp	Gdng	Id/Typ	Site	Observer(s)	Notes
27.681	850539	0.950	4.7	0.20	2.2 x 1.4	1.00	Kodak 2415		Y		9/P	1	Conrad,R	A
27.863	850540	0.500	8		4.1 x 2.7	2.00	Fujichrome	400/27	N	O	3/S	2	Townsend,R	

NOTE A City lights interfered with the observation; Vienna, from room!



DATE: 28 DEC 1985

DATE: 28 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
28.024	814661	6.0	B	100	10	5			0.06	R	8.3	30	3.8	N	1	Fox, J.H	A
28.05	814662	5.5	B	100	10	6			0.080	B		20	4.0	Y		Kronk, G	B
28.056	814663	5.6	B	100	8	2	0.67	54	0.05	B		7	4.0			Laird, R	
28.09	814664	4.9	M	100		7	1.25	68	0.080	B		20	4.0M	Y	14	Morris, C.S	
28.09	814665	5.0	B	100		7			0.080	B		20	4.0M	Y	14	Morris, C.S	
28.095	814666	5.6	B	100	6	7			0.05	B		11	4.0	N	2	Saxon, V.P	C
28.38	814667	4.6	S	4A	9	7			0.08	B		11	4.5	N	3	Momose, H	D
28.389	814668	5.0	M	100	7	7			0.030	B		8	3.5M	Y	2	Kato, T	E
28.39	814669	5.1	S	AAVSO	6	5	0.33	65	0.13	N	6.3	24	4.0M	Y	1	Hayashi, A	
28.39	814670	5.2	M	100	3.5	7			0.08	B		11	4.5MC	Y	1	Mitsuma, S	
28.39	814671	5.0	B		10	6			0.05	B		10	4.0	N	1	Uda, K	
28.39	814672	4.5				6			0.08	B		11	5.0	Y	2	Nashi, S	F
28.396	814673	5.6	B	100	5	4			0.108	N	4	16	5.5MT	Y	2	Turner, N	
28.403	814674	5.0	S	100	7	5	0.17	80	0.07	B		10	2.5	Y	1	Kobayashi, J	
28.403	814675	5.5	B	100					0.07	B		10	4.0CM	Y	2	Date, M	
28.423	814676	5.2	B	100		7			0.050	B		7	2.9	Y	3	Bembrick, C	
28.441	814677			100	10	4			0.10	N	6	32	3.0M	Y	2	Moriya, M	G
28.458	814678	5.6	S	100	6	2			0.05	B		10		Y	1	Tregaskis, T.B	H
28.47	814679	4.8	S	100	5				0.07	B		10	4.0M	Y	1	Yasuki, M	
28.489	814680	5.0	S	100	10	3			0.050	B		12	4.0	Y	1	Batza, H	I
28.50	814681	5		100	10				0.080	B		11	2 MC	N	3	Watanabe, N	J
28.57	814682	5.4	B	M	5	4	2	60	0.05	B		7				Guryanov, S	
28.677	814683	6.5	B	100					0.04	B		8	3.0C	N	1	Czerniewski, W	
28.694	814684	5.6	B	100	4	6			0.063	R	13.3	21	5.5M	Y	1	Pilski, A	
28.696	814685	4.6	S	100	17	7	1	70	0.050	B		7	4.4	Y	2	Moeller, M	I
28.721	814686	5.2	M	AAVSO	7	7			0.063	R	13.3	52				Kosa-Kiss, A	K
28.733	814687	5.4	M	100	7	4			0.03	B		8	4.5M	N	2	Taylor, M.D	L
28.735	814688	5.8	B	55	12	5			0.102	R	14.7	60		Y	1	Medway, K	M
28.74	814689	5.4	S	100					0.08	B		20	5.3		3	Shanklin, J.D	
28.74	814690	5.4	S	100					0.05	B		7	5.3		3	Shanklin, J.D	
28.74	814691	5.0	S	100					0.05	B	14.7	60	5.3		3	Shanklin, J.D	
28.777	814692	4.5	B	100	25	5	1		0.080	B		11		Y		Medway, K	N
28.788	814693	4.8	S	100		6			0.050	B		7	4.0	N	1	Lunde, R	O
28.792	814694	5.5	B	4A					0.050	B		7	5.5	Y	1	van der Mey, L	
28.796	814695	4.7	S	100		6		75	0.08	B		11	4.8	Y	1	Gainsford, M.J	P
28.801	814696	4.5	S	100	3.3	6		75	0.25	N	6	60	4.8	Y	1	Gainsford, M.J	Q
28.803	814697	5.2	B	4A	15	7			0.05	B		10	5	Y	1	Ward, A	
28.826	814698	5.6	M	100	5.8	5	0.1	50	0.07	B		16	5.0CM	Y	1	Taylor, M.D	R
28.93	814699	4.4	S	AA	14	7			0.035	B		7				Green, D.W.E	S
28.94	814700	4.5	M	AA	8	8			0.229	R	12	86				Green, D.W.E	S
28.94	814701	4.7	S	AA	8	8			0.229	R	12	86				Green, D.W.E	S
28.95	814702	4.2	S	AA	14	7	1		0.050	B		7				Green, D.W.E	T
28.96	814703	4.2	M	AA	12	7	1		0.080	B		20				Green, D.W.E	T
28.96	814704	4.5	S	AA	12	7	1		0.080	B		20				Green, D.W.E	T
28.965	814705	5.0	S	100	12	4	0.25	70	0.035	B		7	5.3M	Y	3	Morrison, W	
28.968	814706	5.6	M	100			1.43		0.050	B		7		Y	4	Torres, E	U
28.972	814707	5.6	S	100	4.4	7	0.1	70	0.203	N	6	101	5.0	Y	1	Budak, D.M	V
28.99	814708	4.7	S	AAVSO	7	6		60	0.050	B		10				Bortle, J.E	W

NOTE A Strong moonlight. SAO 146004 comparison star.

NOTE B Clouds and moon.

NOTE C City lights and moon.

NOTE D Bright moon. (Translated by IHW staff. Ed.)

NOTE E Diffuse cloud.

NOTE F Coma diameter 10 arc min. &lt;. [sic] (Observer indicated "Y" method. Ed.)

NOTE G Seeing 3/5.

NOTE H Cloudy and twilight. (Observer gave limit as approximately 7.5. Ed.)

NOTE I Moon.

NOTE J (Observer indicated "F" method. Ed.)

NOTE K Naked eye.

NOTE L Moon. Antoniadi III.

NOTE M Gibbous moon and comet in clear sky. (Observer gave limit as 11.5. Ed.)

NOTE N Gibbous moon rising in NE sky. (Observer gave limit as 10.5. Ed.)

NOTE O Moon strong.

NOTE P Moon and cloud. Tail = 7, PA approximate.

NOTE Q Moon and cloud. Tail = 7, PA uncertain.

NOTE R Moonlight in E. Antoniadi II. Tail suspected to 0.3 deg.

NOTE S Coma diameter approximate.

NOTE T Coma diameter and tail length approximate.

NOTE U (Observer gave limit as 7.5. Ed.)

NOTE V Tail length and PA approximate.

NOTE W PA approximate. Moonlight.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
28.017	830590		0.203	SC	10	81			1	Lohvinenko, T.W	A
28.024	830591	0.6	0.203	R	13	85,225	10	3.8	1	Fox, J.H	B
28.026	830592		0.203	SC	10	169			1	Lohvinenko, T.W	C
28.965	830593		0.050	B		7	20	7.5	3	Cifuentes, E	D
28.990	830594		0.203	SC	10	70		6.0		Williams, D.J	E

NOTE A Today the nuclear magnitude is observed to be 7.6 (check star: SAO 76017) and an integrated magnitude of 5.6 (check star: 14 Piscium). The diameter of the nucleus is measured to be 20.3" and the diameter of the coma is measured to be 243.61". (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B NE tail spike seen best at 225x but glimpsed at 85x. The two S bright streaks seen only at 225x.

NOTE C A closer look at the comet shows it as a whitish-gray and a bluish white 'ion tail' at PA 51.5. The tail is straight like an arrow. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Only one tail visible, long and straight. Estimated 1 deg. 26 arc min. long. (Translated by IHW staff. Ed.)

NOTE E I can see a faint streak east of the comet. The tail is visible! The nucleus is still compact and star-like. (Duration not indicated. Time of observation is start time. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
28.954	850541	0.225	1.7	0.140	9.1 x 6.1	2.25	Kodak 2415		Y	S	7/P	1	Dilsizian, R	A

NOTE A Exposures limited below 5 minutes to allow for stellar guiding with a minimum of "proper motion" distortion in resolution.

DATE: 29 DEC 1985

DATE: 29 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	
29.000	814709	5.8	B	100					0.08	B		11	4.0	N	1	Gorski,L	A	
29.007	814710	4.7	M	100	22	7	0.6	290	0.05	B		10	6.5	Y	4	Fabre,R	B	
29.007	814711	6.0	B	100	15	6			0.06	R	8.3	10	4.0	N	1	Fox,J.H	C	
29.01	814712	5.4	B	100	13	6			0.080	B		20	4.0	Y		Kronk,G		
29.011	814713	3.5	B	100		6		66	0.05	B		20	3.5	Y	8	da Silva,L.A.L	D	
29.012	814714	4.0	B	100	3.5	3			0.06	R	12	56	5.5	Y	1	Onofre D.,D		
29.021	814715	5.6	B	100	8	1	0.53	55	0.05	B		7	6.0			Lairret,R		
29.03	814716	6.0	B	100	7.8	6	0.46	80	0.335	N	4.5	56	4.0	Y		Kronk,G	E	
29.042	814717	5.3	SAO	86					0.050	B		7		Y	1	Minton,R.B	F	
29.094	814718	5.8	S	100	8	6			0.080	B		11	3.9C	Y	1	Bailey,G		
29.38	814719	4.5	S	4A					0.08	B		11	4.5	Y	3	Momose,M		
29.40	814720	5.4	M	100	5.9	7	0.42	65	0.08	B		11	4.5M	Y		Mitsuma,S		
29.413	814721	5.2	B	100					0.05	B		7	4.5C	Y	1	Hayashi,H		
29.413	814722				15	5	0.33		0.12	N	6	40				Hayashi,H		
29.42	814723	4.5	S	100	10	7	1.0		0.08	B		15	5.3TC	Y	1	Lovejoy,T		
29.43	814724	5.3	S	AAVSO	4	5			0.13	N	6.3	24	3.0M	Y	1	Hayashi,A		
29.44	814725	4.3	S	100					0.025	B		3	5	Y	1	Seargent,D		
29.44	814726						0.6	70	0.08	B		15				Seargent,D		
29.445	814727	5.2	S	100		7			0.05	B		10	5.0	Y	1	Williams,P.F		
29.448	814728	5.0	M	100	6				0.13	N	6	47	4.0	Y	1	Ichikawa,K		
29.450	814729				5	9	0.1	90	0.15	N	8	50	5.0	Y	1	Williams,P.F		
29.47	814730	4.7	S	100	5				0.07	B		10	3.5M	Y	1	Yasuki,M		
29.50	814731	5.8	B	M					0.05	B		7				Konstantinov,S		
29.56	814732	5.7	B	M					0.05	B		7				Ponomaryov,E		
29.67	814733	4.8	B	E	12	5			0.05	B		7				Mormil,V		
29.70	814734	5.3	B	M	13	2			0.07	N	8	33				Shitikov,A		
29.72	814735	5.0	M	100	15	6			0.06	R	4	10	5.0	Y	3	Granslo,B.H	G	
29.72	814736	5.7	S	DCS 7		6	0.67	80	0.080	B		11		Y	3	Both,S.J.J		
29.720	814737	5.1	M	100	18	8			0.030	B		8	5.0	Y	5	Villa,M		
29.725	814738	4.6	S	100	6.7	7			0.05	B		10	4.0T	N	1	Hurst,G.M		
29.73	814739	5.5	S	100					0.08	B		20	5.3		1	Shanklin,J.D		
29.73	814740	4.3	S	DCS 7	15	5	2	70	0.040	B		7	5.5	Y	7	Bus,E.P	H	
29.73	814741	4.9	B	DCS 7					0.040	B		7	5.5	Y	7	Bus,E.P		
29.73	814742	5.2	B	M					0.03	B		8				Tsygankov,D		
29.732	814743				6.7	7	0.50	70	0.08	B		15	4.6	Y	1	Hurst,G.M		
29.738	814744	5.0	B	4A	20	7			0.05	B		10	5	Y	1	Ward,A		
29.740	814745	4.6	S	100	7.5	6		75	0.08	B		11	5	Y	1	Gainsford,M.J		
29.740	814746	4.7	M	100		7			0.089	R	13.7	32	C	Y	1	Linger,S	I	
29.742	814747	5.1	B	4A	20	7			0.06	R		15	5	Y	1	Ward,A		
29.750	814748	5.7	B	100	3.8	6	0.08	95	0.330	N	4.5	59	4.7	Y	1	Castino,R	J	
29.7500	814749	5.7	B	100		7			0.05	B		10	5.7C	Y	2	Franciosi,C		
29.750	814750	5.7	M	100	5.5	5	0.1	40	0.04	B		8	5.3C	Y	1	Taylor,M.D	K	
29.753	814751	4.7	S	100	4	7	0.23	70	0.25	N	6	60	5	Y	1	Gainsford,M.J		
29.753	814752	5.5	S	100	6	3	0.53	60	0.050	B		10	5.6	Y	3	Rogers,J.H	L	
29.753	814753	5.8	M	100	4.1	5	0.1	40	0.07	B		16	5.3C	Y	1	Taylor,M.D	M	
29.760	814754	4.8	S	100	4.0	8	0.20	83	0.05	B		10	4.8M	Y	3	Abbott,J	N	
29.778	814755	4.5	B	100	20	5			0.102	R	14.7	60		Y		Medway,K	O	
29.79	814756	5.5			8				0.034	B		9			1	Pereira,A	P	
29.799	814757	5.2	B	4A					0.050	B		7	5.5	Y	1	van der Mey,L	Q	
29.82	814758	4.3	B	100	25	4			0.050	B		7	5.5	Y	2	Merlin,J.-C		
29.834	814759	4.6	S	100	6.7	7			0.05	B		10	3.0	Y	1	Hurst,G.M	R	
29.84	814760	5.0	S	DCS 8	4	7			0.050	B		10	3.5MC	N	1	van Loo,F.R		
29.95	814761	4.3	M	AA	13	7	1		0.050	B		7				Green,D.W.E	S	
29.95	814762	4.5	S	AA	13	7	1		0.050	B		7				Green,D.W.E	S	
29.955	814763	5.3	M	100	5.5	8	0.5	90	0.203	N	8	128	5.0	Y	1	Hannon,J		
29.96	814764	4.3	M	AA	15	5			0.035	B		7				Green,D.W.E	H	
29.96	814765	4.2	S	AA	15	5			0.035	B		7				Green,D.W.E	H	
29.96	814766	4.4	S	AA	10	7	1		0.080	B		20				Green,D.W.E	S	
29.972	814767	5.7	S	100	4.3	7	0.17	70	0.203	N	6	101	5.0	Y	1	Hudek,D.M	T	
29.975	814768	5.6	B	100		4	0.28	79	0.05	B		7	5.0	N	3	Benavides,A		
29.98	814769	4.5	M	AA	6.5	8			0.203	N	6	38				Green,D.W.E	H	
29.98	814770	4.8	S	AA	6.5	8			0.203	N	6	38				Green,D.W.E	H	
29.986	814771	5.3	B	100					0.050	B		10	5	C	Y	1	Robinson,R.L	
29.986	814772	6.0	B	100					0.080	B		20	6.0	Y		Smith,D		
29.99	814773	4.8	S	AAVSO	9	6	0.8	55	0.050	B		10				Bortle,J.E		
29.99	814774	4.9	S	AA	10	8			0.229	R	12	86				Green,D.W.E	H	
29.993	814775					5			0.05	B		20	4.0	Y	8	da Silva,L.A.L	U	
29.993	814776	4.0	B	100		3			0.06	R	12	56	5.5	Y	1	Onofre D.,D		
29.997	814777	5.7	M	100			1.25		0.050	B		7		Y	4	Torres,E	V	

NOTE A Intermittent clouds.

NOTE B (PA value appears to be measured incorrectly. Ed.)

NOTE C SAO 146074 comparison star.

NOTE D Clouds and moonlight.

NOTE E Some moonlight.

NOTE F Used 7x50 binoculars out-of-focus. Estimated comet Halley to be halfway between Pi Aqu (SAO 127520) and 60 Aqu (SAO 146160).

The first = 4.6 and the second = 5.9.

NOTE G Coma diameter uncertain.

NOTE H Coma diameter approximate.

NOTE I Clear. (Observer gave limit as 9.5. Ed.)

NOTE J Moon.

NOTE K Antoniadis II. Tail fanned.

NOTE L Coma slightly pear-shaped; tail very faint, broad.

NOTE M Tail fanned.

NOTE N Comparison stars 5.3, 4.7, 5.0, 4.0. Tail length and PA approximate. Moonlight.

NOTE O Slight mist. (Observer gave limit as 11.5. Ed.)

NOTE P (Observer gave limit as 8.6. Ed.)

NOTE Q First time seen with naked eye.

NOTE R Field very low.

NOTE S Coma diameter approximate. Tail length is lower limit.

NOTE T Tail length and PA approximate.

NOTE U Clouds (cumulus).

NOTE V (Observer gave limit as 7.5. Ed.)

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
29.003	830595	0.6	0.203	R	13	85,225	10	4.0	1	Fox,J.H	A
29.729	830596	0.25	0.356	SC	11	200			1	Verdenet,M	B
29.733	830597	3.64	0.050	B		12	50	6.5	2	Pesci,S	C

DATE: 29 DEC 1985

DATE: 29 DEC 1985

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
29.740	830598	0.4	0.254	N	6.4	41	20	4.8	3	Abbott,J	D
29.742	830599	0.22	0.298	N	5	40, 65,269	27	6.0	1	Stott,D	E
29.747	830600	0.11	0.125	N	5.8	28, 40, 60	52	4.0	1	Riccabone,G	F
29.766	830601	0.37	0.406	N	5	68	5		2	Farroni,G	G
29.782	830602	2.0	0.08	B		15	179	4.6	1	Hurst,G.M	H
29.997	830603	0.46	0.200	N	8	81,130	20	5	1	Robinson,R.L	I
29.998	830604		0.050	B		7	15	7.5	3	Cifuentes,E	J

NOTE A Tail extension visible in both 0.203 m and 0.060 m finder at about PA 100. Coma brighter along W edge. Nucleus more condensed than recent nights. Central spike seen only at 225x.

NOTE B (Duration not indicated. Time of observation is assumed to be start time. Additional drawing submitted made using 11x80 binoculars (2"/mm). Ed.)

NOTE C About 1.9 deg. of tail easily visible through binocular. Total coma magnitude 4.5; DC 7/8. Comet easily visible naked eye at 15 deg. above horizon. Jet at PA 66. No other feature recorded.

NOTE D Moonrise as twilight ended. Moonlight and twilight interfered with the observation. Central condensation near stellar. Southernmost forward projection at PA 259 deg., approximately 1.0 arc min. Northernmost forward projection at PA 299 deg., approximately 1.6 arc min. Southernmost tail section at PA 75 deg., approximately 4.0 arc min. Central tail section at PA 69 deg., approximately 7.6 arc min. Northernmost tail section at PA 56 deg., approximately 12.8 arc min. Root tail width approximately 3.6 arc min. Semi latus rectum (northward) 2.4 arc min. Semi latus rectum (southward) 2.0 arc min. Vertex distance 2.4 arc min. Near stellar central condensation dominating the appearance of the coma. Asymmetrical coma about two axes and nonregular coma about edge - two forward projections appeared at PA 259 deg. and PA 299 deg. Tail surface brightness comparable with outer coma brightness. Evidence of tail structure - a faint southernmost component in PA 75, a central section in PA 69 and a dominant 12.8' tail in PA 56.

NOTE E Tail at PA 72. Jet at PA 320. Coma is irregular in shape with a spur at PA 104 deg. Tail seems offset from central condensation.

NOTE F Strongly pronounced luminous "mustaches" at PA 130 and at PA 47. Magnifications of 80 and 144 also used. Two drawings included. Intense city lights interfered with the observation. (Translated by IHW staff. Ed.)

NOTE G Apparent dimensions of the comet 5.4'x7.2'.

NOTE H Well condensed coma with nuclear condensation offset, PA 255 from coma center. Tail clearly seen in 15x80 binoculars, but only suspected with 10x50 binoculars, as a broad straight extension to the coma in PA 70 deg., length 30'. Coma diameter 6.7', DC 7.

NOTE I The central condensation was almost nonexistent. The coma simply gradually brightened toward the central region. A dark lane in the tail just behind the head appeared briefly and then was not seen again.

NOTE J Gas tail straight, easily visible (especially in the first third). Not able to see dust tail. Estimated length 1 deg. 15'. Positioned at low altitude above horizon. (Translated by IHW staff. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
29.012	850542	1.970	5.5	0.355	1.0 x 0.7	4.50	Kodak 2415		Y	O	14/P	1	Crist,M	A
29.020	850543	1.970	5.5	0.355	1.0 x 0.7	10.00	Kodak 2415		Y	O	15/P	1	Crist,M	B
29.032	850544	1.970	5.5	0.355	1.0 x 0.7	12.00	Kodak 2415		Y	O	16/P	1	Crist,M	C
29.050	850545	1.583	8	0.203	1.3 x 0.9	15.00	Kodak 2415		Y	S	8/P	1	Minton,R.B	D
29.442	850546	0.180	2.8		11.4 x 7.6	10.50	Kodak 2415		Y	O	1/S	6	Garrahd,G	
29.738	850547	0.600	1.7	0.350	3.4 x 2.3	15.00	Ilford FP4	125/	N	O	1/T	1	Valisa,P	E
29.741	850548	0.500	5.6		4.1 x 2.7	8.17	Kodak Tri-X	400/	N	X	3/P	1	Ward,A	F
29.742	850549	1.780	5	0.356	1.2 x 0.8	24.00	3M 1000	1000/	N	M	1/P	1	Mobberley,M	
29.743	850550	0.058	2		34.5 x23.4	5.00	Fujichrome	400/27	N	O	4/S	2	Townsend,R	
29.748	850551	0.394	2.4	0.165	5.2 x 3.5	15.00	Kodak Tri-X		N		703/P		Soc. Astro. de France	G
29.975	850552	0.225	1.7	0.140	9.1 x 6.1	2.00	Kodak 2415		Y	S	8/P	1	Dilsizian,R	H
29.976	850553	0.050	4.0		39.6 x27.0	5.00	Kodak Tri-X		N		172/P		Gianforte,J.S	I

NOTE A Moon 3 deg. above horizon. City lights interfered with the observation. (Observer's image identifier is followed by suffix A. Ed.) Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.

NOTE B Moon 4 deg. above horizon. City lights interfered with the observation. (Observer's image identifier is followed by suffix A. Ed.) Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.

NOTE C Moon 9 deg. above horizon. Moonlight interfered with the observation. (Observer's image identifier is followed by suffix A. Ed.) Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.

NOTE D (Print submitted by observer is a composite of three 5 min. exposures; the first and second were separated by 10 min. and the second and third were separated by 1 min. Ed.)

NOTE E Instrument is Schmidt camera. Large format film used.

NOTE F UV filter used.

NOTE G Photograph made by B. Fouquet.

NOTE H Exposures limited below 5 minutes to allow for stellar guiding with a minimum of "proper motion" distortion in resolution.

NOTE I (Observer's image identifier is 107-2. Observer listed emulsion speed as ASA 800. Ed.)

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
29.981	870106	42P-O	CL	0.400	6.3		6.25	Ektachrome	400/27	N	C	16/P	1	Grieser,D	A
29.998	870107	42P-O	CL	0.400	6.3		4.00	Ektachrome	400/27	N	C	20/P	1	Grieser,D	A

NOTE A Gamma Aquarii in same field. Prism glass type uncertain. Film emulsion at ambient temperature of 0 C.

DATE: 30 DEC 1985

DATE: 30 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	
30.00	814778	6.0	B	100	10	5	0.5	75	0.15	N	8	60	5.5	Y	4	Gilchrist,D.K	A	
30.00	814779	4.5	S	100	20	7	1	110	0.203	N	7	54	5.0	Y	1	Harrington,P	B	
30.003	814780	6.1	M	100			0.83	88	0.050	B		10	5.0	Y	1	Smith,A	C	
30.007	814781	5.0	B	100	30	8	0.75	90	0.20	SC	10	77	5.5	Y	1	Hodonsky,K		
30.014	814782	6.1	B	100	20	6	2	90	0.152	R	5	24	4.7	N	1	Fox,J.H	D	
30.02	814783	5.4	B	100	8.9	8	2.0	68	0.15	N	8	30	6.1	Y	1	McBride,P	E	
30.021	814784	4.8	M	100	35	7	1.53	63	0.125	B		20	6.2	Y	1	Ariail,R.B		
30.021	814785	4.7	M	100	22	7	0.63	290	0.05	B		10	6.5	Y	4	Fabre,R	F	
30.035	814786	5.8	B	100					0.08	B		11	5.0	Y	1	Gorski,L		
30.045	814787			100		2		58	0.152	N	8	38	4.5			Lairret,R		
30.05	814788	5.5	B	100	12				0.080	B		20	4.0	Y		Kronk,G		
30.05	814789	6.1	B	100	6.8 4.5		0.48	69	0.335	N	4.5	56	4.0	Y		Kronk,G	G	
30.052	814790	6.1	B	100					0.035	B		7	5.5	Y	4	Gilchrist,D.K		
30.056	814791	6.1	SAO 86						0.050	B		7	5	Y	1	Minton,R.B	H	
30.072	814792	5.4	M	100	4.1	7	1.4	60	0.203	N	4.5	34	4.4C	N	1	de la Rosa Jr,A	I	
30.08	814793	5.2	4A		5	6	0.7	70	0.040	B		8	5.5	Y	1	Keen,R	J	
30.09	814794		4A		7	7	1.0	70	0.32	N	4	33	5.5	Y	1	Keen,R	K	
30.135	814795	6.0	S	100	36	6			0.203	SC	10	125	3.5CM	Y	1	Gronck,J.D	L	
30.351	814796	5.5	M	100	8	5	0.58	110	0.444	N	4.4	221	5.4	Y	1	Glassett,W	M	
30.406	814797	5.1	S	100	15	5	0.58	80	0.07	B		10	2.0	Y	1	Kobayashi,J		
30.42	814798	4.4	S	100		7	2.0		0.08	B		15	6.0	Y	3	Lovejoy,T	N	
30.458	814799	5.0	S	100	10	3			0.050	B		12	4.0	Y	1	Batza,R	O	
30.60	814800	5.6	B	M					0.05	B		7				Ponomarev,E		
30.663	814801	6.3	B	100					0.04	B		8	3.0C	N	1	Czerniewski,W	P	
30.68	814802	4.9	B	AAVSO	8	6	2.5	66	0.05	R	4	7				Chernis,K		
30.68	814803	5.1	B	AAVSO	5.5	6	1	66	0.20	N	4	30				Selevich,G		
30.684	814804	6.0	B	100	3	7	0.25		0.063	R	13.3	21	5.5C	Y	1	Pilski,A		
30.688	814805	5.3	B	100					0.050	B		7	5.0	Y	1	Bohme,D		
30.688	814806	5.9	M	CZ	4	8			0.055	R		12	5.4T	N	1	Silhan,J		
30.694	814807	5.5	B	100					0.050	B		10	6.0	Y	1	Trebacz,A		
30.698	814808	5.8	M	CZ	8	7			0.05	B		7	5.6	Y	1	Silhan,J		
30.701	814809	5.2	M	100					0.060	R	4.5	10	6.1	Y	1	Chodorowski,F		
30.705	814810				15 10	5	0.08	63	0.064	R	12	32	6.1	Y	1	Chodorowski,F		
30.705	814811	5.4	B	CZ	15				0.04	B		7		Y	1	Brancik,K	Q	
30.705	814812	5.2	S	100		7	0.5		0.05	B		7	6.5M	Y	1	Dziura,W		
30.705	814813	5.6	M	CZ	6	6			0.03	B		8	5.8	Y	1	Silhan,J		
30.705	814814	5.7	M	100	6.5	7	0.2	66	0.09	M	11	56	5.5	Y	3	Westlund,M		
30.708	814815	5.3	M	100					EY			6.1		Y	1	Chodorowski,F		
30.708	814816	5.4	B	100	7	4			0.08	B		10	4	C	Y	1	Paradowski,M	
30.708	814817	4.9	M	CZ	12				0.10	B		25	5	C	Y	1	Valasek,V	R
30.71	814818	5.7	B	100	3	9			0.203	SC	10	44	5.0C	Y	2	Maraziti,A	S	
30.711	814819	5.5	B	100	10.2	5			0.066	R	15.2	30	4.5	Y	1	Gora,D		
30.712	814820	5.3	M	100					0.030	B		6	6.1	Y	1	Chodorowski,F		
30.712	814821	5.6	M	CZ	6	6			0.055	R		12	5.8	Y	1	Silhan,J	T	
30.714	814822	5.5	S	100	7	8		340	0.08	B		10	5.6	Y	1	Thomas,A	U	
30.7188	814823	5.3	S	100	26	8	0.68	56	0.250	N	6	36	4.2	Y	1	Guthier,O	V	
30.719	814824								0.05	B		7	5.0C	Y	2	Maraziti,A		
30.72	814825	5.7	B	100					0.050	B		7	3.0C	N	1	Rulz,J		
30.720	814826		B	100	9				0.08	B		40				Paiko,Yu		
30.72	814827	5.3	B	M					0.089	R	5.5	18	4.2	N	1	Ventura,F	M	
30.720	814828	4.7	M	100		6			0.080	B		20	4.2	Y	1	Guthier,O		
30.721	814829	5.2	B	INW		2			0.050	B		6	5.8M	Y	2	Honko,M		
30.722	814830	6.0	M	100	30	4	1.33	45	0.10	R	10	25	4	C	Y	1	Paradowski,M	
30.722	814831			100		4			0.050	B		7	5.0	N	1	Lunde,R	X	
30.729	814832	4.8	S	100		7			0.08	B		10	4.5C	N	1	Rapavy,P	Y	
30.729	814833	5.3	M	100		6			0.067	R	12	60	5.0C	Y	1	Kosinski,J	Z	
30.736	814834	6.0	M	100	25	5	1	50	0.05	B		12	3.5	Y	1	Tanti,T	a	
30.736	814835	5.3	M	100		7		71	0.067	R	12	60	5.0C	Y	1	Niebozok,T		
30.740	814836	6.0	B	100	25	5	1	50	0.200	R	15	120	5.5	Y	1	Kalauch,K.-D		
30.743	814837	5.2	B	100	9	6	0.3	30	0.050	R	11	22	6.0	Y	1	Kliche,J		
30.750	814838	6.0			9.6 6.7	6	0.3	302	0.050	B		7	6.5	Y	2	Merlin,J.-C		
30.75	814839	4.2	B	100	20	5	1.15	51	0.050	B		7	4.6C	Y	3	Piccinini,M		
30.750	814840	4.9	S	100	7	6			0.050	B		7	5.0C	Y	1	Temprano,J		
30.758	814841	5.8	B	100		7			0.050	B		7	5.2M	N	1	Meozzi,D		
30.766	814842	4.2	S	100	8	7			0.115	N	8	45	4.5C	Y	1	van Munster,T		
30.77	814843	5.3	B	DCS 7	7	8	0.08	55	0.080	R	6.2	12	4.0	Y	1	Lieder,F		
30.771	814844	5.2	B			3			0.050	B		7	3	C	N	2	Verhoeven,P.G	
30.78	814845	4.2	B	DCS 7	11	3			0.05	B		7	5.0	Y	1	Hajek,P		
30.785	814846	5.9	M	CZ	32	4			0.063	R	13.3	44	6.0	Y	1	Bartnik,M		
30.792	814847	5.4	B		16.0	5			0.050	B		7	5.8	Y	1	van der Mey,L	b	
30.792	814848	5.0	B	4A			0.67	86	0.034	B		9				Pereira,A	c	
30.80	814849	5.3			4				0.050	B		10	3.5C	N	1	Lozano,L	d	
30.813	814850	5.5	M	100	20	5			0.035	B		7				Green,D.W.E	e	
30.94	814851	4.2	S	AA	12	6			0.050	B		7				Green,D.W.E	e	
30.95	814852	4.2	M	AA	12	7			0.050	B		7				Green,D.W.E	e	
30.95	814853	4.4	S	AA	12	7			0.080	B		20				Green,D.W.E	f	
30.96	814854	4.3	S	AA	10	7	2	56	0.050	B		7	5.1	N	3	Benavides,A		
30.963	814855	5.4	B	100		5	0.31	65	0.050	B		10	4.8C	Y	1	Robinson,R.L		
30.969	814856	5.0	B	100					0.113	N	8	45	5.0	N	3	Benavides,A	g	
30.981	814857			100	7.1 6.2	5	0.28	53	0.203	R	13	110		Y	1	Phillips,J		
30.983	814858				4.0	7			0.050	B		10				Bortle,J.E		
30.99	814859	4.7	S	AA		7	1.0	64	0.120	B	EY	20				Bortle,J.E	h	
30.99	814860	4.8	S	AAVSO		6	1.5	64	0.317	N	6	55				Bortle,J.E		
30.99	814861				4.2				0.500	N	5	96				Bortle,J.E	i	
30.99	814862				3.5		0.5	64	0.08	R	11	21	4.7C	N	1	Graves,D	j	
30.993	814864	5.0	S	4A	5.0	3			0.05	B		7	4.5			Lairret,R		
30.997	814865	5.6	B	100	8	2	0.60	58										

NOTE A Faint tail. Coma diameter, tail length and position angle are rough estimations.

NOTE B Bluish color = coma.

NOTE C Tail very faint.

NOTE D SAO 145989 comparison star.

NOTE E Nucleus undefined.

NOTE F (PA value appears to be measured incorrectly. Ed.)

NOTE G 45 deg. alt. Some moon.

NOTE H Used 7x50 binoculars out-of-focus. Magnitude was close to that of SAO 145989, RA 22h 14m, Dec. -1 deg. 50m, Mv = 6.1, SP = A2.

NOTE I Clear skies, street lights.

NOTE J Moon and cloud interference. Modified Sidgwick method used.

NOTE K Moon and cloud interference.

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NOTE L Good see.  
 NOTE M Finally a long thin tail! Nucleus seems to show envelopes being thrown off. View was limited to short intervals between clouds and even a few rain drops; the clouds covered the sky. See drawing.  
 NOTE N Tail visible in 8x30 binoculars.  
 NOTE O Moon & haze.  
 NOTE P Very bad weather.  
 NOTE Q A cloud cover came... [sic]  
 NOTE R Adapted to the actual (rather bad, street lights visible) observing conditions.  
 NOTE S Nucleus magnitude 9.7.  
 NOTE T Comet seen with naked eye?  
 NOTE U In 20x70, elongated. (Observer indicated "A" method [Argelander?]. PA value appears to be incorrect. Ed.)  
 NOTE V Core magnitude 8 to 9.  
 NOTE W A tail was suspected both at the eastern end and at the western (!) end of the coma. The western tail (?) appears as a faint glowing extension of the coma. Strong haze prevents a good estimate of its size.  
 NOTE X Faint haze.  
 NOTE Y Coma ellipt.  
 NOTE Z Tail length approximate. Smokey chimneys.  
 NOTE a Seeing good, transparency poor. Haze. Wind. Artificial light.  
 NOTE b Type I tail.  
 NOTE c (Observer gave limit as 8.6. Ed.)  
 NOTE d Fog.  
 NOTE e Coma diameter approximate.  
 NOTE f Coma diameter and tail length approximate.  
 NOTE g Observation completed 851231 at 0010. Due to clouds observations were momentarily suspended. (Translated by IHW staff. Ed.)  
 NOTE h Like slightly diffuse star.  
 NOTE i Tail only 0.3' wide!  
 NOTE j Urban city lights.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
30.003	830605	0.6	0.203	R	13	85,150,225	10	4.7	1	Fox,J.H	A
30.003	830606		0.105	N	4.2			6.0		Williams,D.J	B
30.005	830607	0.1	0.204	N	8	58,271	14	5.0	1	Robinson,P.C	C
30.024	830608	2	0.13	SC	10	32,100	30	6.0	1	Hays Jr,R.H	D
30.037	830609	0.29	0.203	N	6	38, 61,116	16	5.5	1	Williams,J	E
30.350	830610		0.444	N	4.4	44, 99	144	5.4	1	Glassett,W	F
30.700	830611	1.6	0.090	M	11	56	15	5.0	3	Westlund,M	
30.722	830612	0.05	0.100	B		25	10	3.8	1	Havrilak,M	
30.757	830613	0.05	0.100	B		25	20	3.8	1	Gojdic,S	
30.757	830614	0.25	0.356	SC	11	200	100		1	Verdenet,M	G
30.807	830615	0.05	0.83	R	19.7	800	9	4.8	3	Soc. Astro. de France	H
30.819	830616	0.04	0.83	R	19.7	800	19		3	Soc. Astro. de France	I
30.832	830617	2	0.05	R	7	40	25	4.5	4	Kopp,M	J
30.940	830618	1	0.203	SC	10	80	6	5.0	1	Farrington,W.R	K
30.983	830619	0.22	0.203	R	13	110				Phillips,J	L
30.995	830620	0.35	0.200	N	8	81,130,203	15	4.8	1	Robinson,R.L	M

NOTE A Nucleus appears wedge shaped, fanned with apex to E. "Winged" extensions best seen at 150x, but also glimpsed at 225x. Tail very visible at 85x with many streaks. UHC nebula filter used with no enhancing effect, only overall dimming of field.  
 NOTE B Halley appears as a round, fuzzy object using the 16x. The 30x gives a more impressive view. A faint tail does extend east of the comet. (Separate drawings at 16x and 30x submitted. Duration not indicated. Time of observation is start time. Ed.)  
 NOTE C Ray tail at PA 75; diffuse tail 3' length at PA 75-100; diffuse tail about 3' length at PA 50-75. Diffuse tail at PA 75-100 was much longer than tail at PA 50-75. The west quarter of the coma was the brightest. The center was highly condensed but not stellar. City lights interfered with the observation.  
 NOTE D Ray or spine N edge tail at PA 60 from 'nucleus'. NE streamer at PA 45; SE streamer at PA 120; fan or hood from PA approximately 40 to 180 vertex distance approximately 2'. 'Nucleus' was very tiny and about mag. 11.  
 NOTE E Looked basically the same as before - coma brightening towards the center. However, the impression of a tail was much stronger, though not certain. City lights interfered with the observation.  
 NOTE F Tail length 35 arc min. but clouds closed in before accurate measurement possible.  
 NOTE G (Additional drawing submitted made using 11x80 binoculars (2.0"/mm). Ed.)  
 NOTE H Jet at PA 8, 28" long; jet at PA 172, 35" long; jet at PA 217, 26" long; jet at PA 345, 25" long. Drawing made by Alain Perez.  
 NOTE I Streamer at PA 5, 42" long; streamer at PA 10, 37" long; jet at PA 32, 25" long; tail at PA 80, 60" long; jet at PA 120, 23" long; streamer at PA 145, 35" long; streamer at PA 165, 25" long; jet at PA 207, 18" long. Drawing made by Serge Thebaud.  
 NOTE J Temperature: -1 deg. C. Coma shows a weak but definite intensity peak at center. Tail bright; irregular structure at the end(!). Vertex distance: V = 14.2'. Semi latus rectum: P1 = 11.0', P2 = 10.0'. Tail PA 50 deg.  
 NOTE K Degree of condensation 5. The comet was much brighter than on the 9th when last observed. The tail now 20' long and very bright. The nucleus was very off-center in the coma and quite bright. The tail was very striking now being about 1.5 coma diameters broad.  
 NOTE L City lights. Nucleus appears stellar. Tail noted! Tail very, very faint and only glimpsed with averted vision. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE M The central condensation of the coma, in contrast to 24 hours earlier had a bright stellar appearance. My thought when first seeing the comet was that it was passing over a bright star. The northwest quadrant of the coma was noticeably brighter than the rest of the coma. The forward half of the coma was brighter than the aftward half. At times there appeared to be a distinct line of separation of the forward half of the coma from the aftward half. A narrow tail projected eastward for at least a degree.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
30.001	850554	1.970	5.5	0.355	1.0 x 0.7	10.00	Kodak 2415		Y	O	17/P	1	Crist,M	A
30.008	850555	1.970	5.5	0.355	1.0 x 0.7	1.50	Kodak 2415		Y	O	18/P	1	Crist,M	A
30.017	850556	1.970	5.5	0.355	1.0 x 0.7	20.00	Kodak 2415		Y	O	19/P	1	Crist,M	A
30.029	850557	1.970	5.5	0.355	1.0 x 0.7	5.00	Kodak 2415		Y	O	20/P	1	Crist,M	A
30.685	850558	0.500	5	0.100	4.1 x 2.7	13.00	ORWO NP 27	400/27	N	C	1/N	1	Rapavy,P	B
30.694	850559	0.750	6.3		2.7 x 1.8	20.00	ORWO	400/27	N	C	6/N		Znasik,M	C
30.703	850560	0.400	5.5		5.2 x 3.4	10.00	ORWO NP 27	400/27	N	O	11/N	1	Kamenickj',M	D
30.705	850561	1.000	5.6		2.1 x 1.4	21.00	Fomapan	400/27	N		7/N	1	Skvarka,J	E
30.707	850562	0.500			4.1 x 2.7	15.00	Fomapan F27	400/27	N	O	1/N	1	Maturkanic,M	F
30.712	850563	0.400	5.5		5.2 x 3.4	10.00	ORWO NP 27	400/27	N	O	12/N	1	Kamenickj',M	D
30.738	850564	0.400	5.5		5.2 x 3.4	24.00	ORWO NP 27	400/27	N	O	14/N	1	Kamenickj',M	D
30.770	850565	0.394	2.4	0.165	5.2 x 3.5	18.00	Kodak 2415		N		704/P		Soc. Astro. de France	G
30.970	850566	0.225	1.7	0.140	9.1 x 6.1	2.50	Kodak 2415		Y	S	9/P	1	Dilsizian,R	H
30.995	850567	0.200	4.5		10.3 x 6.9	15.00	Kodak Tri-X		N	T	2/C	1	Priester,D.C	I

NOTE A Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5. (Observer's image identifier is followed by suffix A. Ed.) City lights interfered with the observation.  
 NOTE B City lights interfered with the observation. Large format (68x87 mm) film used.  
 NOTE C Large format (11.8x8.6 cm) film used.  
 NOTE D 6x6 cm format film used.  
 NOTE E 120 size film used.  
 NOTE F Twilight and city lights interfered with the observation.  
 NOTE G Photograph made by B. Fouquet.

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NOTE H Exposures limited below 5 minutes to allow for stellar guiding with a minimum of "proper motion" distortion in resolution.

NOTE I Push processed to 800 ASA.

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DATE: 31 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	
31.010	814866	5.8	B	100	13	9	6	65	0.05	B		7	6.0	Y	11	Chmielewski,W		
31.017	814867			100	8		2	0.40	60	0.05	B	7	4.5			Lairret,R		
31.019	814868								0.362	N		7	5.5	Y	1	Stephan,C	A	
31.037	814869	5.5	M	100				1.25	0.050	B		7		Y	4	Torres,E	B	
31.052	814870	4.6	M	100	7		7	0.4	55	0.05	B	7	4.5	Y	3	DeYoung,J.A	C	
31.08	814871	4.8	4A		10		7	1.0	70	0.040	B	8	6.0	Y	1	Keen,R	D	
31.09	814872	4.7	V 4A							EX			6.0	Y	1	Keen,R		
31.10	814873	4.7	M	100			7	3.75	63	0.080	B	20	4.5	Y	7	Morris,C.S		
31.10	814874	4.0	S	100	20		6	1.25	60	0.080	B	11	4.9	Y	1	Spratt,C.E	E	
31.108	814875	4.9	B	100					0.08	B		11		Y	5	Edberg,S.J		
31.11	814876	4.1	S	100	20		6	1	60	0.140	SN	3.6	28	Y	1	Spratt,C.E	F	
31.11	814877	4.0	S	100	18		7	0.75	60	0.200	SC	10	64	Y	1	Spratt,C.E	G	
31.375	814878	4.7	S	100	4		5		0.153	N		8.6	52	Y	1	Iwaki,Y		
31.399	814879	5.1	B	100					0.07	B		10	3.7	Y	1	Date,M		
31.40	814880	5.0			25		7		0.23	B		4.4	40	Y	1	Washi,I	H	
31.401	814881	4.2	S	100	9		5	1.5	80	0.07	B	10	5.0	Y	1	Kobayashi,J		
31.41	814882	4.9	S AAVSO		6		6	0.67	70	0.13	N	6.3	24	Y	1	Hayashi,A		
31.420	814883	4.8	M	100	7		6		0.030	B		8	3.5C	Y	2	Kato,T	I	
31.43	814884	4.2	S 4A		15		7		0.08	B		11	6.0	Y	3	Momose,M	J	
31.44236	814885	5.2	B	100			5	0.33	90	0.15	N	6	28	Y	1	Okumura,S		
31.45	814886	4.6	S	100	7		7	0.5	60	0.15	N	5.3	32	Y	1	Oka,A		
31.46	814887	4.7	B		10		6	1.2	70	0.16	N	4.8	24	Y	1	Maeda,S		
31.531	814888	5.0	M	100	5.6		8		0.060	R	15	45	4.0TC	Y	1	Purviskis,R	K	
31.58	814889	4.8	S	100	7		6	0.58	73	0.41	N	4.2	86	Y	1	Clark,M.L		
31.63	814890	4.9	B	M	4			0.5		0.05	B		7			Nesterov,Yu	L	
31.64	814891	5.6	M	M	15		6		0.04	B		12				Maydik,A		
31.667	814892	5.5	B	100					0.04	B		8	4.0C	Y	1	Czerniewski,W		
31.67	814893	5.1	B AAVSO		10				0.08	B		8				Golubev,V		
31.67	814894	4.7	B	E	12		5		0.05	B		7				Mormil,V		
31.67	814895	4.7	B	E			1		0.16	N		30				Mormil,V		
31.684	814896	5.6	B	100	3		6	0.10	52	0.063	R	13.3	21	Y	1	Pilski,A		
31.694	814897	5.3	M	100					0.030	B		6	4.5	Y	1	Chodorowski,F	M	
31.694	814898	5.1	B	100	5.5		6	0.93	66	0.080	R	15	39	Y	1	Szulc,M		
31.70	814899	5.2	B	100	13		6		0.050	B		7	5.3	Y	1	Jahn,J		
31.701	814900	4.5	B		5.7	2.4	4	1.5	0.030	B		8	5.0C	Y	1	Winkler,R		
31.705	814901	4.6	S	100	23		8	2	70	0.152	N	5	44	Y	2	Moeller,M		
31.705	814902	5.5	M	100	6.5		7	0.6	75	0.09	M	11	56	Y	3	Westlund,M		
31.71	814903	5.5	B	100	7		7	1.5	0.050	B		12	3.5	Y	4	Mosch,J	N	
31.712	814904	5.3	S	100	3.3		5		0.063	R	13.3	53	3.5C	N	1	Skjaeraasen,O	O	
31.715	814905	5.4		100	7		7		0.050	B		10	4.0	Y	2	Thomas,A	P	
31.717	814906	4.6	B	CZ			5		0.08	B		10	5.8	N	1	Janecek,V		
31.718	814907	5.0	B				3		0.080	R	6.2	12	5.0	Y	1	Lieder,F		
31.719	814908	5.9	M	CZ	6		5		0.055	R		12	4.0	N	1	Silhan,J	Q	
31.72	814909	4.9	B	100	7		6		0.05	B		10	3.5	N	1	Bottoer,B		
31.72	814910	4.7	S	100	4.5		7	0.09	68	0.08	B	15	4.5C	Y	1	Glowinski,C	R	
31.722	814911	4.6		100	10		6	0.2	45	0.080	B	20	4.3	Y	1	Marekcia,G	S	
31.726	814912	5.6	M	CZ	8		5		0.05	B		7	4.3	Y	1	Silhan,J	Q	
31.726	814913	5.0	M	100	6		7	1.1	65	0.05	B	10	5.5	Y	4	Vanin,G		
31.729	814914	4.9	B	100			7		0.050	B		7	5.5	Y	1	Bohme,D		
31.729	814915	3.8		100	6		5	0.13	50	0.08	B	15	3.8	Y	1	Dietrich,M	T	
31.729	814916				5		3		0.130	N	8	40	5.0	Y	1	Lieder,F		
31.73	814917	5.2	B	AA	9		6		0.050	B		7	4.5	N		Schmeer,P	U	
31.740	814918	5.2	M	100	8.2		5	0.2	35	0.07	B	16	5.3C	Y	1	Taylor,M.D	V	
31.750	814919	5.3	B		16.0		4		0.063	R	13.3	44	6.0	Y	1	Bartnik,M		
31.750	814920	4.2	B	CZ			5		0.08	B		10	5.7	N	1	Elias,P		
31.750	814921	5.4	B	IHW			5	2.0	0.080	B		20	4.4	Y	1	Guthier,O		
31.750	814922			100	7		9		0.076	R	12	57	5.3C	Y	1	Taylor,M.D		
31.752	814923								0.250	N	6	75	4.4	Y	1	Guthier,O	W	
31.757	814924			100	2.7		7	0.1	62	0.076	R	12	37	5.3C	Y	1	Taylor,M.D	X
31.760	814925	5.1	B	100	10	7	5	0.3	40	0.200	R	15	120	5.5	Y	1	Kalauch,K.-D	
31.76	814926	4.8	M	100	15		6	0.4	80	0.06	R	4	10	5.0	Y	3	Granslo,B.H	Y
31.760	814927	5.3	M	100					0.076	R	12	37	5.3C	Y	1	Taylor,M.D		
31.764	814928	4.7	M	100					0.05	B		12		Y	1	Tanti,T	Z	
31.770	814929	4.0	B	100	20		5		0.102	R	14.7	60		Y		Medway,K	a	
31.771	814930	4.4	M	CZ	25		7		0.080	B		10	5.0	Y	2	Bilek,V		
31.771	814931	6.1	M	100	4.7		3		0.063	R	6.7	26	5.5C	N	1	Rudolph,M		
31.781	814932	5.5							0.050	B		10		Y	1	Kauschke,A		
31.781	814933	4.7	S	100	8		7		0.050	B		7	5.0	N	1	Lunde,R	b	
31.795	814934	4.4	B	100	20				0.035	B		7		Y	1	Rodriguez C.,J.A	c	
31.795	814935	5.4	M	100	20		6		0.050	B		10	4.5C	Y	1	Lozano,L		
31.799	814936	4.8	B	4A					0.030	B		8	5.8	Y	1	van der Mey,L	d	
31.799	814937							0.5	86	0.050	B	7	5.8	Y	1	van der Mey,L	e	
31.801	814938	4.5	S	100			6	1	60	0.08	B	11	5	Y	1	Gainsford,M.J	f	
31.815	814939	4.6	S	100	4		7	0.23	75	0.25	N	6	60	Y	1	Gainsford,M.J		
31.976	814940	5.2	M	100				1.25	0.050	B		7		Y	4	Torres,E	g	

NOTE A At 57x and 101x - tail pencil-shaped, 1 deg. long - definite blue color! The nucleus is bright and large.

NOTE B (Observer gave limit as 7.5. Ed.)

NOTE C Jets.

NOTE D Modified Sidgwick method used.

NOTE E Dust cloud?

NOTE F Possible dust cloud?

NOTE G Dust bulge included in coma size.

NOTE H Instrument is Wright-Schmidt. Type I. (Observer indicated "Y" method. Ed.)

NOTE I Diffuse cloud.

NOTE J (Observer gives tail length as 60 arc min. followed by a symbol for "less than". Ed.)

NOTE K Magnitude is brighter than given.

NOTE L Brightness flash. Granulation in the central condensation.

NOTE M Clouds.

NOTE N Coma diameter approximate.

NOTE O DC estimated by memorial images of different DC's. [sic] Severe light pollution made the background sky awfully bright, and in addition, thin clouds made it difficult/impossible to see the outer parts of the coma.

NOTE P Observation of tail with Newtonian 175/1120 mm, 35x: about 30'. (Observer indicated "A" method [Argelander?]. Ed.)

NOTE Q On the margin of a cloud.

NOTE R Hazy. Tail length approximate.

NOTE S Short, broad tail. (Translated by IHW staff. Observer indicated "A" method [Argelander?]. Ed.)

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

NOTE U Omicron Aqr: 4.7 mag., 32 Aqr: 5.3 mag.

NOTE V Antinadi III. Tail fanned.

NOTE W No core.

NOTE X Tail is only suspected.

DATE: 31 DEC 1985

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NOTE Y (Tail length = )24' (sic). Ed.)  
 NOTE Z Clouds. Haze. Wind.  
 NOTE a Clear sky, seeing fair. (Observer gave limit as 12.0. Ed.)  
 NOTE b Faint haze.  
 NOTE c Strong wind.  
 NOTE d Visible with n/eye.  
 NOTE e Pear-shaped coma.  
 NOTE f Tail length uncertain.  
 NOTE g Dust tail 1 deg. 10 arc min. (Observer gave limit as 8.5. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
31.000	830621	0.83	0.152	N	8	38		5.7	1	Cuthill,L	A
31.011	830622	0.1	0.204	N	8	58,271	30	5.0	1	Robinson,P.C	B
31.035	830623		0.050	B		7	20	7.5	3	Cifuentes,E	C
31.052	830624	0.02	0.610	C	13.5	411,823	5	4.5	3	DeYoung,J.A	D
31.701	830625	1.6	0.090	M	11	56	10	5.5	3	Westlund,M	E
31.976	830626		0.050	B		7	20		3	Cifuentes,E	F
31.997	830627	0.44	0.254	N	5.6	55	51	5	2	Swavely,M.E	G

NOTE A Tail at PA 55-80. Gas tail at PA 62. Coma DC 6. Axis of head at PA 245. Start and end of observation is uncertain, but the comet and stars are positioned for 31.000 UT. The coma shows a strong intensity at the center. A dust and gas tail are clearly visible between PA 55 deg.-80 deg. Semi latus rectum - 1.3 arc min. Vertex distance - 1.3 arc min. Magnitude est. to be 5.4 in 10x50 binoculars (Morris method).

NOTE B Ray tail at PA 70; diffuse tail about 6' length at PA 50-95; jet about 0.5' length at PA 340; jet about 0.7' long at PA 250. The coma seemed to be divided into equal quarters. Northwest was brightest, southwest next brightest, southeast next, and northeast dimmest. There was a strong stellar nucleus.

NOTE C Gas tail similar to 29/12/85. Projecting first third of length easy to see, much brighter than the rest. Straight. Estimated length 1 deg. 15'. (Translated by IHW staff. Ed.)

NOTE D Jets at PA 10, PA 245, and PA 200. The main tail is at PA 55.

NOTE E First time visible to the naked eye.

NOTE F Both tails visible in "V" shape. Better view of dust tail than gas tail. Excellent appraisal of beginning of the tail (about 1/3 total length). Gas tail measured 1 deg. 15'; dust tail measured 1 deg. 10'. (Observer gave limit as 8.5. Translated by IHW staff. Ed.)

NOTE G The comet was very bright and clear with a definite bluish tint to it. The color is best compared to the visual color of the Great Orion Nebula. The coma was bright with diffused borders and the nucleus was a star-like point. I estimated the total magnitude at 4.8 and by making "drift-method" timings, the size of the coma at 5.25' of arc. The comet showed a strong central visual tail with 2 smaller "streaks" at either side of it. These streaks were of slightly shorter length and gave the appearance of an edge-on view of a cone of material spreading out from the coma. All observed features were drawn from the same general western edge of the coma which occupied about 25% of the edge of the coma. My timings indicated that the nucleus was located at the center of the condensation with DC = 5.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
31.004	850568	0.200	4.5		10.3 x 6.9	10.00	Kodak Tri-X		N	T	3/C	1	Priester,D.C	A
31.006	850569	0.135	2.8		15.2 x 10.2	10.00	Kodak Tri-X	400/	N		4/P	2	Tatum,R	
31.034	850570	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	242/P	1	Sabia,J.D	
31.069	850571	1.000	5	0.203	2.1 x 1.4	10.00	Kodak Tri-X	400/27	N	X	009/P	1	Bro,M	B
31.726	850572	1.000	7.1	0.140	2.1 x 1.4	44.00	ORNO NP 27	400/27	N		26/N		Kohler,N	

NOTE A Push processed to 800 ASA.

NOTE B Auxiliary lens used. Original instrument characteristics are FL = 2.000, f/10. (The guiding method indicated and the commercial guiding head used are contradictory; this off-axis guider does not permit guiding on the target. Observer's image identifier is 9a. Ed.)



DATE: 1 JAN 1986

DATE: 1 JAN 1986

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	
1.000	814941	4.7	S	100	16	8	1.5	68	0.108	N	4	24	5.0	Y	1	Fraach,J	A	
1.007	814942	5.8	B	100	20	6	2	90	0.152	R	5	24	4.7	N	1	Fox,J.H	B	
1.01	814943	5.1	B	100	11	6	0.71	65	0.080	B		20	5.0	Y		Kronk,C		
1.010	814944	5.3	B	100	8	2	0.80	59	0.05	B		7	6.0			Laird,R		
1.02	814945	5.9	B	100	6.6 5.0	7			0.335	N	4.5	56	5.0	Y		Kronk,C		
1.045	814946	5.6	B	100		7			0.08	B		11	5.0	Y	1	Gorski,L		
1.06	814947	4.7	V	4A						EY			6.5	Y	1	Keen,R		
1.06	814948		4A				1.0	70	0.120	B		20	6.5	Y	1	Keen,R		
1.06	814949	4.8	4A		9	7	0.8	70	0.040	B		8	6.5	Y	1	Keen,R	C	
1.07	814950		4A		12	7	2.2	70	0.32	N	4	33	6.5	Y	1	Keen,R	D	
1.073	814951	5.5	S	100	7.4	5			0.080	B		11	4.5C	Y	1	Bailey,G	E	
1.103	814952	5.1	B	100	7.5	8	2.0	68	0.15	N	8	30	6.1	Y	1	McBride,P	F	
1.40	814953	5.5	B	M	8	4	0.3		0.12	N		40				Knyazyuk,N		
1.440	814954	5.2	S	100		7			0.05	B		10	4.5	Y	1	Williams,P.F		
1.44	814955	4.3	S	100					0.05	B		10		Y	1	Seargent,D		
1.445	814956				5	9	0.1	85	0.15	N	8	100	4.5	Y	1	Williams,P.F		
1.479	814957	5.5	B	100	2.5	5	0.38	55	0.08	R	12.5	40	4.5C	Y	1	Feisheng,J		
1.58	814958	5.2	B	M	4		0.3		0.05	B		7				Nesterov,Yu	G	
1.639	814959	6.0	M	4A	15	6			0.150	N	5.3	45	4.9	Y	1	Nikholm,L		
1.667	814960	5.6	B	M	3				0.05	B		7				Mamedov,V		
1.677	814962	5.5	S		6	8	2	90	0.05	B		7	5.0C	Y	1	Kukkonen,I.T		
1.681	814963	5.6:				6	0.42	60	0.080	B		10	6.0	Y	1	Bremseth,P.-J		
1.694	814964				1.8	5	0.1	55	0.076	R	16	139	5.0C	Y	2	Nagels,A	H	
1.701	814965	5.5	M	100	6.5	6	0.3	77	0.09	M	11	56	4.5	Y	3	Kukkonen,I.T	I	
1.705	814966	5.0	B	4A		6			0.10	B		14	4.0	Y	1	Westlund,M	J	
1.708	814967	4.7	B	100		7			0.050	B		7	5.0	N	1	Hasubick,W		
1.71	814968	4.8	M	100	15	6	0.8	68	0.06	R	4	10	5.0	Y	3	Lunde,R	K	
1.722	814969	4.7	M	100	9.5	7	0.6	61	0.05	B		12	5.5	Y	1	Granslo,B.H		
1.723	814970	4.0	S	100	10	8	1.44	57	0.050	B		7	6.2	Y	1	Tanti,T	L	
1.729	814971	4.2	S	100	12	6		63	0.08	B		20	6.0	Y	2	Meozzi,D		
1.73	814972	4.7	S	SAO 86	8				0.05	B		10	5.0	Y	1	Parisio,R		
1.740	814973	5.1	M	100	6	7	0.6	68	0.05	B		10	5.5Z	Y	4	Germann,R		
1.750	814974	5.5	B	4A	3.0	6	0.05	70	0.050	B		7	4.0	Y	1	Vanin,G		
1.753	814975	5.3	B	100					0.050	B		10	4.0	N	1	Koschny,D	M	
1.760	814976	5.5							0.050	B		10		TC	1	Lehmann,T		
1.760	814977	4.8	S	100	7	5	1.0	80	0.050	B		7	5.0C	Y	3	Kauschke,A		
1.771	814978	6.0	M	100	60	3			0.070	R	14	20	6.0	N	1	Piccinini,M		
1.771	814979	5.0	B	100	2.2	5			0.20	N	4.7	104	3.5	Y	1	Luga,M		
1.792	814980	5.8	B	100		6			0.113	N	8	22	4.5	Y	1	Cappellari,M		
1.934	814981	6.2	B	100	9	3	0.42	40	0.203	SC	10	80	6.0	Y	1	Schambeck,C.M		
1.95	814982	4.7	M	AA					EY							Farrington,W.R		
1.958	814983	5.0	M	100	6.5	8	1	90	0.203	N	8	128	5.0	Y	1	Green,D.W.E		
1.97	814984	4.5	S	AA	12	7	1		0.035	B		7				Hannon,J		
1.972	814985	4.9	S	100	8	4	0.63	55	0.035	B		7	6.0	Y	3	Green,D.W.E	N	
1.976	814986				6		0.67	55	0.15	R	5	31	6.0	Y	3	Morrison,W		
1.976	814987	5.0	B	100					0.050	B		10	5	C	Y	1	Morrison,W	O
1.978	814988		100				1.17		0.050	B		7		Y	5	Robinson,R.L		
1.979	814989	4.7	M	100	6	7	0.4	55	0.05	B		7	4.5	Y	1	Torres,E	P	
1.98	814990	4.3	S	100	20	6	1	90	0.05	B		7	4.5	Y	1	DeYoung,J.A		
1.983	814991	4.9	M	100	10.0	7	2.0	64	0.05	B		12	6.3	Y	1	Harrington,P		
1.99	814992	4.9	B	AAVSO					0.050	B		10				Knight,S	Q	
1.99	814993	4.3	M	AA	13	7			0.050	B		7				Bortle,J.E		
1.99	814994	4.5	M	AA	13	7			0.080	B		20				Green,D.W.E	R	
1.99	814995	4.4	S	AA	13	7	2		0.050	B		7				Green,D.W.E	R	
1.99	814996	4.6	S	AA	13	7	2		0.080	B		20				Green,D.W.E	S	
1.99	814997	4.7	S	AAVSO	7	7	1.0	62	0.050	B		10				Green,D.W.E	N	
1.99	814998	4.8	S	AAVSO	18				EY							Bortle,J.E		
1.99	814999				5.6	7	1.4	62	0.120	B		20				Bortle,J.E	T	
1.99	815000				5.0	7	1	62	0.317	N	6	55				Bortle,J.E	U	

NOTE A Gas tail.

NOTE B SAO 145989 comparison star.

NOTE C Modified Sidgwick method used.

NOTE D Brighter knot in tail 2.0 deg. from nucleus.

NOTE E Hint of a tail?

NOTE F Nucleus undefined.

NOTE G Granulation in central condensation.

NOTE H (Observer indicated "A" method [Argelander?]. Ed.) Comparison star is SAO 145989.

NOTE I Coma diameter determined as an average of five transit time observations.

NOTE J Cirrus.

NOTE K Faint haze.

NOTE L Seeing good, transparency excellent. Clouds. Type I tail 0.6 deg. at PA 61, type II tail 0.4 deg. at PA 77.

NOTE M Drawing.

NOTE N Coma diameter approximate. Tail length is lower limit.

NOTE O Tail 0.11 deg. wide at end, diffuse central spine of tail 0.13 deg. long.

NOTE P Dust tail 1 deg. 20 arc min. (Observer gave limit as 9.0. Ed.)

NOTE Q Dust tail.

NOTE R Coma diameter approximate.

NOTE S Coma diameter and tail length approximate.

NOTE T Tail 3.5-4' wide at beginning.

NOTE U Nuc. 10.0 mag., tail 2.5' wide, length is lower limit.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
1.007	830628	0.6	0.203	R	13	85,150	10	4.7	1	Fox,J.H	A
1.024	830629		0.203	SC	10	70		6.0		Williams,D.J	B
1.031	830630		0.203	SC	10	81			1	Lohvinenko,T.W	C
1.037	830631		0.203	SC	10	169			1	Lohvinenko,T.W	D
1.057	830632	0.38	0.254	N	5.6	60,120,180	16	6.7	2	Knisely,D	E
1.075	830633		0.152	N	4.5	18	21	6.5	1	Troiani,D.M	F
1.084	830634		0.203	N	6	32	25	6.5	1	Troiani,D.M	G
1.68	830635	0.26	0.114	N	8	100	101	7	2	Pesci,S	H
1.691	830636	0.39	0.076	R	16	139	30	5.0	1	Kukkonen,I.T	I
1.698	830637	1.6	0.090	M	11	56	10	4.5	3	Westlund,M	J
1.753	830638	0.6	0.060	R	15	45	10	4.0	1	Koschny,D	K
1.764	830639	0.2	0.103	M	10.5	35	20	5.0	3	Piccinini,M	L
1.942	830640	1	0.203	SC	10	80	4	6.0	1	Farrington,W.R	M
1.981	830641		0.050	B		7	25		5	Cifuentes,E	N

DATE: 1 JAN 1986

DATE: 1 JAN 1986

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
1.984	830642		0.200	N	8	81,130,203	16	5	1	Robinson,R.L	O

NOTE A Very mottled appearance near nucleus. Extensions from nucleus more apparent at 150x.

NOTE B Halley seems to be stuck at its present brightness. Just detectable with the eye. (Duration not indicated. Time of observation is start time. Ed.)

NOTE C The nuclear magnitude is 7.2 (check stars: HR 72, AGK 3+0 deg. 0181) and has an integrated magnitude of 5.5 (check star: 14 Piscium). Comet Halley is seen with a blue spike which I believe is the ion tail at PA 23. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D The nuclear diameter of the comet is 30.45" and the coma has a diameter of 243.62". The tail of the comet is blue in colour and is difficult to see. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E Comparable to T Aquari in brightness. Nucleus not quite centered in coma. Central disk noted 20" arc in diameter and diffuse. Faint broad central spine noted in tail approximately 10' arc long. PA 45. Possible hints of faint streamer noted near northeast side of coma. Tail slightly irregular in brightness and 2/3 width of coma at its widest.

NOTE F Seeing (1-3): 2. Sky darkness (1-5): 4. Ray at PA 75 deg. Tail was 3/4 deg. long.

NOTE G Seeing (1-3): 2. Sky darkness (1-5): 4-3. Streamer at PA 80 deg. Fan at PA 80 deg. DC = 7. Tail = 2 deg. long.

NOTE H Jet at PA 64 deg. "Water drop" at PA 64 deg. Coma; DC 7/8; about 8' diameter. Coma appears perfectly round at western limb. Central condensation resembles a water drop fading toward east. Tail appears very thin, jet-like. No special feature in comet's coma.

NOTE I Coma elongated, long axis in 55-235 deg. direction. The edge of coma "sharper", more distinct, in the 235 deg. direction. Tail length 0.1 deg.; tail very dim.

NOTE J Cirrus.

NOTE K Only 1 tail at PA 70.

NOTE L Tail PAs 80 deg. and 70 deg. Vertex distance = 3.2', semi latus rectums P1 = 3', P2 = 3.6'. City lights interfered with the observation.

NOTE M Mag 6.2, N mag. 10. Degree of condensation 3. Tail length 25'. Very good seeing tonight allowed the observations of new details. Tail now easily seen and very long. Large diffuse coma now seen outside main coma. P1 = 3', PA 270; P2 = 3', PA 90. Vertex 30". P1 and P2 came off coma, not nucleus. (This observer's P1 and P2 may not follow the standard definition of semi latus rectum. The tail's orientation appears northerly in the drawing. Ed.)

NOTE N Comet naked eye visible today. Both tails excellently visible. Better dust tail (wider and longer) than the gas tail (straighter and fainter). Estimated lengths: dust, 1 deg. 20'; gas, 1 deg. 10'. (Observer gave limit as 9.0. Translated by IEH staff. Ed.)

NOTE O Central condensation again more diffuse, nonstellar in nature. Coma appeared to be brighter on north side and slightly wider than on the south side. A distinct darkening occurred in the coma on the south side. A central bright tail projected to the east for over a degree. The tail had an obvious fan shape.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdag	Id/Typ	Site	Observer(s)	Notes
1.071	850573	0.305	2.5	0.122	6.8 x 4.5	8.00	Kodak 2415		Y	S	159/P	1	Minton,R.B	A
1.713	850574	0.200	5.6		10.3 x 6.9	15.00	Kodak 103a-O		N	O	2/C	4	Cimatti,A	B
1.725	850575	0.200	5.6		10.3 x 6.9	10.00	Kodak 103a-O		N	O	3/C	4	Cimatti,A	
1.740	850576	0.200	3.5		10.3 x 6.9	15.00	Kodak 103a-O		N	O	4/C	4	Cimatti,A	
1.758	850577	1.000	8	0.125	2.1 x 1.4	4.00	Agfa-Pan Pro	400/27	N	M	6/C	2	Trixler,F	C
1.769	850578	1.000	8	0.125	2.1 x 1.4	7.00	Agfa-Pan Pro	400/27	N	M	10/C	2	Trixler,F	C
1.794	850579	0.200	5.6		10.3 x 6.9	5.00	Kodak 103a-O		N	O	5/C	4	Cimatti,A	
1.826	850580	0.700	5	0.14	2.9 x 2.0	30.00	Kodak IIA-F		N	M	44/P	1	Ridley,R.B	D
1.964	850581	0.225	1.7	0.140	9.1 x 6.1	5.00	Kodak 2415		Y	S	1/P	1	Dilsizian,R	E
1.977	850582	0.050	4.0		39.6 x 27.0	6.50	Kodak Tri-X		N		176/P		Gianforte,J.S	F

NOTE A Tail is 1.9 deg. long with condensation in tail 1.5 deg. from nucleus. Some wavy structure in first 1 deg. from head. Instrument is Aero-Ektar aerial camera lens. (Print submitted by observer is a composite of two contiguous 4 min. exposures. Ed.)

NOTE B Twilight interfered with the observation.

NOTE C City lights interfered with the observation.

NOTE D (Observer's image identifier is preceded by prefix 2A. Ed.) Instrument uses photographic plates.

NOTE E Stellar guiding was used because of extremely small apparent movement of the comet within the exposure period (movement during a 24 hour period was 2 minutes of arc [sic] in RA and approximately 0.2-0.3 degrees of arc in declination during this period). The 5.5" Schmidt camera gives a strong "hot spot" near the center of the frame.

NOTE F (Observer's image identifier is 107-6. Observer listed emulsion speed as ASA 800. Ed.)

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdag	Id/Typ	Site	Observer(s)	Notes
1.056	870108	45P-O	N	0.495		0.065	20.00	Kodak 2415		Y	S	9/P	1	Minton,R.B	A

NOTE A Newtonian spectrograph used. The emissions and their strengths appear to be similar to my spectrum of December 4, 1985. (Prints submitted are composites of two contiguous 10 min. exposures. Observer's image identifiers are NS 9 and NS 10. Ed.)

DATE: 2 JAN 1986

DATE: 2 JAN 1986

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
2.010	815001	5.5	B	100					0.080	B		20	5.5	Y		Smith,D	
2.011	815002					6			0.05	B		20	3.0	Y	8	da Silva,L.A.L	A
2.02	815003	5.1	B	100		6	0.98		0.080	B		20	5.5	Y		Kronk,G	
2.02	815004	5.8	B	100	6.1 4.0	8			0.335	N	4.5	56	5.5	Y		Kronk,G	B
2.10	815005	4.7	M	100		7	2.0	65	0.080	B		20	6.5	Y	16	Morris,C.S	
2.104	815006	4.9	M	100		10			0.050	B		7		N	3	Jeffrey,J	
2.125	815007	5.7	B	100		6	0.67	280	0.050	B		10	4.5C	Y	3	Stapleton,J	C
2.16	815008	5	M	4A					0.108	N	4	20	4	Y	3	Hale,A	D
2.378	815009	5.1	M	100		18			0.035	B		7	5	Y	1	Watanabe,H	
2.38	815010			100	3.3	5	0.7		0.31	N	5.7	147	4.0	Y	2	Suzuki,K	E
2.382	815011	5.1	M	100		15			0.035	B		7	5	Y	1	Watanabe,A	
2.39	815012	5.1	B			12	0.83	300	0.05	B		10	4.5	N	1	Uda,K	F
2.39	815013	3.5				10	2		0.12	B		20	6.0	Y	1	Washi,S	G
2.395	815014	4.5	B	100		5			0.05	B		7		Y	2	Okuda,M	
2.396	815015	5.1	B	4A			1		0.035	B		7		Y	2	Okuda,M	
2.40	815016	5.0	M	100			1.2		0.05	B		7	4.5	Y	1	Suzuki,K	
2.403	815017	4.5	M	100	12.5	6			0.1	N	10	25	6.0	Y	1	Ichikawa,K	
2.403	815018	4.8	M	100		8	0.25	70	0.030	B		8	4.5C	Y	2	Kato,T	
2.41	815019	4.8	S	AAVSO	6.5	6	1	65	0.13	N	6.3	24	5.5	Y	1	Hayashi,A	
2.417	815020	5.4	B	100		12	6	1.0	0.050	B		7	6.5	Y	3	Parkinson,M	H
2.419	815021	4.7	S	100		4	5	0.13	0.153	N	8.6	52	3.5	Y	1	Iwaki,Y	
2.427	815022	5.1	B	100					0.07	B		10	5.0	Y	1	Date,M	
2.428	815023	4.6	S	100		10	5	2	0.07	B		10	6.0	Y	1	Kobayashi,J	
2.43	815024	5.0	S	AAVSO		5	6	0.83	0.07	B		10	5.5	Y	1	Hayashi,A	
2.440	815025	4.9	B	100					0.05	B		7	4.5C	Y	1	Hayashi,H	
2.440	815026				15	6	0.42		0.12	N	6	40				Hayashi,H	
2.44	815027	5.3	B		10	6	1.2	65	0.16	N	4.8	24	5.5	Y	1	Maeda,S	
2.44	815028	5.2	M	100	5.2	8	1.1	65	0.08	B		11	5	Y	1	Mitsuma,S	I
2.45	815029	4.2	S	100						BY					2	Seargent,D	
2.45	815030				8	7	1.5	65	0.08	B		15		Y	2	Seargent,D	
2.45	815031				30	7	2.5		0.23	N	4.4	40	6.0	Y	1	Washi,I	J
2.459	815032	4.0		100	2.5	5			0.152	N	8	64		Y	1	Tregaskis,T.B	K
2.45972	815033		B			6	0.67	90	0.25	N	8	80	6	Y	2	Okumura,S	
2.46	815034	5.1	B	100	4.5	7	0.3	65	0.05	B		7	3.0	N	1	Kanai,K	
2.462	815035	5.4	S	100		6			0.05	B		10		Y	1	Tregaskis,T.B	L
2.52	815036	4.7	S	100	7.5	7			0.030	B		8	5.4	Y		Pearce,A	
2.604	815037				6.2	6			0.254	N	6	61	4.5C	Y	1	Bhadriah,L.H.E	M
2.653	815038	5.7	M	100		6			0.050	B		20	4.5C	Y	1	Bhadriah,L.H.E	
2.665	815039	5.0	B	100	4.6	4	1.5	292	0.05	B		10	5.5	Y	1	Bretschneider,H	
2.684	815040	5.2	B	100	19	6			0.050	B		7	6.2	Y	1	Bohme,D	
2.688	815041	5.5	B	100		7			0.030	B		8		Y	1	Pfritzer,E	
2.694	815042	5.9	S	100	6.2	6			0.090	R	14	46	5.5	Y	2	Birth,G	
2.708	815043	4.9	V	4A		6				BY					1	Hasubick,W	N
2.715	815044	4.8	B	4A		6	1.8	60	0.10	B		14	5.5	Y	1	Hasubick,W	
2.719	815045	4.8	M	4A	15 12	7	1.63	61	0.08	B		11	5.0	Y	1	Gubo,H	
2.72	815046	6.1	B	100	7.2	8	0.5	65	0.203	SC	10	44	5.7C	Y	2	Maraziti,A	O
2.722	815047	4.9	B	4A		6	1.15	60	0.03	B		8	5.5	Y	1	Hasubick,W	
2.726	815048	4.8	B	100		8	7	1.1	0.063	B		9	4.5C	Y	1	Kammerer,A	
2.726	815049	4.7	B	100		7			0.050	B		7	4.5	N	1	Lunde,R	P
2.729	815050	5.0	B	4A	7.0	7	0.3	60	0.060	R	15	45	5.0	Y	1	Koschny,D	Q
2.729	815051	4.5	B	4A	12	5	0.79		0.056	B		8	5.5	Y	1	Koch,V	
2.73	815052	5.0	B	100		9			0.05	B		10	4.0	N	1	Bottger,B	
2.731	815053	5.1	B	100		5	0.1		0.063	R	13	21	5.0	N	2	Zische,E	
2.733	815054	3.8	B	100	0.2	6	0.40	210	0.28	SC	5	70	4.1	Y	1	Amoretto,M	
2.736	815055	4.7	B	4A	12	5	0.6		0.080	B		20	5.5	Y	1	Koch,B.O	
2.74	815056	5.0	B	AA	9	6	0.7	63	0.080	B		20	5.0	N	1	Schmeer,P	R
2.740	815057	5.5	B	100	6	6	0.8	65	0.113	N	8	22	5.5	Y	1	Schambeck,C.M	S
2.745	815058	5.5	B	100		5			0.050	B		10	4.0	N	1	Lehmann,T	
2.746	815059	4.8	B			3			0.080	R	6.2	12	4.5	Y	1	Lieder,F	
2.747	815060				5.6	7	1	305	0.250	N	6	55	4.5	N	1	Lunde,R	T
2.75	815061	5.3	B	AAVSO	15	6	1		0.11	B		20				Shirokov,A	U
2.757	815062				6	3	0.2		0.130	N	8	40	4.5	Y	1	Lieder,F	
2.789	815063	5.8	B	100		7			0.050	B		7	5.0C	Y	1	Temprano,J	
2.799	815064	5.4	M	100	6	6	0.6	75	0.05	B		10	5.0	N	5	Vanin,G	
2.833	815065	5.3	B	100		3	0.5		0.050	B		10	5.2	Y	1	Kalla,X	V
2.872	815066	5.8	B	4A					0.050	R	5.6	30		Y	1	Mendez,J	
2.93	815067	4.5	S	AA	11	7			0.080	B		20				Green,D.W.E	W
2.962	815068	4.9	M	100	10.0	7	2.0	61	0.05	B		12	6.42	Y	1	Knight,S	X
2.97	815069	4.3	S	AA	10	7			0.050	B		7				Green,D.W.E	W
2.976	815070	5.1	B	100		5	0.43	64	0.05	B		7	5.6	Y	3	Benavides,A	
2.98	815071	4.6	M	AA	8	7			0.203	N	6	49				Green,D.W.E	W
2.98	815072	4.7	S	AA	8	7			0.203	N	6	49				Green,D.W.E	W
2.990	815073	5.1	B	100	6	1	0.53	53	0.05	B		7	6.0		1	Lalret,R	
2.999	815074			100	6.8 5.6	5	0.18	66	0.113	N	8	45	5.9	Y	3	Benavides,A	Y

NOTE A Many clouds (cumulus).

NOTE B Tear shaped coma. Tail has bright western edge. Tail PA 62 deg. to 83 deg.

NOTE C Lights, tail. (PA approximate and may have been measured incorrectly. Ed.)

NOTE D Observation severely hampered by thick cirrus. The magnitude is only approximate and should be considered as an educated "guestimate". The comet could barely (and briefly) be seen with 10x50 binoculars.

NOTE E Meter: coma diameter is P1 + P2.

NOTE F (PA value may have been incorrectly determined. Ed.)

NOTE G Coma blue green. Type I. (Observer indicated "Y" method. Translated by IEW staff. Ed.)

NOTE H Excellent dark sky, hint of a second shorter tail.

NOTE I 8.5.

NOTE J Instrument is Wright-Schmidt. (Observer indicated "Y" method. Ed.)

NOTE K Clear and twilight.

NOTE L Coma almost round. Clear and twilight. (Observer gave limit as 6.9. Ed.)

NOTE M Slight tail, with averted vision, about 1/2 degree.

NOTE N In focus.

NOTE O Very faint tail.

NOTE P Haze.

NOTE Q Drawing.

NOTE R Omicron Agr: 4.7 mag., 32 Agr: 5.3 mag.

NOTE S With naked eye also seen. [sic]

NOTE T Tail length is upper limit. Haze.

NOTE U Coma diameter and tail length approximate.

NOTE V Comet low in the sky. Temp. -20 deg. C.

NOTE W Coma diameter approximate.

NOTE X Dust tail.

NOTE Y Observation completed 860103 at 0018. The coma had a halo indirectly visible. (Translated by IEW staff. Ed.)

DATE: 2 JAN 1986

DATE: 2 JAN 1986

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
2.005	830643	0.1	0.204	N	8	58,203	14	5.0	1	Robinson,P.C	A
2.014	830644		0.203	SC	10	70		6.0		Williams,D.J	B
2.039	830645	0.39	0.203	N	6	61,116	10	5.5	1	Williams,J	C
2.040	830646		0.203	SC	10	81			1	Lohvinko,T.W	D
2.729	830647		0.356	SC	11	200			1	Verdenet,M	E
2.736	830648	0.6				45	20	5.0	1	Koschny,D	F
2.74	830649	0.38	0.203	SC	10	44, 77	43	5.7	2	Maraziti,A	G
2.868	830650	4	0.08	B		11		4.3	1	Fleet,R.W	H

NOTE A Ray tail at PA 70; diffuse tail >8' long at PA 50-90. Central condensation was "occasionally stellar". Western quadrant of coma was brightest. Coma a bit longer east-west than north-south.

NOTE B Clear tonight. A very faint tail fans outward east of the nucleus. It is very difficult to see with eye because of the city lights and Halley is very low. The nucleus is still very condensed and star-like. (Duration not indicated. Time of observation is start time. Ed.)

NOTE C Coma brightens toward center. There definitely appears to be a faint tail at PA 90. City lights interfered with the observation.

NOTE D The comet is observed as a bluish white with a blue tail with two visible spikes. They are located at PA 21 and PA 49.5. The nuclear magnitude is 7.0 (check star: HR 72, AGK 3+0 deg. 0181) and has an integrated magnitude of 5.4 (check star: 14 Piscium). (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E (Duration not indicated. Time of observation is assumed to be start time. Additional drawing submitted made using 11x80 binoculars (2"/mm). Ed.)

NOTE F Only 1 tail at PA 60.

NOTE G Tail at PA 65 deg. Drawing interrupted by clouds after 3 minutes from start. Approximative orientation and scale; correct drawing of coma and tail. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE H Main tail at PA 276. Fan (?) at PA 295. Low altitude, end of tail lost in Milky Way, no magnitude estimate. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
2.003	850583	1.970	5.5	0.355	1.0 x 0.7	8.00	Kodak 2415		Y	O	26/P	1	Crist,M	A
2.022	850584	0.135	2.8		15.2 x 10.2	8.00	Kodak Tri-X	400/	N		5/P	2	Tatum,R	
2.025	850585	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	244/P	1	Sabia,J.D	B
2.026	850586	1.970	5.5	0.355	1.0 x 0.7	16.00	Kodak 2415		Y	O	27/P	1	Crist,M	A
2.039	850587	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	245/P	1	Sabia,J.D	B
2.392	850588	1.760	5.8	0.303	1.2 x 0.8	11.00	Kodak 2415		Y		5/P	1	Nijima,T	C
2.446	850589	0.180	2.8		11.4 x 7.6	25.00	Kodak 2415		Y	O	2/S	12	Garraod,G	
2.769	850590	0.803	2.1	0.350	2.6 x 1.7	1.00	Kodak 2415		Y	M	30/P	1	Guarro,J	
2.786	850591	0.803	2.1	0.350	2.6 x 1.7	7.00	Kodak 103a-F		N	M	31/P	1	Guarro,J	
2.793	850592	0.803	2.1	0.350	2.6 x 1.7	7.00	Kodak 2415		Y	M	32/P	1	Guarro,J	
2.801	850593	0.803	2.1	0.350	2.6 x 1.7	1.00	Kodak 2415		Y	M	29/P	1	Guarro,J	
2.963	850594	0.225	1.7	0.140	9.1 x 6.1	4.00	Kodak 2415		Y	S	2/P	1	Dilsizian,R	D

NOTE A City lights interfered with the observation. Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.

NOTE B Photograph made by J. Kamichitis and J.D. Sabia.

NOTE C (Observer's image identifier is 860102-1. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

NOTE D Stellar guiding was used because of extremely small apparent movement of the comet within the exposure period (movement during a 24 hour period was 2 minutes of arc [sic] in RA and approximately 0.2-0.3 degrees of arc in declination during this period). The 5.5" Schmidt camera gives a strong "hot spot" near the center of the frame.

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	ACN#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
2.008	870109	600G-O	CL	0.135	1.9		33.00	Kodak Tri-X	400/27	N	C	530/S	2	Buchanan,W.T	AB
2.036	870110	600G-O	CL	0.135	1.9		33.00	Kodak Tri-X	400/27	N	C	531/S	2	Buchanan,W.T	BC
2.052	870111	600G-O	CL	0.135	1.9		17.00	Kodak Tri-X	400/27	N	C	532/S	2	Buchanan,W.T	BD

NOTE A (Observer's image identifier is E-115-30. Ed.)

NOTE B Error in polar alignment. Comet in north edge of zodiacal light, visible to naked eye. All spectra lie along a meridian from south to north with increasing wavelength. Second order violet-green.

NOTE C (Observer's image identifier is E-115-31. Ed.)

NOTE D (Observer's image identifier is E-115-32. Ed.)

DATE: 3 JAN 1986

DATE: 3 JAN 1986

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	
3.005	815075	3.5	B	100		5		58	0.05	B		20	5.5	Y	8	da Silva, L.A.L		
3.010	815076	3.9	B	100		3			0.06	R	12	56	5.5	Y	1	Onofre D., D	A	
3.02	815077	5.0	B	4A	14	6			0.035	B		7	6.0	Y	1	Jacobson, E		
3.02	815078				48	6				EY			6.0	Y	1	Jacobson, E	B	
3.031	815079	4.9	M	101	37	7	3	63	0.080	B		20	5.5	Y	2	Ariail, R.B		
3.10	815080	5.0	4A		10	6	2.0	60	0.040	B		8	6.0	Y	1	Keen, R	C	
3.118	815081	4.9	V	4A						EY			6.0	Y	1	Keen, R		
3.236	815082	4.9	M	100					0.050	B		7		N	3	Jeffrey, J		
3.366	815083	4.7	M	4A	22	7	0.67	290	0.05	B		10	5.0	Y	1	Fabre, R	D	
3.366	815084	4.9	B	100					0.05	B		7	4.0C	Y	1	Fabre, R		
3.366	815085				10	6	0.58		0.12	N	6	40		Y	1	Hayashi, H		
3.375	815086	4.4	M	100	6.2	5	1.5	75	0.1	N	10	56	6.0	Y	1	Hayashi, H		
3.395	815087	5.1	M	100	4.5	7	0.75	60	0.08	B		11	5	Y	1	Ichikawa, K		
3.396	815088	5.3	B	100		6			0.05	B		7	4.5C	Y	1	Mitsuma, S		
3.41	815089	5.0	S	AAVSO	4	5			0.13	N	6.3	24	4.0	Y	1	Hasegawa, T		
3.52	815090	4.7	S	100		7			0.030	B		8	5.4	Y		Hayashi, A		
3.52	815091	4.8	B	100					0.030	B		8	5.4	Y		Pearce, A		
3.52	815092			100					0.203	N	6	38	5.4	Y		Pearce, A		
3.54	815093	4.6	S	100	7	5	0.88	77	0.05	B		7	4.2	N		Pearce, A		
3.58	815094	4.3	B	M						EY						Clark, M.L		
3.688	815095	6.3	M	CZ	14				0.05	B		7	4.0CT	Y	1	Poroshin, A		
3.690	815096	5.4	B	100		7	1.8	65	0.050	B		12	4.0T	Y	1	Kourimsky, M		
3.690	815097	5.1	M	CZ		3			0.05	B		7	4.7		2	Mosch, J		
3.694	815098	5.8	B		6.5	4	0.2		0.200	N	7.2	36	4.5T	Y	1	Pravec, P		
3.70	815099	4.9	M	100	15	6	0.8	62	0.06	R		4	10	5.5	Y	4	Lipaki, P	
3.70	815100	4.4	DCS	7		6				EY		5	C	N	2	Granslo, B.H		
3.701	815101	5.7	S	100	4.7	6			0.090	R	14	46	4.6	Y	2	Kroon, B	E	
3.701	815102	5.4	B	100	6	7	1.3		0.080	R	6.2	50		Y	1	Rirth, G	F	
3.701	815103		CZ		6.5	4.5	6	1	90	0.10	N	6	38	4.8		2	Pfitzner, E	
3.706	815104	5.1	B	100	4.5	4	1.8	292	0.05	B		10	5.0	Y	1	Pravec, P		
3.708	815105	5.2	B	CZ		3			0.03	B		6	6.0		1	Bretschneider, H		
3.709	815106	5.6	B	100	11.9	6			0.066	R	15.2	30	4.5	Y	1	Vaclik, F	G	
3.713	815107	5.2	B	100	11	8			0.050	B		7	6.0	Y	1	Gora, D		
3.715	815108	4.9	B	4A	9.4	4.7	6	2.17	60	0.10	B	14	6.0	Y	1	Bohme, D		
3.717	815109	5.1	B	100	5.0	6			0.063	R	8.4	4.2		Y	1	Basubick, W		
3.719	815110	4.9	S	4A		6			0.03	B		8	6.0	Y	1	Witte, F	H	
3.722	815111	4.9	M	4A	14	12	7	1.5	60	0.08	B	11	5.5	Y	1	Basubick, W		
3.722	815112	5.0	B	4A	10.0	7	0.3	60	0.070	B		20	5.0	Y	1	Gubo, B		
3.726	815113	4.9	M	100	10	7	0.6	58	0.05	B		12	5.5	Y	1	Koschny, D	I	
3.729	815114	4.9	V	4A		6				EY		6.0		Y	1	Tanti, T	J	
3.729	815115	5.0	B			3			0.080	R	6.2	12	4.0	Y	1	Basubick, W	K	
3.729	815116	4.7	B	100		7	0.5	307	0.050	B		7	4.5	N	1	Lieder, F		
3.73	815117	4.5	S	SAO 85	9	6	0.42	86	0.205	N	6	80	5.5	Y	1	Lunde, R	L	
3.73	815118	4.1	S	DCS 7	12	5	2.0	70	0.040	B		7	5.5	Y	7	Germann, R	M	
3.73	815119	4.4	B	DCS 7		5			0.040	B		7	5.5	Y	7	Bus, E.P		
3.73	815120	5.4	B	DCS 7		5	1.0		0.080	B		15	4.5C	N	1	Bus, E.P		
3.735	815121	4.9	S	100		6		65	0.08	B		11	4.5	Y	1	Keijmel, P.C		
3.74	815122	5.4	S	100					0.08	B		20	5.5	Y	1	Gainsford, M.J	N	
3.740	815123			100	2.4	2	7	0.05	0.21	N	5	43	5.3C	Y	1	Shanklin, J.D		
3.743	815124				5	3	0.2		0.130	N	8	40	4.0	Y	1	Taylor, M.D	O	
3.743	815125	4.7	S	100	8.4	8	0.55	50	0.05	B		10	5.3	Y	1	Lieder, F		
3.746	815126	4.9	S	100	3.5	7	0.30	75	0.25	N	6	60	4.5	Y	1	Hurst, G.M		
3.747	815127	4.8	S	4A	5.9	5			0.08	R	15	40	4.5	Y	2	Gainsford, M.J	N	
3.748	815128				9	8	0.55	50	0.08	B		15	5.3	Y	1	Storey, D	P	
3.750	815129	5.0		100						EY		5.5		Y	1	Hurst, G.M		
3.750	815130	5.1	B	CZ	8	4	0.5	35	0.10	B		25	5.8	Y	2	Hurst, G.M		
3.757	815131	5.2				1	60		0.080	B		15	3	Y	2	Polak, J		
3.760	815132	5.1	S	100	4.0	9	0.21	62	0.050	B		10	4.9	Y	3	Nagele, A	Q	
3.760	815133		B	100		9			0.050	B		10	4.9	Y	2	Abbott, J	R	
3.76	815134	5.0	B	100	8	5			0.050	B		10	4.9	Y	3	Abbott, J	S	
3.760	815135	5.2	M	100	6	5	0.15	76	0.080	B		20	C	Y	1	Jannink, D.W	T	
3.761	815136	4.8	B	4A	30	8	1.5	85	0.04	B		8	5.3C	Y	1	Taylor, M.D	U	
3.764	815137	4.5		100					0.06	R		25	5.5	Y	1	Ward, A	V	
3.764	815138	5.0	S	100						EY		4.5		Y	1	Gainsford, M.J	W	
3.771	815139	4.8	S	100	8	6	7	1.17	0.065	B		12	6.0	Y	6	Foulkes, M	X	
3.771	815140	5.4	M	100	5	5	0.15	76	0.07	B		16	5.0	Y	6	Foulkes, M	X	
3.78	815141	5.2	B	AAVSO		6	1		0.11	B		20		Y	1	Taylor, M.D	Y	
3.781	815142	4.5	B	4A	8	8	0.42		0.20	N	6	60	C	N	4	Shirokov, A	Z	
3.785	815143	5.7	B	4A					0.050	R	5.6	30		Y	1	Gallego, J		
3.785	815144	5.0	B	IHW		5			0.080	B		20	4.8	Y	1	Mendez, J		
3.791	815145	4.7	B	100					0.03	B		8	5.0	Y	1	Guthrie, O		
3.791	815146		B	100	4.5	6	0.75	65	0.07	B		20	5.0	Y	1	Fillimon, E	a	
3.791	815147	4.7	B	100					0.030	B		8	4.0	Y	2	Fillimon, E	a	
3.80	815148	5.5	S	100					0.20	R	12	40	4.5	Y	1	Kellner, A		
3.806	815149	5.3	S	100		5			0.050	B		10	4.9	Y	1	Shanklin, J.D		
3.806	815150				4	6	0.2	50	0.200	R	14	40	4.9	Y	1	Rogers, J.H	b	
3.809	815151	5.4	M	100	20	6			0.050	B		10	4.0C	N	1	Rogers, J.H	c	
3.810	815152	5.5	B	4A					0.035	B		7		Y	1	Lozano, L		
3.81	815153	5.1	S	DCS 7	5.5	7			0.100	B		14	4	C	Y	7	Mendez, J	
3.854	815154	5.5	B	4A	20		1		0.08	B		15		Y	1	van Loo, F.R		
3.990	815155	4.7	M	100	6	6	0.4	55	0.05	B		7	5.0	Y	1	Losada, R	Z	
														Y	1	DeYoung, J.A		

NOTE A Artificial lights near; cumulus. PA not certain.

NOTE B Stellar condensation.

NOTE C Modified Sidgwick method used.

NOTE D (PA value appears to be measured incorrectly. Ed.)

NOTE E Tail length determined in 15x80 binoculars: 2.0 deg.

NOTE F Lights.

NOTE G Probably well adapted, not dark adapted, of course - there is no dark sky in Czechoslovakia.

NOTE H Coma diameter approximate. Very weak tail; length 1.5-2.0 deg.

NOTE I Drawing.

NOTE J Seeing good, transparency excellent.

NOTE K In focus.

NOTE L Haze.

NOTE M Tail length and PA approximate.

NOTE N Twilight.

NOTE O 0.1 deg. tail only suspected.

NOTE P Seeing II Ant. [sic] Transparency good. Slight sky glow.

NOTE Q (Observer indicated "A" method [Argelander?]. Ed.) Tail length is lower limit.

NOTE R Comparison stars 5.3, 4.7, 5.0, 4.0.

NOTE S Comparison stars 6.3, 6.0. Central condensation was magnitude 6.3, near stellar.

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NOTE T Telescopic limit is 8.  
 NOTE U Nearby star.  
 NOTE V Positive blue colour.  
 NOTE W Negative observation.  
 NOTE X Transparent.  
 NOTE Y Fanned tail to 1 deg. suspected.  
 NOTE Z Tail length approximate.  
 NOTE a Unrestrained visibility. (Translated by IEW staff. Ed.)  
 NOTE b Small coma. Low, in haze.  
 NOTE c See drawing.

## SUB-NETWORK: DRAWING

Date(UT)	ACON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
3.080	830651	0.38	0.254	N	5.6	53, 60,120	10	6.5	2	Knisely,D	A
3.727	830652	1.5	0.070	B	20		15	5.0	1	Koschny,D	B
3.738	830653	0.4	0.254	N	6.4	41, 65,130	14	4.7	3	Abbott,J	C
3.748	830654	4	0.05	B	10		25	5.3	1	Hurst,G.M	D
3.761	830655	0.11	0.298	N	5	40, 65,269	19	5.5	1	Stott,D	E
3.776	830656		0.200	N	6		15		4	Gallago,J	F
3.776	830657	1.95	0.065	B	12		14	5.6	6	Foulkas,M	G
3.806	830658	0.35	0.200	R	14	40	10	4.9	1	Rogers,J.H	H
3.854	830659	2	0.080	B	15				1	Losada,R	I

NOTE A Central spine at PA 45; jet at PA 0; faint jet at PA 85; tail gap at PA 50; faint streamer at PA 40. Central condensation not seen well at high power. Coma not quite symmetrical and had some very faint radial streaks from center outward. Streamer or jet noted at about PA 0 approximately 10' arc long. Other faint radial streamer at 85 about 4' arc long. Central condensation about 10" to 20" arc in diameter and diffuse. Central spine in tail visible at PA 45 about 15' to 20' arc long. "Hole" or void noted on SE part of coma along central spine. Tail became fainter at 0153 hrs. along from void down south part of tail very suddenly. Tail condensations at 1/2 deg. and 1 deg. from nucleus. Faint streamer in tail about 20' arc from nucleus, about 10' arc long. Magnification of 240x also used.

NOTE B Only 1 tail at PA 60.

NOTE C Central condensation near stellar. Southern tail component at PA 63 deg., approximately 4.4 arc min. Northern (main) tail component at PA 52 deg. approximately 12.8 arc min. by 2.8' at root tapering to 1.6'. Semi latus rectum (S) approximately 2.4 arc min. Semi latus rectum (N) approximately 1.6 arc min. Vertex distance approximately 2.0 arc min. Central condensation near stellar and of high contrast with respect to the surrounding coma. Central condensation appeared "planetary" at lower powers but more diffuse at 130x. The coma appeared asymmetrical with the vertex distance different to the (unequal) semi-latus rectum values. Two principal features were observed as tail structures with a hint of a streamer between them. The northernmost of these tail components formed the principal long tail.

NOTE D Intense central condensation displaced PA 230 from centre of coma. Tail PA 50 straight, brighter on north edge. South edge defined but diffuse material between. Tail bright for about 10' then faint and fan shaped to overall length 33'.

NOTE E Tail at PA 65 deg. Hood at PA 200-260. Coma spur at PA 130. Hood is a difficult object. Tail shows some irregularities.

NOTE F Field 60'. Central condensation of stellar appearance. Tail difficult to see due to light pollution.

NOTE G Diameter = 8'x6', DC = 7. Coma size estimated as 1/3 distance between stars 6.3 and 6.0 just south of comet. Coma slightly elongated in direction PA 60-240. Tail noticeable, 70', PA 55. South preceding edge the more obvious.

NOTE H Coma bright, condensed, DC 6, with unresolved centre. At 170x there is still a faint unresolved nucleus. No jets. Roughly circular, diameter 4'. "Fan" very faint, not well defined. "Spine" of tail faint, 12' long at PA 50 deg.

NOTE I The coma has an interesting size and shape. From the outer part of this surge to the east a bright "appendix", which seems to be the start of the cometary tail. With a Celestron 8" the nucleus appears stellar and pointing to the west, that is, to the sun. [sic] (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)	ACON#	FL	f/	Ap	POV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
3.718	850595	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y		304/P		Jager,M	A
3.746	850596	0.500	5.6		4.1 x 2.7	8.00	Kodak Tri-X	400/	N	X	11/P	1	Ward,A	B
3.751	850597	0.200	4.5		10.3 x 6.9	2.00	3M	1000/	N	O	23/T	1	Martin,D	
3.754	850598	0.200	4.5		10.3 x 6.9	2.00	3M	1000/	N	O	24/T	1	Martin,D	
3.758	850599	1.000	8	0.125	2.1 x 1.4	2.00	Agfa-Pan Pro	400/27	N	M	18/C	2	Trixler,F	C
3.761	850600	0.500	8		4.1 x 2.7	8.00	Fujichrome	400/27	N	O	5/S	1	Townsend,R	
3.777	850601	0.500	5.6		4.1 x 2.7	8.00	Kodak Tri-X	400/	N	X	15/P	1	Ward,A	B
3.783	850602	0.200	4.5		10.3 x 6.9	4.00	3M	1000/	N	O	25/T	1	Martin,D	
3.786	850603	0.200	4.5		10.3 x 6.9	4.00	3M	1000/	N	O	26/T	1	Martin,D	
3.791	850604	0.200	4.5		10.3 x 6.9	3.00	3M	1000/	N	O	27/T	1	Martin,D	
3.794	850605	0.200	4.5		10.3 x 6.9	3.00	3M	1000/	N	O	28/T	1	Martin,D	
3.802	850606	0.400	6.3		5.2 x 3.4	3.00	3M	1000/	N	O	29/T	1	Martin,D	
3.805	850607	0.400	6.3		5.2 x 3.4	3.00	3M	1000/	N	O	30/T	1	Martin,D	
3.810	850608	0.400	6.3		5.2 x 3.4	4.00	3M	1000/	N	O	31/T	1	Martin,D	
3.815	850609	0.400	6.3		5.2 x 3.4	4.00	3M	1000/	N	O	32/T	1	Martin,D	
3.819	850610	0.400	6.3		5.2 x 3.4	3.00	3M	1000/	N	O	33/T	1	Martin,D	

NOTE A Coma 25 (greater than) 20 arc min. [sic]; magnitude 4; tails 3 deg. at PA 60, greater than 5 deg. at PA 64. (Print submitted is composite of two 3 min. exposures separated by 3 min. Ed.) Instrument is Schmidt camera.

NOTE B UV filter used.

NOTE C City lights interfered with the observation.

DATE: 4 JAN 1986

NETWORK: AMATEUR OBSERVATION

DATE: 4 JAN 1986

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	
4.003	815156	5.2	B	100		5	0.62	63	0.05	B		7	5.0	N	3	Benavides,A		
4.003	815157	5.2	S	100	6.5	5	0.18	60	0.035	B		7	5.3C	Y	3	Morrison,W		
4.104	815158	5.5	S	4A	10	6	0.5	280	0.080	B		11		Y	3	Pryal,J	A	
4.219	815159	4.7	M	4A	22	7	0.75	290	0.05	B		10	5.5	Y	1	Fabre,R	B	
4.229	815160	5				4			0.050	B		7	6.0	Y	2	Krisciunas,K	C	
4.372	815161	4.8	M	100	7	7			0.030	B		8	4.5CT	Y	2	Kato,T		
4.375	815162	5.1	M	100	5	7	0.25	70	0.06	R	13.3	40	4.5CT	Y	2	Kato,T		
4.38	815163	4.3	S	4A	10	6	1.33	60	0.08	B		11	6.0	N	3	Momose,M		
4.389	815164	4.8	S	100	4	4		50	0.153	N	8.6	33	3.5	Y	1	Iwaki,Y		
4.41	815165	5.0	M	SAO	7	5	0.67	65	0.06	R	12	22	3.5	Y	4	Nakamura,A		
4.427	815166	5.3	M	100	5.7	6			0.2	C	10	50	5.5	Y	3	Ichikawa,K		
4.43	815167	5.0	S	AAVSO	4	5	0.5	65	0.13	N	6.3	24	4.5	Y	1	Hayashi,A		
4.431	815168	4.9	S	100	11	5	0.67	60	0.07	B		10	5.5	Y	3	Ichikawa,K		
4.433	815169	4.9	B	100		7	0.2	60	0.050	B		7	6.0	Y	2	Bembrick,C	D	
4.440	815170	5.0	S	100		7			0.05	B		10	4.0	Y	1	Williams,P.F		
4.44	815171		SAO		8	7	0.33	85	0.15	N	6	23	4	Y	2	Tanikawa,M	E	
4.44	815172	4.9	B	SAO					0.05	B		7	4	Y	2	Tanikawa,M		
4.44	815173	5.3	M	100	4.7	6			0.080	B		11	4	C	N	5	Watanabe,N	
4.445	815174				4	8	0.1	85	0.15	N	8	50	4.0	Y	1	Williams,P.F		
4.448	815175	5.5	B	100	2.5	6	0.42	55	0.08	R	12.5	40	6.0	Y	1	Feisberg,J		
4.50	815176	5.5	B	M	5	7	0.4	45	0.05	B		7				Konstantinov,S		
4.54	815177	5.0	B	M	5	7			0.05	B		7				Sikoruk,L		
4.54	815178	4.5	B	E	18				0.03	B		8				Zagaynov,V.A		
4.55	815179	4.8	B	E	16				0.03	B		8				Zagaynov,V.A		
4.55	815180	4.4	B	E	18				0.03	B		8				Zagaynov,V.A		
4.55	815181	4.8	B	E	18				0.03	B		8				Zagaynov,V.A		
4.56	815182	4.9	B	E	19				0.03	B		8				Zagaynov,V.A		
4.57	815183	4.8	B	E	18				0.03	B		8				Zagaynov,V.A		
4.58	815184	4.9	B	E	20				0.03	B		8				Zagaynov,V.A		
4.583	815185	5.8	M	100	6.2	6			0.254	N	6	61	4.7	Y	1	Bhadriah,L.H.E	F	
4.59	815186	4.7	B	E	18				0.03	B		8				Zagaynov,V.A		
4.62	815187	5.0	B	100	4	6	0.2		0.045	B		7	4.0	Y	1	Spell,J	G	
4.67	815188	4.6	S		7	7	1.7	64	0.050	B		9	7.5	Y	2	Pesci,S	H	
4.690	815189	5.4	B	100		7			0.050	B		12	3.0T	Y	1	Mosch,J		
4.696	815190	5.0	M	AAVSO	7	9			0.063	R	13.3	52				Kosa-Kiss,A	I	
4.698	815191	5.9	B		7.0	4	0.2		0.200	N	7.2	36	3.5TC	Y	1	Lipski,P		
4.70	815192	4.0		DCS 7		6				EY		4	C	N	2	Kroon,B	J	
4.708	815193	5.0	S		6	8	1.5	90	0.05	B		10	5.5	Y	1	Bremseth,P.-J		
4.7118	815194	5.2	B	100		7	0.67	61	0.05	B		10	6.3T	Y	1	Franciosi,C	K	
4.719	815195	4.6	B	100		7			0.050	B		7	5.0	N	1	Lunde,R	L	
4.719	815196	5.0					1.2	60	0.080	B		15	4	Y	2	Nagele,A	M	
4.719	815197	4.6	B	IHW	5.0	6	2.5	64	0.080	B		20	5.2	Y	1	Guthier,O	N	
4.72	815198	4.7	S	DCS 7					0.040	B		12	5	Y	3	Feijth,H		
4.722	815199	5.5	M	123	5.0	6			0.114	N	8	36	4.5	N	1	Pennelli,G		
4.726	815200	4.8	S	100		7			0.030	B		8	4.5C	N	1	Bernardis,A		
4.726	815201				4.8	7	1	308	0.250	N	6	55	5.0	N	1	Lunde,R	O	
4.73	815202	4.9	B	100	6	6			0.050	B		7	C	Y	1	Jannink,D.W	P	
4.730	815203	4.7	M	100	6	7	0.5	60	0.089	R	5.5	18	5.0	N	1	Ventura,F	Q	
4.732	815204	5.2	B	100	6.8	7	0.40	90	0.330	N	4.5	59	6.3	Y	1	Castino,R		
4.733	815205	4.1	S	100	10	6		63	0.08	B		20	6.5	Y	2	Parasio,R		
4.736	815206	5.1	B	100	7.7	7	0.42	83	0.056	B		8	4.7C	N	1	Fischer,D	R	
4.74	815207	4.7	S	100		7	0.6	68	0.08	B		15	5.0C	Y	1	Glowinski,C	S	
4.743	815208	5.3	B	100	5.8	8	0.83	83	0.14	SN	3.6	28	4.6C	N	1	Fischer,D	R	
4.743	815209	4.8	M	100	15	7	0.6	64	0.05	B		12	5.5	Y	1	Tanti,T	T	
4.745	815210	4.2	S	100	6.0	4			0.05	B		7	4.7C	Y	1	Haver,R		
4.747	815211	5.4	B	100					0.050	B		10	4.0	N	1	Lehmann,T		
4.748	815212	3.9	S	100	6	7			0.080	B		20	4.5C	N	5	Meozzi,D		
4.75	815213	5.6	M	100		5			0.15	N	8	56	5.0C	Y	1	Sardini,D		
4.75	815214	5.0	B	DCS 7	12	5			0.063	B		8	3.5C	N	1	Geenen,J.J		
4.7534	815215	5.5	B	100	7	6	0.08	80	0.080	B		11	4.0C	Y	1	Broglioni,A	U	
4.76	815216	4.4	B	4A	18	6	1.75	62	0.050	B		7	5.5	Y	2	Merlin,J.-C		
4.763	815217	5.1	B	100	7	6	0.38	90	0.050	B		16	6.3	Y	1	Castino,R		
4.778	815218	4.9	M	100	4	3	1	65	0.06	R	5.7	20	5.8	Y	2	Cardiel,N		
4.781	815219	4.8	B	4A	8	4	1.0		0.05	B		60	5.5	Y	3	Gallejo,J		
4.785	815220	4.8	B	4A	15	7			0.206	N	6	20	5.5	Y	1	Gomez,A	V	
4.79	815221	5.1	B	AA	9	6			0.050	B		7	4.5	N	1	Schmeer,P	W	
4.79	815222	5.0			4		0.07		0.034	B		9	8	Y	1	Perelra,A	X	
4.7916	815223	5.1	B	AAVSO		3			0.05	B		7	5.5	Y	1	Sicoli,P		
4.792	815224	4.7	B	4A	5				0.05	B		8	6	Y	1	Cano,M		
4.800	815225	5.6	B	4A					0.050	R	5.6	30		Y	1	Mendez,J	Y	
4.813	815226	4.8	B	4A	10		1.5		0.256	N	5.6	44		Y	2	Pedraz,S		
4.94	815227	4.5	M	AA					0.050	B		7				Green,D.W.E		
4.94	815228	4.5	S	AA	10	8			0.050	B		7				Green,D.W.E	Z	
4.94	815229	4.7	S	AA	9	7			0.080	B		20				Green,D.W.E	Z	
4.95	815230	4.5	M	AA	9	7			0.080	B		20				Green,D.W.E	Z	
4.969	815231	5.0	B	100	6	3	0.60	62	0.05	B		7	6.0			Laird,R		
4.98	815232	4.8	B	AAVSO	8	7	2.0	65	0.050	B		10				Bortle,J.E		
4.98	815233	4.3	M	AA					0.035	B		7				Green,D.W.E		
4.98	815234	4.4	S	AA	10	7			0.035	B		7				Green,D.W.E	Z	
4.98	815235	4.8	S	AA						EY						Bortle,J.E		
4.993	815236	5.1	M	100	7.6	8	2.1	62	0.05	B		12	6.32	Y	1	Knight,S	a	

NOTE A (Observer gave limit as 10. Ed.)

NOTE B (PA value appears to be measured incorrectly. Ed.)

NOTE C Strong zodiacal light.

NOTE D Suspected tail?

NOTE E m2 (observer's symbol believed to mean "approximately equal to", Ed.) 10.

NOTE F Slight tail; with averted vision, about 1/2 degree.

NOTE G Comet low above horizon.

NOTE H On Jan. 4.7 also noted with 4.5 inches Newtonian f/8 at 45x a jet 15 arc min. long at PA 50 deg. [very faint].

NOTE I Naked eye!

NOTE J Tail length determined in 15x80 binoculars: 2.4 deg.

NOTE K Seeing worst.

NOTE L Deep twilight.

NOTE M (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are 31 Aqr, 32 Aqr.

NOTE N Brighter core.

NOTE O Tail length is upper limit.

NOTE P Telescopic limit is 6.5.

NOTE Q Tail length (I) 0.5 deg; (II) 0.3 deg.

NOTE R PA approximate.

NOTE S Hazy.

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NOTE T Seeing good, transparency excellent.  
 NOTE U I perceive detail. (Roughly translated by IHW staff. Ed.)  
 NOTE V Drawing 1.  
 NOTE W Omicron Agr: 4.7 mag., 32 Agr: 5.3 mag.  
 NOTE X Tail length very uncertain. (Observer gave limit as 8. Ed.)  
 NOTE Y See draw. D.1.  
 NOTE Z Coma diameter approximate.  
 NOTE a Dust tail.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
4.224	830660	6	0.33	N	4.5	50, 70, 100	15	5.5	1	Fabre, R	A
4.44	830661	1.38	0.15	N	6	23	14	4	2	Tanikawa, M	B
4.696	830662		0.063	R	13.3	52				Kosa-Kias, A	C
4.70	830663	1.04	0.114	N	8	45	86	7.5	2	Pesci, S	D
4.734	830664	2	0.05	R	7	30, 35, 40	45	4.0	5	Kopp, M	E
4.743	830665	2.97	0.035	R	14	12, 15		5.3	1	Sajitz, A	F
4.760	830666	0.25	0.356	SC	11	200	30		1	Verdenet, M	G
4.764	830667		0.25	N	6	75			1	Guthier, O	H
4.778	830668	2.6	0.06	R	5.7	20	20	5.8	2	Cardiel, N	I
4.781	830669		0.050	B		20			3	Gallego, J	J
4.785	830670		0.206	N	6	60		5.5	8	Gomez, A	K
4.792	830671		0.050	B		8			1	Cano, M	L
4.795	830672	0.2	0.11	R	11	30, 70	30	5.5	1	Adamoli, G	M
4.797	830673	0.5	0.15	N	5	25, 75	15	5.5	2	Merlin, J.-C	N
4.813	830674		0.256	N	5.6	44			2	Pedraz, S	O

NOTE A The north (PA 0 deg.) semi latus rectum is still longer than the south portion. The bright spine in the center of the tail is clearly visible. Note the clean straight line of the tail on the northern upper section. Two drawings supplied at scales of 6 arc min./mm and 10 arc min./mm. Magnification of 150x also used.

NOTE B ml = 4.9. Dia. = 8". DC = 7/10. m2 and feature at PA 85 (observer's symbol believed to mean "approximately equal to", Ed.) 10 and 20' long, respectively.

NOTE C Schematic drawing. (Duration not indicated. Time of observation is assumed to be end time. Ed.)

NOTE D Coma DC 7/8; about 7' diameter. Clearly visible main tail jet-like at PA 64, about 1.7 deg. long. (Estimate made with 12x50 binoculars.) Seen a probable second tail (sic); PA 50 deg. about 15' long (1/4 deg.) very faint. No special feature in comet's coma. Field 1.9.

NOTE E Stability of star images: fair; temperature: 0 deg. C. Coma bright, shows definite intensity peak at center; great latitude of tail, bright(!) too. Vertex distance: V = 14.0'. Semi latus rectum: P1 = 11.5', P2 = 10.5'. Tail PA = 55 deg. Magnifications of 15, 20, 25 also used. City lights interfered with the observation.

NOTE F Coma 10'; tail at PA 60-65 (plot), length 1.3 deg. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE G (Additional drawing submitted made using 11x80 binoculars (2.01"/mm). Ed.)

NOTE H Condensation conspicuously bright. Jets in PA 126, 45" and PA 63, 36". (Translated by IHW staff. Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE I Tail long: 1 deg. at PA 65.

NOTE J Field 3 deg. Stellar central condensation. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

NOTE K (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE L Field 9 deg. Limiting magnitude through binoc.: 9.0. (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)

NOTE M Tail at PA 80. Central condensation of coma little and very bright. City lights interfered with the observation.

NOTE N Tail at PA 62, nearly parallel edges, very condensed over 15'; jet at PA 141, diffuse; jet at PA 319, more contrasted. Plume sunward.

NOTE O (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
4.012	850611	0.058	1.4		34.5 x 23.4	10.00	Kodak Tri-X		N	T	4/C	1	Priester, D.C	A
4.060	850612	0.305	2.5	0.122	6.8 x 4.5	20.00	Kodak 2415		Y	S	166/P	1	Minton, R.B	B
4.715	850613	7.417	7.3	1.016	0.3 x 0.2	40.00			N		1/N	1	Manulis, I	C
4.769	850614	0.600	1.7	0.350	3.4 x 2.3	13.00	Kodak Tri-X	400/	N		1/T	1	Molinari, L	D
4.777	850615	0.803	2.1	0.350	2.6 x 1.7	1.00	Kodak 103a-F		N	M	31/P	1	Guarro, J	E
4.785	850616	0.803	2.1	0.350	2.6 x 1.7	7.50	Kodak 103a-F		N	M	132/P	1	Guarro, J	F
4.803	850617	0.600	1.7	0.350	3.4 x 2.3	35.00	Kodak Tri-X	400/	N		2/T	1	Molinari, L	G
4.981	850618	0.225	1.7	0.140	9.1 x 6.1	4.25	Kodak 2415		Y	S	3/P	1	Dilsizian, R	H

NOTE A Push processed to 800 ASA.

NOTE B (Prints submitted by observer are composites of five contiguous 4 min. exposures. Ed.) Instrument is Aero-Ektar aerial camera lens.

NOTE C Instrument is Ritchey-Chretien design. Observer assisted by E. Drucker.

NOTE D Instrument is Schmidt camera. (Observer supplied other nonessential notes on original report form. Ed.) 120 size film used.

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

NOTE F (Observer's image identifier is 32A. Ed.)

NOTE G Kodak Wratten 36 filter used. Instrument is Schmidt camera. (Observer supplied other nonessential notes on original report form. Ed.) 120 size film used.

NOTE H Stellar guiding was used because of extremely small apparent movement of the comet within the exposure period (movement during a 24 hour period was 2 minutes of arc [sic] in RA and approximately 0.2-0.3 degrees of arc in declination during this period). The 5.5" Schmidt camera gives a strong "hot spot" near the center of the frame.



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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	
5.007	815237	5.5	B	100	20	6	2	85	0.06	R	8.3	30	4.7	N	1	Fox,J.H	A	
5.010	815238	4.6	B	100					0.080	B		20	5.8	Y		Smith,D		
5.018	815239	6.1	M	100				0.67	90	0.050	B	10	5.0	Y	1	Smith,A	B	
5.028	815240	4.8	M	101	30	7	1.5	65	0.080	B		20	5.4	Y	2	Ariail,R.B		
5.028	815241									EY			5.5	Y	1	Stephan,C	C	
5.031	815242			100	30	7	0.30	292	0.200	SC	10	78	6.2	Y	2	Saraceno,J	D	
5.031	815243	5.1	B	100					0.050	B		7				Saraceno,J		
5.063	815244	5.3	S	100	7.6	6			0.080	B		11	4.5C	Y	1	Bailey,G	E	
5.07	815245	4.8	V	4A						EY		8	6.0	Y	1	Keen,R		
5.08	815246	4.9	4A		8	7	2.4	60	0.040	B		8	6.0	Y	1	Keen,R	F	
5.094	815247			100	4.8	5			0.20	SC	10	70	4.5C	Y	1	Bailey,G	G	
5.1632	815248	4.8	S	DCS	5	4			0.050	R		7	5.0C	Y	3	Machholz,D		
5.376	815249	4.8	B	100					0.05	B						Hayashi,H		
5.376	815250				10	6	0.75		0.12	N	6	40				Hayashi,H		
5.385	815251	5.0	M	100	4.5	8	1.5		0.08	B		11	5	Y		Mitsuma,S	B	
5.389	815252	4.7	M	100	7	7	0.33	70	0.06	R	13.3	40	4.5C	Y	2	Kato,T		
5.389	815253	5.1	B	4A					0.035	B		7				Okada,M		
5.39	815254	4.7	S	100	5	7			0.07	B		10	4.0C	Y	1	Yasuki,M		
5.393	815255	4.5	M	100	8	8	0.50	70	0.030	B		8	4.5C	Y	2	Kato,T		
5.40	815256	4.9	M	100			1.2		0.05	B		7	5.5	Y	1	Suzuki,K		
5.40	815257			100	3.3	5			0.21	N	5.0	88	5.5	Y	1	Suzuki,K	I	
5.402	815258	4.2	M	100	7.6	6			0.12	N	6	36	4.0C	Y	1	Kishi,A		
5.406	815259	4.2	M	100	6.2	7			0.1	N	10	40	3.5	Y	1	Ichikawa,K		
5.41	815260	4.7	S	AAVSO	8	6	1.2	65	0.13	N	6.3	24	6.5	Y	1	Hayashi,A		
5.417	815261	4.7	B	100		7			0.05	B		7	5.0C	Y	1	Hasegawa,T		
5.42	815262	4.2	S	100	5	7	1.0		0.08	B		15	5.3TC	Y	1	Lovejoy,T		
5.42	815263	5.0	M	SAO	9	6	1.6	65	0.06	R	12	22	4.5	Y	5	Nakamura,A		
5.42	815264	4.8	B		10	6	0.83	300	0.05	B		10	5.0	N	1	Uda,K	D	
5.43	815265	4.9	B	100	3.4	8	1.5	70	0.05	B		7	4.0	Y	1	Kanai,K		
5.431	815266	4.9	B	100					0.07	B		10	5.0	Y	1	Date,M		
5.451	815267	4.9	B	100	4.0	7	1.9		0.070	B		10	5.0	Y	2	Nakamura,Y		
5.451	815268			100	2	5			0.152	N	8	64				Tregaskis,T.B	J	
5.455	815269	5.3	S	100		3			0.05	B		10				Tregaskis,T.B	K	
5.52	815270	4.8	B	E	14				0.03	B		8				Zagaynov,V.A		
5.52	815271	4.9	B	E	16				0.03	B		8				Zagaynov,V.A		
5.52	815272	4.9	B	M	5	7	0.4	40	0.05	B						Konstantinov,S		
5.54	815273	4.7	B	100		6			0.030	B		8	5.4	Y		Pearce,A		
5.54	815274	4.6	S	100					0.030	B		8	5.4	Y		Pearce,A		
5.54	815275	4.8	B	100	7.5	7			0.065	B		20	5.4	Y		Pearce,A		
5.54	815276	5.0	B	M	5				0.05	B		7				Sikoruik,L		
5.54	815277	4.6	B	E	16				0.03	B		8				Zagaynov,V.A		
5.54	815278	5.7	B	E	18				0.03	B		8				Zagaynov,V.A		
5.54	815279	5.0	B	E	16				0.03	B		8				Zagaynov,V.A		
5.55	815280	5.1	B	M	3	5			0.05	B		7				Petrov,P		
5.56	815281	5.1	S	E	16				0.03	B		8				Zagaynov,V.A		
5.57	815282	5.0	S	E	15				0.03	B		8				Zagaynov,V.A		
5.58	815283	5.1	S	E	15				0.03	B		8				Zagaynov,V.A		
5.59	815284	5.4	B	E	16				0.03	B		8				Zagaynov,V.A		
5.594	815285	4.7	M	100	5.0	6			0.254	N	6	61	4.7	Y	1	Zagaynov,V.A		
5.60	815286	4.2	V	M					EY							Bhadriah,L.H.E	L	
5.68	815287	4.9	B	AAVSO	6	6	0.8	66	0.20	N	4	30				Poroshin,A		
5.691	815288	5.0	B	CZ	15	5	1	40	0.04	B		7	6.1	Y	1	Selevich,G		
5.691	815289	5.6	S	100	3	4			0.064	R	12	20	5.1C	N	1	Brancik,K		
5.694	815290	4.9	M	CZ		5			0.05	B		7	4.6			Urbanski,P		
5.697	815291	4.4	M	CZ	23				0.10	B		25	4.7C	Y	1	Pravec,P		
5.70	815292	5.5	M	AA	3	7	0.6	80	0.106	R	5.7	24				Valasek,V	M	
5.70	815293	4.1	DCS	7		6			EY				5	C	N	2	Keszthelyi,S	N
5.700	815294	4.7	M	100	7.5	7			0.089	R	5.5	18	5.5	N	1	Kroon,B	O	
5.701	815295		CZ		3.5	3	1	60	0.10	N	6	38	4.6			Ventura,F		
5.701	815296	5.2	M	100	8	5			0.064	R	12.5	31	4.0C	Y	2	Pravec,P		
5.708	815297	3.8	S	100	9	7			0.080	B		20	4.2C	N	5	Szymocha,M	P	
5.708	815298	5.2	B	100		4			0.064	R	6.3	10	5.0	Y	2	Meozzi,D		
5.71	815299	4.8	B	M					0.08	B		40				Paradowski,M		
5.712	815300	4.8	M	AAVSO	9	9	0.3	80	0.063	R	13.3	52				Palko,Yu		
5.712	815301	5.0	M	CZ	6	7			0.05	B		7	5.3	Y	1	Kosa-Kiss,A	Q	
5.715	815302	5.5	B	100	13.4	6			0.066	R	15.2	30	4.5	Y	1	Silhan,J	R	
5.715	815303				5.2	7	1	306	0.250	N	6	55	5.5	N	1	Gora,D		
5.717	815304			100		8	1.0		0.030	B		8	5.5	Y	6	Lunde,R	S	
5.7187	815305	4.9	S		22	8	0.82	48	0.08	B		10	5.4	Y	1	Villa,M		
5.72	815306	4.4	B	AAVSO	8	6	2	60	0.05	R	4	7				Zasik,M		
5.720	815307	4.9	B	100					0.050	B		10	6.5	Y	1	Chernis,K	T	
5.722	815308	4.8	M	CZ		8			0.080	B		10	4.0	N	1	Trebacz,A		
5.722	815309	4.6	B	100		7	1.5		0.050	B		7	5.5	N	1	Bilek,V	U	
5.725	815310	5.5		100	2	6	0.8	92	0.06	R	6.9	20		Y	1	Lunde,R		
5.726	815311	4.9	M	100	11	6	1.0	62	0.07	B		20	5.5	Y	1	Guerrini,F		
5.729	815312	4.8	M	100	6	8			0.05	B		10	5.0Z	Y	8	Tanti,T	V	
5.729	815313	5.2	B	100	15	7	1	75	0.08	B		20	5	N	2	Melandri,F	W	
5.729	815314	5.1	B	100		4			0.05	B		7	4.5	Y	2	Knain,E	X	
5.729	815315	4.6	B	CZ	9	6	0.8	30	0.10	B		25	6.2	Y	2	Paradowski,M		
5.729	815316	5.0	B	CZ		3			0.03	B		6	5.5			Polak,J		
5.73	815317	5.5	B	100	7.9	9	0.4	65	0.203	SC	10	44	5.8C	Y	2	Vaclik,F	Y	
5.733	815318	5.0	B	100					0.050	B		10	6.5	Y	1	Maraziti,A	Z	
5.7395	815319	5.3	B	100	7	6	0.17	80	0.080	B		11	4.0C	Y	1	Slusarczyk,J		
5.74	815320	4.9	S	100					0.08	B		10	4.3			Brogioni,A	a	
5.740	815321	5.4	M	CZ		3			0.060	B		12	5.4	Y	1	Shanklin,J.D	b	
5.74	815322	5.0	B	100	10	8	0.4	60	0.05	B		7	5.8C	Y	2	Barak,R		
5.742	815323	4.9	M	100					0.030	B		8	5.5	Y	6	Maraziti,A	c	
5.743	815324	4.6	S	100					0.08	B		11		N	1	Villa,M		
5.743	815325	5.3	M	100		6			0.08	B		10	4.0C	N	1	Gainsford,M.J	d	
5.750	815326	4.8	M	100	10	4			0.05	B		10	5	C	Y	1	Rapavy,P	e
5.750	815327	6.0	B	100	4	5	0.4	70	0.050	R	5.6	19	6.2	Y	2	Menichetti,R		
5.757	815328	4.7	B	4A	25	7	1.5	85	0.06	R		25	5.5	Y	1	Sciezor,T	f	
5.757	815329	4.8	M	100					0.05	B		12	5.5	Y	1	Ward,A	g	
5.770	815330	4.7	B	100					0.03	B		8	5.5	Y	1	Tanti,T	V	
5.770	815331		B	100	6	6	1	65	0.07	B		20	5.5	Y	1	Fillimon,E	h	
5.771	815332	4.1	B	CZ		5			0.08	B		10	5.6	Y	1	Fillimon,E	b	
5.781	815333	5.9	M	100	60	3			0.070	R	14	20	6.0	Y	1	Eliaas,P		
5.781	815334	4.7	B	100	18		0.92	45	0.030	B		8	5.3	Y	2	Luga,M		
5.781	815335	5.1	M	100	8	7	2.2	63	0.050	B		7	7.0T	Y</				

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Date(UT)	ACN#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
5.791	815338	4.7	B	4A	15	7	1	90	0.030	B		8	5.5	Y	1	Ward,A	
5.792	815339	4.9	M	100	3	5			0.06	R	5.7	20	4.9C	Y	3	Cardiel,N	
5.795	815340	4.6	S	100	8	7	1	50	0.065	B		12	5.0	N	1	Foulkes,M	k
5.809	815341	5.2	M	100	22	6			0.050	B		10	4.5C	Y	1	Lozano,L	
5.809	815342	4.9	S	100	11	7	0.83		0.05	B		10	3.8	Y	1	Hurst,G.M	1
5.812	815343	4.9	S	100	11	8	0.83		0.08	B		15	3.8	Y	1	Hurst,G.M	1
5.96	815344	4.3	M	AA					0.050	B		7				Green,D.W.E	
5.96	815345	4.5	S	AA	10	7			0.050	B		7				Green,D.W.E	c
5.97	815346	4.4	M	AA					0.035	B		7				Green,D.W.E	
5.97	815347	4.6	S	AA	10	6			0.035	B		7				Green,D.W.E	c
5.972	815348	4.7	M	100	6	7	0.4	65	0.05	B		7	5.0	Y	1	DeYoung,J.A	
5.972	815349		B	100	8	3	0.67	58	0.05	B		7	5.0			Lairret,R	
5.978	815350					4			0.05	B		20	3.5	Y	8	da Silva,L.A.L	m
5.979	815351	4.9	S	100	5.0	7			0.203	N	6	101	4.5	Y	1	Hudak,D.M	
5.979	815352	5.2	M	100					0.050	B		7		Y	4	Torres,E	n

NOTE A SAO 145940 and SAO 145916 comparison stars.

NOTE B Tail length estimated by plots.

NOTE C 7x35 mm binoculars also used. Tail still bluish tint. Nucleus very stellar - a goldish-red color. Very colorful. This at 57x and 101x in 36.2 cm refl. Tail somewhat brighter and 1/4 deg. larger than on Dec. 31 UT.

(PA value may have been incorrectly determined. Ed.)

NOTE D Fine sight with star shining thru coma!

NOTE E Modified Sidgwick method used.

NOTE F Coma distended (or tail!).

NOTE G 7.9.

NOTE H Meter: coma diameter is P1 + P2.

NOTE I Round stellar-like nucleus. Clear and twilight.

NOTE J Clear and twilight. (Observer gave limit as approximately 6.5. Ed.)

NOTE K Slight tail, with averted vision, about 1/2 degree.

NOTE L Adapted to the actual (rather bad, street lights visible) observing conditions.

NOTE M + 7x50 B and 7.5 mag. nucleus + naked eye. [sic]

NOTE N Tail length determined in 15x80 binoculars: 3.0 deg.

NOTE O Small tail barely visible.

NOTE P Naked eye.

NOTE Q Mist, during the public observation with some 30 visitors.

NOTE R Tail length is upper limit.

NOTE S Tail length is lower limit. PA approximate.

NOTE T Clouds.

NOTE U Seeing good, transparency good/excellent. Clouds.

NOTE V Veiled sky.

NOTE W Dew, cold air.

NOTE X Probably well adapted, not dark adapted, of course - there is no dark sky in Czechoslovakia.

NOTE Y Elliptical coma.

NOTE Z I perceive detail. (Roughly translated by IHW staff. Ed.)

NOTE a Thin cloud clearing.

NOTE b Coma diameter approximate.

NOTE c Cloudy. Tail = ?, PA uncertain.

NOTE d Coma ellipt.

NOTE e Very clear skies.

NOTE f Faint blue colour.

NOTE g Unrestrained visibility. (Translated by IHW staff. Ed.)

NOTE h Visible with naked eye.

NOTE i Type I tail.

NOTE j Variable cloud.

NOTE k Fan tail, PA 65 to 81.

NOTE l Twilight.

NOTE m (Observer gave limit as 9.0. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
5.007	830675	0.6	0.203	R	13	85,150,225	10	4.7	1	Fox,J.H	A
5.018	830676		0.254	N	6	170	33	3.0	6	Troiani,D.M	B
5.698	830677	0.97	0.106	R	5.7	24	48	5.7	1	Keszthelyi,S	C
5.712	830678		0.063	R	13.3	52				Kosa-Kiss,A	D
5.724	830679	0.9	0.063	R	13.3	52			1	Csukas,M	E
5.732	830680	0.4	0.06	R	6.9	20	21	4.8	1	Guerrini,F	F
5.733	830681	0.05	0.100	B		25	30	3.8	1	Gojdic,S	
5.733	830682		0.050	R	5.6	19	10	6.2	2	Sciezor,T	G
5.738	830683	1.2	0.080	B		20	15	5	1	Inain,E	H
5.740	830684	0.35	0.203	SC	10	44, 77,167	30	5.8	2	Maraziti,A	I
5.755	830685	3	0.05	B	8	10	14	5	1	Menichetti,R	J
5.781	830686	0.21	0.203	SC	10	80,220	10	5.0	1	Foulkes,M	K
5.799	830687	1.99	0.065	B		12	10	5.0	1	Foulkes,M	L
5.814	830688	1.0	0.08	B		15	25	3.8	1	Hurst,G.M	M
5.977	830689		0.050	B		7	25		3	Cifuentes,E	N

NOTE A Inner coma circular, but has mottled appearance. Outer coma almost heart shaped: blunt to W with lobes necking in [sic] at

tail. Tail streaked, brighter along N edge. Nucleus slightly elongated NW-SE at 225x.

NOTE B Seeing (1-3): 2. Sky darkness (1-5): 1. Rays at PA 35 deg. and at PA 180 deg. Streamer at PA 95 deg. DC = 5.

NOTE C Tail 0.6 at PA 80.

NOTE D Schematic drawing. (Duration not indicated. Time of observation is assumed to be end time. Ed.)

NOTE E Total magnitude = 4.6; coma diameter 8'x6'; DC = 9; tail at PA 53, 17' length. A 20' tail had PA 95 10' to nucleus, PA 98

20' to nucleus, PA 101 23' to nucleus. [sic] (Duration not indicated. Time of observation is end time. Ed.) Schematic

drawing.

NOTE F Halley's Comet magnitude 5.5.

NOTE G Very good observing conditions. The skies perfectly free of any artificial light pollution. The comet visible by naked eye

as a patch of 5.5 mag. (Two drawings supplied at scales of 1.2 and 0.7 arc min./mm. Ed.)

NOTE H Diffuse, faint tail. Tail consists of long thin extremely diffuse filaments. Rays at PA 75.

NOTE I Elliptical coma - not pointlike (word translated by IHW staff. Ed.) nucleus. Tail at PA 65 clearly seen, maybe curved

towards north at its end. Coma diameter = 7.9'x7'; DC = 8. Vertex distance = 4'. Semi latus rectum P1 = P2 = 3.6'.

NOTE J Magnitude 4.8 (Bobrovnikoff method). Diameter 10', DC 4. Vertex distance = 4.5', semi latus rectum P1 = 4.5', P2 = 4.5'.

NOTE K Tail at PA 50, length 10'. Spike at PA 330, length 3'. Spike at PA 20, length 3'. Coma diameter = 5'x4'. DC = 6. Coma

slightly elliptical. Centre appeared as a small but bright spot. Slightly fainter elliptical area extended out at PA 110 deg.

Tail faint. Some slightly brighter areas were detected but these were faint (i.e., features given above).

NOTE L Coma diameter 8'x7', DC = 7. Coma slightly elliptical, centre bright - almost star like. Tail faint but obvious, 1 deg. at

PA 50.

NOTE M Tail overall length 50' fanned. PA 65-81. Bright for approximately one third of overall length then faint and widening.

Central condensation offset opposite to tail.

NOTE N Low altitude above horizon. Tail not seen well; seeing only beginning of both gas and dust tails. (Observer gave limit as

9.0. Translated by IHW staff. Ed.)

DATE: 5 JAN 1986

DATE: 5 JAN 1986

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
5.005	850619	1.970	5.5	0.355	1.0 x 0.7	6.00	Kodak 2415		Y	O	33/P	1	Crist,M	A
5.038	850620	0.420	8		4.9 x 3.3	20.00	Kodak Tri-X	400/27	N	O	021/P	1	Bro,M	B
5.048	850621	0.420	8		4.9 x 3.3	10.00	Kodak Tri-X	400/27	N	O	022/P	1	Bro,M	B
5.056	850622	0.152	2.0		13.5 x 9.0	12.00	Kodak 2415		Y	S	24/P	2	Minton,R,B	C
5.387	850623	1.760	5.8	0.300	1.2 x 0.8	13.00	Kodak 2415		Y	S	103/P	1	Nijima,T	D
5.393	850624	0.850	3.4	0.25	2.4 x 1.6	10.33	Kodak 6415		Y	C	6/P	1	Kojima,T	E
5.699	850625	0.500			4.1 x 2.7	20.00	Fomapan F27	400/27	N	O	3/N	1	Maturkanic,M	F
5.700	850626	0.750	6.3		2.7 x 1.8	13.00	ORWO	400/27	N	C	7/N	1	Znasik,M	G
5.702	850627	0.135	1.8		15.2 x 10.2	1.50	Fujichr. Pro	100/	Y		11/P	2	Conrad,R	H
5.727	850628	0.760	4	0.19	2.7 x 1.8	26.00	Ilford HP5		N	O	24/T	1	Mikuz,H	I
5.727	850629	0.250	4		8.2 x 5.5	26.00	Ilford HP5		N	O	2/T	1	Mikuz,H	J
5.741	850630	0.500	5.6		4.1 x 2.7	4.00	Kodak Tri-X	400/	N	X	2/P	1	Ward,A	K
5.747	850631	0.500	5.6		4.1 x 2.7	8.00	Kodak Tri-X	400/	N	X	3/P	1	Ward,A	K
5.754	850632	0.760	4	0.19	2.7 x 1.8	21.00	Ilford HP5		N	O	25/T	1	Mikuz,H	I
5.756	850633	0.500	5.6		4.1 x 2.7	15.00	Kodak Tri-X	400/	N	X	4/P	1	Ward,A	L
5.765	850634	0.760	4	0.19	2.7 x 1.8	4.00	Ilford HP5		N	O	26/T	1	Mikuz,H	I
5.968	850635	0.225	1.7	0.140	9.1 x 6.1	4.00	Kodak 2415		Y	S	4/P	1	Dilsizian,R	M
5.999	850636	0.500	3.6	0.140	4.1 x 2.7	20.00	Kodak 2415		Y	S	31/C	1	Chester,G,R	

NOTE A Clouds interrupted the session. Only one exposure possible. (Observer's image identifier is 33A. Ed.) City lights interfered with the observation. Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.

NOTE B Auxiliary lens used. Original instrument characteristics are FL = 0.210, f/4.

NOTE C Instrument is Kollmorgen lens. (Observer's image identifier is preceded by prefix K2-. Ed.)

NOTE D (Observer's image identifier is preceded by prefix Nj. Ed.)

NOTE E Instrument is Wright-Schmidt. Large format (120 size) film used.

NOTE F Twilight and city lights interfered with the observation.

NOTE G Large format (11.8x8.6 cm) film used.

NOTE H Zodiacal light interfered with the observation. UV filter used. (This probably means a UV blocking, clear glass filter. Ed.)

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

NOTE J 120 size film (6x6 cm).

NOTE K UV filter used.

NOTE L 021 yellow [sic] filter also used. UV filter used.

NOTE M Stellar guiding was used because of extremely small apparent movement of the comet within the exposure period (movement during a 24 hour period was 2 minutes of arc [sic] in RA and approximately 0.2-0.3 degrees of arc in declination during this period). The 5.5" Schmidt camera gives a strong "hot spot" near the center of the frame.

DATE: 6 JAN 1986

DATE: 6 JAN 1986

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
6.000	815353	4.7	S	100	15.4	8	0.5	68	0.108	N	4	24	5.0	Y	1	Franch,J	A
6.00	815354	4.8	B	AAVSO	8	6	2.0	65	0.050	B		10				Bortle,J.E	
6.00	815355				6	6	1	65	0.120	B		20				Bortle,J.E	B
6.00	815356				4	6	1	65	0.317	N	6	55				Bortle,J.E	C
6.01	815357	4.9	B	100	8		1		0.080	B		20		Y		Kronk,G	
6.010	815358	4.8	B	100					0.080	B		20	5.8	Y		Smith,D	
6.02	815359	5.1	B	100	12	6	1		0.050	B		10	4.5	Y	1	Birkner,A	D
6.02	815360	5.7	B	100	8.4	5.6	0.58		0.335	N	4.5	56		Y		Kronk,G	E
6.048	815361	6.3	M	100			0.50	90	0.050	B		10	5.0	Y	1	Smith,A	
6.05	815362	5.6	B	4A	10	3			0.035	B		7	4.5	Y	1	Jacobson,E	F
6.05	815363				42	3				EY		7	4.5	Y	1	Jacobson,E	
6.07	815364	4.8	V	4A						EY		7	5.5	Y	1	Keen,R	
6.07	815365	4.9	4A		8	7	2.2	60	0.040	B		8	5.5	Y	1	Keen,R	G
6.094	815366	4.8	M	100					0.050	B		7		N	3	Jeffrey,J	
6.208	815367	4.7	M	4A	22	7	1.17	290	0.05	B		10	5.5	Y	1	Fabre,R	H
6.38	815368	4.4	S	4A	10	6	1.17		0.08	B		11	5.5	Y	3	Momose,M	
6.39	815369	5.0	M	100	4.5	8	1.5	60	0.08	B		11	5	C	Y	Mitsuma,S	I
6.394	815370	4.5	M	100	7	7	0.50	60	0.030	B		8	4.5C	Y	1	Kato,T	
6.397	815371	4.7	M	100	4	7	0.33	55	0.10	N	10	55	4.5C	Y	1	Kato,T	
6.40	815372	5.0	B	100	4.5	7	1.8	60	0.05	B		7	4.0	N	1	Kasai,K	
6.40	815373	4.8	S	AAVSO	6.5	6	1.5	65	0.13	N	6.3	24	6.0	Y	1	Hayashi,A	
6.41	815374	5.0	B	AAVSO	5	6	1	65	0.07	B		10	6.0	Y	1	Hayashi,A	
6.412	815375	4.1	M	100	7.6	7			0.12	N	6	36	3.0C	Y	1	Kishi,A	
6.417	815376	5.3	B	100		5			0.05	B		7	4.0C	Y	1	Hasegawa,T	
6.424	815377	5.2	B	100					0.07	B		10	4.7	Y	1	Date,M	
6.438	815378	5.4	B	100	3.6	6	0.43	55	0.08	R	12.5	40	5.5	Y	1	Feisheng,J	
6.44	815379	5.0	B		10	6	0.7		0.16	M	4.8	24		Y	1	Maeda,S	
6.446	815380	4.6	S	100	8	6	1	80	0.07	B		10	5.5	Y	1	Kobayashi,J	
6.451	815381	5.5	S	100	10	3			0.050	B		12	3.5	Y	1	Batta,H	J
6.46	815382			SAO	10	7	0.17	85	0.15	N	6	23	3	Y	2	Tanikawa,M	K
6.46	815383	4.9	B	SAO					0.05	B		10				Tanikawa,M	
6.465	815384	5.6	S	100		4			0.152	N	8	64			1	Tregaskis,T.B	L
6.470	815385			100	3	4			0.05	B		7				Tregaskis,T.B	M
6.52	815386	5.6	B	M	5	6	0.1	61	0.03	B		8				Guryanov,S	N
6.54	815387	4.6	B	E	19				0.03	B		8				Zagaynov,V.A	
6.54	815388	4.6	B	E	17				0.03	B		8				Zagaynov,V.A	
6.58	815389	5.0	B	E	19				0.03	B		8				Zagaynov,V.A	
6.58	815390	4.9	B	E	20				0.03	B		8				Zagaynov,V.A	
6.58	815391	5.0	S	E					0.05	R	8	20				Zagaynov,V.A	
6.583	815392	5.1	M	4A	4.2	5			0.254	N	6	61	3.5C	Y	1	Bhadriah,L.H.E	O
6.60	815393	4.5	M	E	13				0.03	B		8				Zagaynov,V.A	
6.62	815394	4.8	B	E	10	4	2	63	0.05	B		7				Mormil,V	
6.63	815395	5.6	M		13	6	0.5		0.04	B		12				Maydik,A	
6.64	815396	7	B	M	8				0.04	B		8				Zinvyev,V.A	
6.65	815397	5.6	M	M	13	6	0.7		0.04	B		12				Maydik,A	
6.65	815398	5.3	B	M	9	4			0.07	N	8	33				Yurchenko,Yu	
6.66	815399	4.9	B	E	9	4	1	63	0.05	B		7				Mormil,V	
6.670	815400	5.2	M	100					0.060	R	4.5	10	4.5	Y	1	Chodorowski,F	P
6.67	815401	5.6	M		13	6	0.7		0.04	B		12				Maydik,A	
6.674	815402				15	5	0.08	67	0.064	R	12	32	4.5	Y	1	Chodorowski,F	
6.678	815403	5.3	M	100					0.030	B		6		Y	1	Chodorowski,F	
6.694	815404	5.0	B	100	12	7	0.3		0.050	B		7	5.5	Y	1	Bohme,D	
6.698	815405			100	3	4			0.150	R	15	56	3.0C	N	1	Richert,M	
6.70	815406	5.1	B	E	9	4	2	63	0.05	B		7				Mormil,V	
6.705	815407	5.9	B	100	5	5			0.064	R	6.3	20	3.0C		2	Maciejewski,W	
6.71	815408	3.7	DCS	7		6				EY		4	C	N	1	Kroon,B	Q
6.718	815409	5.0	B			3			0.080	R	6.2	12	4.0T		1	Lieder,F	
6.73	815410				7	4			0.05	B		7				Mormil,V	
6.733	815411				4.6	7	1	309	0.250	N	6	55	5.0	N	1	Lunde,R	R
6.736	815412	5.6	M	100	6.5	2	0.6	77	0.09	M	11	56	5.0	Y	3	Westlund,M	
6.7361	815413	5.4	B	100		7	0.75	65	0.05	B		10	5.4C	Y	2	Franciosi,C	D
6.740	815414	4.7	M	100	6	7	0.5		0.089	R	5.5	18	5.5	N	1	Ventura,F	S
6.748	815415	5.0	M	AAVSO	11	9	0.8	43	0.063	R	13.3	52				Kosa-Kiss,A	T
6.750	815416	5.1	B	100	7	6	0.37	80	0.050	B		16	6.2	Y	1	Castino,R	
6.75	815417	4.9	S	100					0.08	B		10	5.0		1	Shanklin,J.D	
6.75	815418	5.8	S	100					0.20	R	12	40	5.0		1	Shanklin,J.D	
6.750	815419	4.2	S	100	4.0	6	0.2	60	0.080	B		20	4.3C	Y	1	Baroni,S	U
6.750	815420	4.9	S	100		6	1.33	70	0.08	B		11	4.2	Y	4	Gainsford,M.J	V
6.75	815421	4.4	B	4A	15	6			0.050	B		7	5.0	Y	2	Merlin,J.-C	
6.753	815422	4.2		100						EY		4	2	Y	4	Gainsford,M.J	W
6.757	815423	5.1	S	100	3	6	0.65	60	0.050	B		10	5.0	Y	1	Rogers,J.H	X
6.760	815424	5.0	S	99, 100	8	6			0.065	B		12	4.5	N	1	Foulkes,M	Y
6.764	815425				4	6	0.25	50	0.200	R	14	40	5.0	Y	1	Rogers,J.H	Z
6.764	815426	4.8	B	4A	20	6	1	90	0.06	R		25	5	Y	1	Ward,A	a
6.771	815427	4.6	S	4A	7.2	6			0.08	R	15	40	4.5	Y	2	Storey,D	b
6.775	815428	4.7	S	100	11	8	0.30	50	0.05	B		10	4.0	Y	1	Hurst,G.M	c
6.781	815429	4.9	S	100	11	8	1		0.08	B		15	4.0	Y	1	Hurst,G.M	d
6.788	815430	4.8	B	4A					0.030	B		8	4.5	Y	1	van der Mey,L	e
6.788	815431						0.5	70	0.050	B		7	4.5	Y	1	van der Mey,L	e
6.896	815432	5.5	B	4A	20				0.08	B		15		Y	2	Losada,R	f
6.92	815433	4.6	S	AA	8	7			0.035	B		7				Green,D.W.E	g
6.95	815434	4.4	M	AA					0.080	B		20				Green,D.W.E	
6.95	815435	4.7	S	AA	8	7			0.080	B		20				Green,D.W.E	g
6.958	815436	5.1	B	100		6	0.68	65	0.05	B		7	5.4	N	1	Benavides,A	
6.958	815437	5.0	M	100	6.0	8	1	90	0.203	N	8	128	5.0	Y	1	Hannon,J	
6.96	815438	4.6	M	AA					0.050	B		7				Green,D.W.E	
6.96	815439	4.8	S	AA	8	7			0.050	B		7				Green,D.W.E	g
6.98	815440	4.8	B	AAVSO	6	7			0.050	B		10				Bortle,J.E	
6.985	815441	3.9	B	100		6		67	0.05	B		20	5.0	N	8	da Silva,L.A.L	J

NOTE A Gas tail.

NOTE B First 0.7 deg. of tail quite bright. Tail length is lower limit.

NOTE C Separate rays suspected in tail. Tail length is lower limit.

NOTE D Tail length approximate.

NOTE E Tear shaped coma. Tail PA 66 deg. to 76 deg.

NOTE F Condensation/cold.

NOTE G Modified Sidgwick method used.

NOTE H (PA value appears to be measured incorrectly. Ed.)

NOTE I 7.8.

NOTE J Twilight.

NOTE K m2 (observer's symbol believed to mean "approximately equal to", Ed.) 9.

DATE: 6 JAN 1986

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NOTE L Clear and twilight. (Observer gave limit as approximately 7. Ed.)  
 NOTE M Round coma. Fuzzy nucleus. Clear and twilight.  
 NOTE N Tail length is lower limit.  
 NOTE O Slight tail, with averted vision, about 1/2 degree. Poor seeing.  
 NOTE P Clouds.  
 NOTE Q Tail length determined in 15x80 binoculars: 1.8 deg.  
 NOTE R Tail length is upper limit. Some haze.  
 NOTE S Tail length (I) 0.5 deg.  
 NOTE T Naked eye.  
 NOTE U Fan tail at PA 40-100.  
 NOTE V Slight mist.  
 NOTE W Negative observation.  
 NOTE X Some haze. Coma size approximate. Straight tail.  
 NOTE Y Hazy.  
 NOTE Z Tail = diffuse spine, PA 50 deg. + hood with S edge in PA 100 deg. as in previous drawings but more distinct in tonight's better sky. Tail length approximate.  
 NOTE a Misty.  
 NOTE b Seeing III. Transparency = fair. Slight haze + sky glow.  
 NOTE c Tail length and PA approximate.  
 NOTE d Tail length approximate. PA 30 to 51.  
 NOTE e Mediocre visibility.  
 NOTE f Tail length is lower limit.  
 NOTE g Coma diameter approximate.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
6.007	830690		0.108	N	4	24	20	5.0	1	Franch,J	A
6.010	830691		0.203	SC	10	81			2	Lohvnenko,T.W	B
6.025	830692	0.44	0.203	N	6	61,116	10	5.5	1	Williams,J	C
6.031	830693	2	0.13	SC	10	32,100	20	6.0	1	Hays Jr,R.H	D
6.031	830694		0.203	SC	10	290			2	Lohvnenko,T.W	E
6.073	830695		0.445	N	4.5	50			2	Lohvnenko,T.W	F
6.214	830696	5	0.33	N	4.5	50, 70,100	15	5.5	1	Fabre,R	G
6.47	830697	1.38	0.15	N	6	23	14	3	2	Tanikawa,M	H
6.707	830698	0.06	0.100	B		25	25	3.8	1	Havrillak,M	
6.720	830699	0.05	0.100	B		25	15	3.8	1	Gojdic,S	
6.733	830700	1.6	0.090	M	11	56	10	5.0	3	Westlund,M	
6.740	830701	0.09	0.125	N	5.8	28, 40, 60	60	5.0	1	Riccabone,G	I
6.741	830702		0.080	B		20		5.8	2	Zanotta,M.V	J
6.748	830703		0.063	R	13.3	52				Kosa-Kiss,A	K
6.752	830704	0.11	0.298	N	5	40, 65,269	16	5.8	1	Stott,D	L
6.778	830705	1.2	0.08	B		15	40	4.0	1	Hurst,G.M	M
6.896	830706		0.080	B		15			2	Losada,R	N
6.995	830707		0.15	N	8	64, 98	76	5.0	1	Robotham,R	O

NOTE A Gas tail at PA 68; dust tail at about PA 75. The 4.7 magnitude comet's coma had an estimated extent of 15.4'. The nucleus was quite prominent and near 6.5 magnitude; it was, as yet, not completely starlike. The gas tail was fairly prominent extending for at least 0.5 deg. A developing dust tail was seen on the comet's northeast edge. Scale = 10.0"/mm.  
 NOTE B The comet is observed to have an integrated magnitude of 5.2 (check stars: HR 8615, HR 8688) and a nuclear magnitude of 6.9 (check stars: AG 3+0 deg. 0181). The PA of the ion tail is 40.5. The nuclear diameter is 71.06" and the coma diameter is observed to be 284.22". (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE C Bright coma, gradually brightening toward central condensation which is not quite starlike. I feel confident that a tail extends about 10' of arc or so in PA 90. This tail is very faint. No other detail. City lights interfered with the observation.  
 NOTE D Envelope spanned PA approximately 45-180. Vertex dist. = 4'. Quite diffuse and less than half-circle. Central spine at PA 70; NE streamer at PA 30; SE streamer at PA 110. Very tiny 'nucleus' mag. about 11, displaced slightly west of center in coma. Coma had mottled texture, like globular cluster.  
 NOTE E This close up of the comet clearly shows three spikes which are observed to be at PAs 42, 49.5, and 58. The coma is seen as a blue along with these bluish-yellow mixture of the spikes and ion tail. (sic) The nucleus is observed to be a golden white. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE F Through this telescope we can make out the ion tail very well. The tail is blue in colour and measured to be about 1.27 deg. (4591.33"). (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE G The north semi latus rectum was noted to be larger and extended greater than the south latus rectum. A brighter area (hot spot) was noted at PA 270 near the nucleus. A bright spine was noted in the center of the tail with a 'hot spot' in it. Magnification of 150x also used.  
 NOTE H ml = 4.9. Dia. = 8". DC = 7/10. m2 and features at PA 85 (observer's symbol believed to mean "approximately equal to", Ed.) 9 and 10' long each, respectively.  
 NOTE I Nebular region of greater luminosity at PA 58. Nucleus diameter 37 arc sec. Magnification of 80 and 144 also used. Two drawings included. Intense city lights interfered with the observation. (Translated by IHW staff. Ed.)  
 NOTE J Broad tail with central spine at PA 65 deg. Darker area that split the tail in two parts at PA about 60 deg. (Duration not indicated. Ed.)  
 NOTE K Schematic drawing. (Duration not indicated. Time of observation is assumed to be end time. Ed.)  
 NOTE L Hood 1 at PA 170. Hood 2 at PA 340. Tail at PA 44. Coma spur at PA 110. Nuclear condensation shows two hoods almost opposite each other and jet at PA 250 which almost seems "detached" from the nucleus condensation.  
 NOTE M Central condensation displaced PA 225 deg. in coma. Very intense almost star-like centre. Tail very broad, fan-shaped and diffuse, PA 30 to 51. Haze, low. 2LM 5.0, 5.5 variable.  
 NOTE N Faint tail, but truly long, more than earliest days (approximately greater than 2 deg.). (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE O Tail seen more easily at 64x than 98x. Drawn on 1986 Jan. 7.000 at 98x.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
6.006	850637	1.970	5.5	0.355	1.0 x 0.7	8.00	Kodak 2415		Y	O	34/P	1	Crist,M	A
6.007	850638	2.000	10	0.200	1.0 x 0.7	4.00	3M 1000	1000/	N	X	311/S	2	Woidyla,B	B
6.016	850639	1.970	5.5	0.355	1.0 x 0.7	16.00	Kodak 2415		Y	O	35/P	1	Crist,M	C
6.023	850640	0.500	3.6	0.140	4.1 x 2.7	20.00	Agfachrome	1000/	N		01/S	1	Chester,G.R	D
6.033	850641	2.000	10	0.200	1.0 x 0.7	4.50	3M 1000	1000/	N	X	315/S	2	Woidyla,B	B
6.044	850642	2.000	10	0.200	1.0 x 0.7	7.50	3M 1000	1000/	N	X	316/S	2	Woidyla,B	B
6.049	850643	1.530	6.0	0.254	1.3 x 0.9	2.83	Kodak 2415		Y	O	16/S	1	Lund,L	
6.055	850644	2.000	10	0.200	1.0 x 0.7	7.00	3M 1000	1000/	N	X	321/S	2	Woidyla,B	B
6.064	850645	0.400			5.2 x 3.4	4.50	Fujichrome	400/	N	X	340/S	2	Woidyla,B	B
6.108	850646	2.306	5	0.45	0.9 x 0.6	11.00	Kodak Tri-X		N	M	14/S	1	Webb,R	E
6.118	850647	2.306	5	0.45	0.9 x 0.6	8.00	Kodak Tri-X		N	M	13/S	1	Webb,R	F
6.381	850648	0.850	3.4	0.25	2.4 x 1.6	10.00	Kodak 6415		Y	C	7/P	1	Kojima,T	G
6.401	850649	1.760	5.8	0.303	1.2 x 0.8	13.58	Kodak 2415		Y		6/P	1	Niijima,T	H
6.427	850650	1.760	5.8	0.303	1.2 x 0.8	0.25	Kodak 2415		Y		7/P	1	Niijima,T	I
6.427	850651	1.760	5.8	0.303	1.2 x 0.8	0.50	Kodak 2415		Y		8/P	1	Niijima,T	I
6.427	850652	1.760	5.8	0.303	1.2 x 0.8	1.00	Kodak 2415		Y		9/P	1	Niijima,T	I
6.451	850653	0.300	1.5		6.9 x 4.6	20.00	Kodak 2415		Y	O	1/P	2	Nasser,J.L	J
6.689	850654	2.800	10	0.28	0.7 x 0.5	5.00	Kodak Tri-X	400/27	N	O	13/N	1	Darvann,T.A	
6.699	850655	0.500			4.1 x 2.7	20.00	Fomapan F27	400/27	N	O	5/N	1	Maturkanic,M	K
6.756	850656	0.500	5.6		4.1 x 2.7	8.00	Kodak Tri-X	400/	N	X	13/P	1	Ward,A	L
6.761	850657	0.300	1.5	0.200	6.9 x 4.6	8.00	Kodak 2415		Y	O	10/T	2	Genebriera,J	

DATE: 6 JAN 1986

DATE: 6 JAN 1986

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
6.775	850658	0.700	5	0.14	2.9 x 2.0	38.00	Kodak IIA-F		N	M	48/P	1	Ridley, E.B	M
6.802	850659	1.270	5	0.254	1.6 x 1.1	10.00	Kodak 2415		Y	O	44/P	1	Johnstone, G.F	
6.965	850660	0.225	1.7	0.140	9.1 x 6.1	4.50	Kodak 2415		Y	S	5/P	1	Dilsizian, R	N

NOTE A (Observer's image identifier is 34A. Ed.) City lights interfered with the observation. Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.

NOTE B (Observer's image identifier is preceded by prefix 1. Ed.)

NOTE C (Observer's image identifier is 35A. Ed.) City lights interfered with the observation. Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.

NOTE D Start time and duration approximate.

NOTE E Poor seeing. Cut off by fog/weather. Inner coma and starlike central condensation visible on all original negatives. Film pushed processed slightly. (Observer indicated C-type guiding as well as M. Ed.)

NOTE F Guided on stars. Poor seeing and exposures shortened by fog (low stratus) movement. Inner coma and starlike central condensation visible on all original negatives. Film push processed slightly. (Observer indicated C-type guiding as well as M. Ed.)

NOTE G Instrument is Wright-Schmidt. Large format (120 size) film used.

NOTE H (Observer's image identifier is 860106-2. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

NOTE I (Observer's image identifier is 860106-5 [sic]. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

NOTE J The film was fogged when a red flashlight accidentally shone on it. Hypersensitized at 46F-80F.

NOTE K Twilight and city lights interfered with the observation.

NOTE L UV filter used.

NOTE M (Observer's image identifier is preceded by prefix ZA. Ed.) Instrument uses photographic plates.

NOTE N Stellar guiding was used because of extremely small apparent movement of the comet within the exposure period (movement during a 24 hour period was 2 minutes of arc [sic] in RA and approximately 0.2-0.3 degrees of arc in declination during this period). The 5.5" Schmidt camera gives a strong "hot spot" near the center of the frame.

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	ACN#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
6.014	870112	600C-O	CL	0.135	1.9		33.00	Kodak 2415		Y	C	701/S	2	Buchanan, W.T	AB
6.029	870113	42P-O	CL	0.400	6.3		3.00	Ektachrome	400/27	N	C	31/P	1	Grieser, D	C
6.045	870114	600C-O	CL	0.135	1.9		29.00	Kodak 2415		Y	C	703/S	2	Buchanan, W.T	BD

NOTE A Frame has airplane trails. (Observer's image identifier is E-117-01. Ed.)

NOTE B Zodiacal light interfered with the observation. Halley barely visible to naked eye. All spectra lie along a meridian from south to north with wavelength increasing.

NOTE C Prism glass type uncertain. Film emulsion at ambient temperature of 0 C.

NOTE D Second order violet-green. Focused at R for best focus in violet. (Observer's image identifier is E-117-03. Ed.)

DATE: 7 JAN 1986

DATE: 7 JAN 1986

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	
7.000	815442	4.9	S	100	4	6	0.5	85	0.05	B		10	5.5	N	2	House,R.R		
7.003	815443	5.5	B	100	15	6			0.06	R	8.3	30	3.8	N	1	Fox,J.H	A	
7.040	815444	4.8	M	100	23	7	2.5	68	0.080	B		20	6.2	Y	1	Ariail,R.B		
7.0965	815445	4.8	S	DCS	6	6	0.68	75	0.080	B		20	5.6		2	Machholz,D		
7.0979	815446	4.9	S	DCS	4.5	7	0.48	75	0.050	R	12.0	13	5.6		2	Machholz,D		
7.1007	815447	4.6		DCS	10	2				EY			5.6		2	Machholz,D		
7.115	815448	4.7	M	100	3.3	8	0.3	45	0.203	N	4	35	4.0	Y	4	Poulos,D		
7.115	815449	5.5	B	100	10	6	0.33	300	0.050	B		10	5.0C	Y	1	Stapleton,J	B	
7.117	815450	5.0	B	100	6	8	0.7		0.05	B		10	5.3	Y	1	Saxon,V.P		
7.118	815451	4.9	M	100					0.050	B		7		Y	3	Jeffrey,J		
7.13	815452	4.7	M	100	5.5	8	5.0	64	0.080	B		20	6.5	Y	7	Morris,C.S	C	
7.139	815453	4.9	B	100		5			0.08	B		11	4.5	N	1	Edberg,S.J		
7.14	815454	4.8	M	100					0.050	B		12	6.5	Y	7	Morris,C.S		
7.15	815455	4.7	M	4A			3.5	70	0.05	B		10	6	Y	3	Hale,A		
7.15	815456	4.7	B	4A		1		70		EY		6		Y	3	Hale,A		
7.15	815457	4.7		100		5		64		EY		6.5		Y	7	Morris,C.S		
7.15	815458	5.5	M	100	3.5				0.256	N	4.5	156	6.5	Y	7	Morris,C.S		
7.15	815459	5.1	M	100					0.256	N	4.5	45	6.5	Y	7	Morris,C.S		
7.1667	815460	4.6	M	100	6	7	3.35	67	0.05	B		7	6.0	Y	2	Cook,A.J		
7.387	815461	4.7	M	100	6	8			0.030	B		8	4.0C	Y	1	Kato,T		
7.39	815462	4.9	S	AAVSO	5	6	1.2	65	0.13	N	6.3	24	5.0	Y	1	Hayashi,A		
7.397	815463	4.9	M	100	3	7	0.13	60	0.10	N	10	55	4.0C	Y	1	Kato,T		
7.40	815464	4.9	B	100	2.3	8	0.7	60	0.05	B		7	4.0	N	1	Kanai,K		
7.40	815465	5.2	B	M	4	4	0.3		0.12	N		40				Knyazyuk,N		
7.40	815466	4.8	M	100			0.8		0.05	B		7	4.5	Y	2	Suzuki,K		
7.41	815467	5.0	M	100	3.5	8			0.08	B		11	4.5C	N	1	Mitsuma,S	D	
7.419	815468	5.4	S	100	3.0	8			0.08	R	11.4	46		N	1	Wakatsuki,M		
7.430	815469	4.1	M	100	3.8	7			0.12	N	6	36	1.0C	N	1	Kishi,A		
7.440	815470	4.9	S	100		8			0.05	B		10	3.0	Y	1	Williams,P.F		
7.446	815471	5.3	B	100	6.3	3.0	6	0.45	55	0.08	R	12.5	40	Y	1	Feisheng,J		
7.53	815472	4.7	B	E	18				0.03	B		8				Zagaynov,V.A		
7.53	815473	4.6	B	E	20				0.03	B		8				Zagaynov,V.A		
7.54	815474	4.6	B	E	20				0.03	B		8				Zagaynov,V.A		
7.54	815475	4.4	B	E	19				0.03	B		8				Zagaynov,V.A		
7.55	815476	4.4	B	E	18				0.03	B		8				Zagaynov,V.A		
7.55	815477	4.6	B	AAVSO					0.10	B		8				Zagaynov,V.A		
7.57	815478	4.6	B	E	13	2		66	0.03	B		20				Churyumov,K	E	
7.57	815479	4.8	B	E	19				0.03	B		8				Zagaynov,V.A		
7.57	815480	4.6	B	E	12				0.03	B		8				Zagaynov,V.A		
7.58	815481	4.1	B	E	16				0.03	B		8				Zagaynov,V.A		
7.58	815482	4.5	B	E	13				0.03	B		8				Zagaynov,V.A		
7.59	815483	4.5	M	E	12				0.03	B		8				Zagaynov,V.A		
7.60	815484	4.1	V	M					0.03	B		8				Zagaynov,V.A		
7.62	815485	4.1	B	AAVSO			0.2		0.04	EY		12				Poroshin,A		
7.62	815486									B						Korneev,V		
7.63	815487	5.0	B	M	3		0.8		0.08	R		29				Konstantinov,S	F	
7.667	815488	5.6	M	100	15	6	0.08	290	0.150	N	5.3	45	4.5	Y	1	Nestorov,Yu	G	
7.687	815489	5.0	S	100	2.7	6			0.063	R	13.3	34	3.0C	N		Nikholm,L		
7.688	815490	4.8	B	CZ	15	5			0.04	B		7	5.0	Y	1	Skjaeraasen,O		
7.688	815491	4.9							0.080	B		15	3	Y	1	Brancik,K		
7.701	815492	4.8	B	INW		5	2.0		0.080	B		20	4.0	Y	1	Nagele,A	H	
7.701	815493	4.4	M	CZ					0.10	B		25	4	C	Y	1	Guthier,O	
7.701	815494	4.9	M	100	6.5	3	0.3	79	0.09	M	11	56	4.5	Y	1	Valasek,V	I	
7.708	815495	4.5	S	100	8	7	0.76	59	0.080	B		20	5.9	Y	1	Westlund,M		
7.71	815496	3.8		DCS 7		6				EY		4	C	N	4	Meozzi,D	J	
7.711	815497	4.4	S	100	8	7	1.24	67	0.050	B		7	5.9	Y	1	Kroon,B		
7.712	815498			100	4.2	7			0.15	N	6.6	50	4	T	Y	1	Meozzi,D	
7.712	815499	4.9	B	100					0.05	B		7	4	T	Y	1	Dal Santo,M	K
7.715	815500	4.8	M	CZ	5	8			0.080	B		10	4.3	Y	1	Dal Santo,M	L	
7.715	815501	4.8	M	100		7			0.05	B		12		Y	1	Bilek,V	M	
7.719	815502	5.0	M	4A	15	10	1.5	72	0.08	B		11	5.0	Y	1	Tanti,T	N	
7.719	815503				4.5	7	1	309	0.250	N	6	55	5.0	N	1	Gubo,E		
7.719	815504	5.1	B	100		6			0.113	N	8	22	4.5	Y	1	Lunde,R	O	
7.721	815505	4.8	M	100					0.030	B		8	5.5	Y	1	Schambeck,C.M		
7.722	815506	4.7	B	100	4	8	0.67	65	0.08	B		20	5.0	Y	2	Villa,M		
7.724	815507	4.9	M	AAVSO	7	9	0.8	30	0.063	R	13.3	52				Milani,G	P	
7.729	815508	4.5	B	4A		7	1.8	60	0.10	B		14	4.0	Y	1	Kosa-Kiss,A	Q	
7.729	815509	4.5	B	4A		6			0.080	B		20	4.0	Y	1	Hasubick,W		
7.729	815510	4.8	B	100	4	8			0.08	B		20	5.0	Y	2	Koch,B.O		
7.729	815511	4.8	S	100	6.5	7	1.5	73	0.050	B		7	4.9C	Y	5	Menichetti,R	P	
7.729	815512	4.5		AAVSO	3	6	2.3	67	0.080	B		11				Piccinini,M		
7.729	815513			100			1.2		0.114	N	8.7	25	5.5	Y	7	Stomeo,E	R	
7.735	815514	3.9	S	100						EY			6.0Z	Y	3	Villa,M		
7.736	815515	4.7	B	100					0.03	B		6	5.0	Y	2	Haver,R		
7.738	815516	4.5	S	100						EY			5.0	Y	2	Milani,G	P	
7.740	815517	4.0	S	100	8.0	5	3.73	65	0.05	B		7	6.0Z	Y	3	Milani,G	P	
7.747	815518	5.0	B	100	2.8	6	0.40	80	0.080	B		20	5.0C	Y	2	Haver,R	S	
7.747	815519	4.9	M	100		6			0.08	B		10	5.0C	N	1	Dionisi,M	T	
7.750	815520	4.4	M	100	9	6			0.05	B		10	5	C	Y	1	Rapavy,P	U
7.750	815521	4.8	M	100		8			0.05	B		10	5.0Z	Y	1	Menichetti,R		
7.75	815522	4.9	B	100	2.5	6	0.18	65	0.20	N	4.7	104	4	Y	1	Melandri,F	V	
7.757	815523	4.5	B	100		7	1		0.050	B		7	5.0	N	1	Cappellari,M		
7.75	815524	4.7	B	AA	7.5	7			0.050	B		7				Lunde,R	W	
7.75	815525	4.4	M	AA	7.5	7			0.050	B		7				Green,D.W.E	X	
7.75	815526	4.6	S	AA					0.050	B		7				Green,D.W.E	X	
7.75	815527	4.5	S	100	20	7	1.5	70	0.05	B		7	5.0	Y	1	Green,D.W.E		
7.75	815528	4.6	B	AA	9	7			0.035	B		7				Harrington,P		
7.75	815529	4.3	M	AA	9	7			0.035	B		7				Green,D.W.E	X	
7.75	815530	4.4	S	AA					0.035	B		7				Green,D.W.E	X	
7.75	815531	5.0	B	100	8	3	0.80	60	0.05	B		7	5.5			Green,D.W.E		
7.75	815532	5.0	B	100					0.152	N	8	38				Lairret,R		
7.75	815533	4.8	B	99		6	0.93	73	0.05	B		7	4.5	N	1	Lairret,R		
7.75	815534	4.6	M	100	6	7	0.6	65	0.05	B		7	5.3	Y	1	Benavides,A		
7.75	815535	4.4	B	AAVSO	5.5	7			0.050	B		10				DeYoung,J.A		
7.75	815536	5.0	B	100					0.152	N	8	38				Bortle,J.E	Y	
7.75	815537	4.8	S	100	6.5	5	0.60	60	0.035	B		7	5.4C	Y	3	Lairret,R		
7.75	815538				4.5	6	0.62	60	0.15	R	5	31	5.4C	Y	3	Morrison,W	Z	
7.75	815539	3.8	S	100					0.05	B		20	4.5	N	8	Morrison,W	a	
7.75																		

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NOTE B Near city lights. (PA approximate and may have been measured incorrectly. Ed.)  
 NOTE C Maximum width of tail = 30'.  
 NOTE D 7.3.  
 NOTE E The tail in the form of a conoid with the distinctly seen nucleus. Tail length is lower limit.  
 NOTE F Envelope in the head.  
 NOTE G Granulation in the central condensation.  
 NOTE H (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are 31 Aqr, 32 Aqr.  
 NOTE I Adapted to the actual (rather bad, street lights visible) observing conditions.  
 NOTE J Tail length determined in 15x80 binoculars: 2.0 deg.  
 NOTE K Coma dia. estimate is not very good.  
 NOTE L Good sky.  
 NOTE M Fog.  
 NOTE N Clouds. Twilight.  
 NOTE O Tail length is upper limit. Some haze.  
 NOTE P Cirri at the horizon.  
 NOTE Q Naked eye.  
 NOTE R Type I tail was 2.3 deg. long at PA 67 deg; 1 deg. from the head it forked with the tines separated by 8 deg. in PA. (Editor's description of sketch.) Type II tail was 2.0 deg. long with PA spanning 43 to 80 deg.  
 NOTE S Tail fan-shaped. See drawing.  
 NOTE T Coma diameter accuracy +/-1.5. Tail length accuracy +/-0.22.  
 NOTE U Coma ellipt. Observation interrupted by clouds.  
 NOTE V Veiled sky.  
 NOTE W Some haze.  
 NOTE X Coma diameter approximate.  
 NOTE Y Sharp brightness increase.  
 NOTE Z Diffuse central spine of tail 0.20 deg. long.  
 NOTE a Twilight. PA uncertain.  
 NOTE b Magnification approximate.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
7.003	830708	0.6	0.203	R	13	85	10	3.8	1	Fox,J.H	A
7.004	830709		0.254	N	6	40	16	3.0	6	Troiani,D.M	B
7.005	830710		0.203	SC	10	70	15	6.0		Williams,D.J	C
7.072	830711		0.127	R		50			2	Lohvinko,T.W	D
7.167	830712	3	0.050	B		7	28	6.0	2	Cook,A.J	
7.686	830713	0.44	0.063	R	13.3	34, 53	13	3.0	1	Skjaeraasen,O	E
7.698	830714	1.6	0.090	M	11	56	10	4.5	4	Westlund,M	
7.708	830715		0.25	N		150			1	Guthier,O	F
7.720	830716	0.2	0.25	N	6	80,170	35	5	2	Adamoli,G	G
7.724	830717		0.063	R	13.3	52				Kosa-Kiss,A	H
7.728	830718	1.2	0.150	N	1	33	6	4.5	1	Dal Santo,M	
7.736	830719	0.58	0.150	N	1	100	4	4.5	1	Dal Santo,M	
7.738	830720	0.9	0.063	R	13.3	52			1	Csukas,M	I
7.741	830721	3	0.050	B		7	5	6.0	3	Haver,R	J
7.766	830722	0.25	0.200	N	4	50	15	6.0	3	Haver,R	K

NOTE A SW part of nucleus brighter and better defined than the rest, looks almost like an "eyebrow". May be a seeing effect from the turbulence. Little of tail is visible except for one bright streak at about PA 90. W edge of coma better defined than E.  
 NOTE B Seeing (1-3): 2. Sky darkness (1-5): 1. Envelope at PA 250 deg. Fan at PA 260 deg. Tail was 1 deg. long, even with light pollution.  
 NOTE C I can see a tail using the 8". The tail appears to have a dark streak running from the coma down the middle of the tail.  
 NOTE D An aurora display now in progress along with a 30% cloud cover really hampers the comet. Under these conditions the sky is seen with difficulty. Blue in colour with a yellowish-white nucleus. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE E Lumicon Deep Sky filter used. Clear blue sky, twilight, extremely thin clouds covered a great portion of the sky, rather humid, -11 C. Some atmospheric turbulence. Due to the bright sky background, only the innermost, densest part of Halley's coma was observable through my little instrument.  
 NOTE F Two disc-shapes seen in condensation with separation of 30-40". Diameter of condensation about 15-20" (at 35x, also good to see). Long jets sitting on the condensation at PA 294, 2.6' and PA 196, 2.8'. Coma is surprisingly rich in detail. (Translated by IHN staff. Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE G Tail at PA 60. Major axis of central condensation at PA 340. The central condensation is elongated at high magnification and very bright and looks rather irregular, while the coma is round.  
 NOTE H Schematic drawing. (Duration not indicated. Time of observation is assumed to be end time. Ed.)  
 NOTE I Total magnitude = 4.9; coma diameter = 9'x7'; DC 9; halo diameter 30'; tail at PA 60, 17' length. A 27' tail had PA 95 9' to nucleus, PA 109 17' to nucleus, PA 115 28' to nucleus. [sic] (Duration not indicated. Time of observation is end time. Ed.)  
 NOTE J Schematic drawing.  
 NOTE K Tail spans PA 61 to 69 (at end indicated in drawing, Ed.).  
 NOTE L Jet at PA 235.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
7.023	850661	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	247/P	1	Sabia,J.D	A
7.102	850662	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak 2415		Y	T	28/P	1	Healy,D	B
7.697	850663	0.500			4.1 x 2.7	20.00	Fomapan F27	400/27	N	O	6/N	1	Maturkanic,M	C
7.735	850664	0.500	5	0.100	4.1 x 2.7	10.00	ORMO NP 27	400/27	N	C	2/N	1	Rapavy,P	D
7.741	850665	1.400	5.6	0.260	1.5 x 1.0	4.00	Ilford FP4	125/22	N	O	2/C	1	Paolinetti,R	E
7.760	850666	1.000	5	0.200	2.1 x 1.4	14.00	3M 1000	1000/	N	X	5/S	1	Vanin,G	
7.962	850667	0.225	1.7	0.140	9.1 x 6.1	4.50	Kodak 2415		Y	S	6/P	1	Dilsizian,R	F
7.986	850668	0.500	3.6	0.140	4.1 x 2.7	20.00	Kodak 2415		Y	S	6/C	1	Chester,G.R	
7.993	850669	0.200	4.5		10.3 x 6.9	5.00	Kodak Tri-X		N	T	7/C	1	Priester,D.C	G

NOTE A Horizon haze apparent. Photographs made by J. Kamichitis and J.D. Sabia. Clouds near horizon appear.  
 NOTE B (Observer's image identifier is 28-10A. Ed.)  
 NOTE C Twilight and city lights interfered with the observation.  
 NOTE D City lights interfered with the observation. Large format (68x87 mm) film used.  
 NOTE E (Observer's image identifier is followed by suffix A. Ed.)  
 NOTE F Stellar guiding was used because of extremely small apparent movement of the comet within the exposure period (movement during a 24 hour period was 2 minutes of arc [sic] in RA and approximately 0.2-0.3 degrees of arc in declination during this period). The 5.5" Schmidt camera gives a strong "hot spot" near the center of the frame.  
 NOTE G Push processed to 800 ASA.



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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	
8.000	815541	4.4	S	100	11.5	8	0.2	68	0.108	N	4	24	5.0	Y	1	Franch,J		
8.006	815542	5.4	M	100			0.67	90	0.050	B		10	4.7	Y	1	Smith,A	A	
8.010	815543	4.5	S	100	5.5	8	0.67	50	0.152	N	5.5	69	4.7	Y	1	Hudak,D.M	B	
8.010	815544	4.4	B	99					0.080	B		20	5.5	Y		Smith,D		
8.02	815545	4.7	B	4A	9		1.17		0.080	B		20		Y		Kronk,G		
8.02	815546	5.5	B	4A	6.6				0.335	N	4.5	56		Y		Kronk,G		
8.024	815547	4.4	B	100	35	8	1	90	0.20	SC	10	77	5.5	Y	1	Hodonsky,K	C	
8.024	815548	4.5	B	100	8.1	7			0.050	B		7	3.0C	N	6	Will,M		
8.042	815549	5.3	B	4A					0.08	B		11	5.3	Y	3	Gorski,L		
8.070	815550	4.7	S	100	5	6	0.6	60	0.05	B		10	5	Y	2	House,R.R	D	
8.07	815551	4.6	V	4A						EX		8	6.0	Y	1	Keen,R		
8.07	815552	4.7		4A	6	8	3.0	60	0.040	B		8	6.0	Y	1	Keen,R	E	
8.080	815553			100	39	7	0.20	295	0.200	SC	10	78	6.2	Y	2	Saraceno,J	F	
8.080	815554	5.0	B	100					0.050	B		7				Saraceno,J		
8.09	815555	4.5	M	100	5.5	7	5.33	64	0.080	B		20	5.5	Y	16	Morris,C.S		
8.094	815556	4.8	B	100	15	8	1		0.08	B		11	5.3	Y	1	Saxon,V.P		
8.095	815557	4.7	S	100			0.6		0.05	B		7	5	Y	2	House,R.R	G	
8.10	815558	4.5		100			4.5	64		EX		5.5	Y	16	Morris,C.S			
8.10	815559	4.2	S	100	18	7	2	60	0.080	B		11	5.0	Y	2	Spratt,C.E	H	
8.104	815560	5.0	B	100	10	7	0.42	300	0.050	B		10	4.5C	Y	1	Stapleton,J	I	
8.12	815561	4.4	M	100					0.015	B		6	5.5	Y	16	Morris,C.S		
8.13	815562	4.7	M	4A					0.05	B		10	6	Y	3	Hale,A		
8.13	815563	4.6	B	4A			1	65		EX		6		Y	3	Hale,A		
8.13	815564	4.4	M	100					0.050	B		12	5.5	Y	16	Morris,C.S		
8.13	815565	4.4	M	100					0.080	B		20	5.5	Y	16	Morris,C.S		
8.13	815566	4.4		100						EX		5.5	Y	16	Morris,C.S			
8.215	815567	4.7	M	4A	22	7	1.5	295	0.05	B		10	5.5	Y	1	Fabre,R	J	
8.378	815568	4.4	M	100	6	7	0.50	60	0.030	B		8	5.0C	Y	1	Kato,T		
8.38	815569	4.7	M	100	4.4	8	1	60	0.08	B		11	5	Y	1	Mitsuma,S	K	
8.38	815570		SAO		8	8	0.33	85	0.15	N	6	23	5	Y	4	Tanikawa,M	L	
8.38	815571	4.9	B	SAO					0.05	B		7	5	Y	4	Tanikawa,M		
8.382	815572	4.6	B	4A					0.035	B		7		N	1	Okada,M		
8.39	815573	4.7	B	100	3.4	7	0.7	65	0.05	B		7	3.5	N	1	Kanai,K		
8.39	815574	3.5			8	7	0.5		0.08	B		11	5.0	Y	2	Nashi,S	M	
8.393	815575	4.7	B	100					0.05	B		7	4.5CT	Y	1	Hayashi,H		
8.393	815576				10	5	0.67		0.12	N	6	40		Y	1	Hayashi,H		
8.396	815577	4.7	B	100					0.05	B		7	5.0C	Y	1	Hasegawa,T		
8.397	815578				2	7	0.07	55	0.10	N	10	55	4.5C	Y	1	Kato,T		
8.40	815579	4.9	S	AAVSO	4	6	0.5	65	0.13	N	6.3	24	3.5	Y	1	Hayashi,A		
8.42	815580	5.0	B		15	6	1.0	60	0.16	N	4.8	24		Y	1	Maeda,S		
8.425	815581	4.7	B	100					0.05	B		7	2.9	Y	3	Bembrick,C		
8.440	815582	4.9	S	100					0.05	B		10	3.0	Y	1	Williams,P.F	N	
8.44	815583	3.8	S	100			1		0.08	B		15	4	T	2	Seargent,D	O	
8.444	815584	5.3	B	100	7.0	6	0.47	55	0.08	R	12.5	40	6.0	Y	1	Feisheng,J		
8.455	815585	4.2	M	100	10				0.1	N	10	40	3.5	Y	1	Ichikawa,K		
8.54	815586	4.4	B	E	16				0.03	B		8				Zagaynov,V.A		
8.58	815587	3.8	B	E	13				0.03	B		8				Zagaynov,V.A		
8.59	815588	4.8	B	E	18				0.03	B		8				Zagaynov,V.A		
8.59	815589	4.5	B	E	19				0.03	B		8				Zagaynov,V.A		
8.60	815590	4.3	B	E	19				0.03	B		8				Zagaynov,V.A		
8.60	815591	4.4	B	E	20				0.03	B		8				Zagaynov,V.A		
8.60	815592	4.6	B	E	18				0.03	B		8				Zagaynov,V.A		
8.677	815593	5.0	B	100					0.04	B		8	3.0C	N	1	Czerniewski,W		
8.68	815594	5.0	B	AAVSO			2	66	0.10	B						Churyumov,K	O	
8.681	815595	5.5	S	4A	3	4			0.064	R	12	20	5.0C	N	1	Urbanaki,P		
8.688	815596	4.8	B	CZ	15	5			0.04	B		7	5.0	Y	1	Brancik,K		
8.694	815597	4.0	S	100	19	8	1.5	60	0.152	N	5	44	4.7	Y	1	Moeller,M		
8.696	815598	4.6	B	4A	10.3	7			0.063	R	8.4	25	3.8	Y	2	Witte,F	P	
8.698	815599	4.4	M	CZ					0.10	B		25	4	C	Y	1	Valasek,V	Q
8.70	815600	4.8	S	4A	5.3	8	0.13	60	0.050	R	10	13	3.5T	N	2	Jahn,J	R	
8.701	815601	5.0	M	CZ					0.05	B		7	3	N	1	Silhan,J	S	
8.701	815602	4.9	M	100	6.5	3	0.5	79	0.09	M	11	56	5.0	Y	4	Westlund,M		
8.708	815603	4.9	B	100	15	7	2	62	0.08	B		20	5.5	N	2	Knain,E	T	
8.729	815604	4.6		100			1.7		0.063	N	11	20	6.0	Y	2	Lunde,R		
8.733	815605	5.2	B	100	11	8	5	35	0.200	R	15	120	5.0	Y	1	Kalauch,K.-D		
8.747	815606	4.9	M	4A	4.5	7	1.5	62	0.08	B		11	4.7	Y	1	Fleet,R.W		
8.752	815607	5.2	B	100	35	8	1.5	17	0.065	B		20	6.3	Y	1	McBain,J		
8.758	815608	5.5	B	100					0.050	B		7	4.0TC	Y	1	Temprano,J	U	
8.771	815609	4.7	B	4A	5				0.05	B		8	6	Y	1	Cano,M	V	
8.771	815610	5.5							0.050	B		10		T	1	Kauschke,A	W	
8.771	815611	4.5	B	100		7	1		0.050	B		7	5.0	N	1	Lunde,R	X	
8.781	815612	4.7	M	100	3	6			0.06	R	5.7	20	5.0C	N	3	Cardiel,N		
8.785	815613	4.7	B	4A	8	8	0.42		0.05	B		20		C	4	Gallego,J		
8.785	815614	4.7	B	4A					0.030	B		8	4.5	Y	1	van der Mey,L	Y	
8.94	815615	4.6	S	4A	20	7	1.5	70	0.05	B		7	5.0	Y	1	Harrington,P		
8.96	815616	4.8	B	AA	10	7			0.050	B		7				Green,D.W.E	P	
8.96	815617	4.3	M	AA	10	7			0.050	B		7				Green,D.W.E	P	
8.96	815618	4.4	S	AA					0.050	B		7				Green,D.W.E		
8.962	815619	5.0	M	100	6.3	8	1	90	0.203	N	8	128	5.0	Y	1	Hannon,J		
8.962	815620	4.8	M	100	7.6	7	1.7	66	0.05	B		12	6.12	Y	1	Knight,S	Z	
8.977	815621	4.6	M	4A	6	7	1.0	65	0.05	B		7	5.3	Y	1	DeYoung,J.A		
8.979	815622	4.7	S	100	5.0	9	0.67	60	0.203	N	6	101	5.0	Y	1	Hudak,D.M	a	
8.98	815623	4.4	B	AAVSO	5.5	7			0.050	B		10				Bortle,J.E		
8.98	815624	4.8	B	AA	8.5	7			0.080	B		20				Green,D.W.E	P	
8.98	815625	4.6	S	AAVSO	8.5	7			0.080	B		20				Green,D.W.E	P	
8.984	815626	4.8	B	99		6	1.05	67	0.05	B		7	5.1	N	1	Benavides,A		
8.987	815627	4.8	B	100	8	3	0.60	51	0.05	B		7				Lairret,R		

NOTE A Gas tail.

NOTE B Tail and PA approximate.

NOTE C Tail PA 55 deg. to 82 deg.

NOTE D Naked eye coma only.

NOTE E Modified Sidgwick method used.

NOTE F (PA value may have been incorrectly determined. Ed.)

NOTE G Naked eye coma only.

NOTE H Dust bulge 50 deg.-110 deg. included in coma size.

NOTE I Windy, clear, short tail. (PA approximate and may have been measured incorrectly. Ed.)

NOTE J (PA value appears to be measured incorrectly. Ed.)

NOTE K 7.4.

NOTE L m2 (observer's symbol believed to mean "approximately equal to", Ed.) 9.

NOTE M (Observer indicated "Y" method, Ed.)

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NOTE N Altitude 3 deg.  
 NOTE O Tail length is lower limit.  
 NOTE P Coma diameter approximate.  
 NOTE Q Adapted to the actual (rather bad, street lights visible) observing conditions.  
 NOTE R PA approximate.  
 NOTE S Mist; during the public observation with some 30 visitors.  
 NOTE T Dew.  
 NOTE U Clouds.  
 NOTE V See draw. D.2.  
 NOTE W Tail length = y.  
 NOTE X Some haze.  
 NOTE Y Poor visibility.  
 NOTE Z Dust tail.  
 NOTE a Tail length and PA approximate.

## SUB-NETWORK: DRAWING

Date(UT)	ACON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
8.000	830723	0.83	0.152	N	8	38		5.5	1	Cuthill,L	A
8.017	830724	0.6	0.203	R	13	85,150,225	10	4.7	1	Fox,J.H	B
8.219	830725		0.33	N	4.5	50,150	10	5.5	1	Fabre,R	C
8.38	830726	1.41	0.15	N	6	23	14	5	4	Tanikawa,M	D
8.674	830727		0.150	R	15	180				Anklam,W	E
8.694	830728		0.314	R	15.9	200				Anklam,W	E
8.694	830729		0.203	SC	10	51				Moller,D	F
8.697	830730		0.203	SC	10	254				Moller,D	F
8.700	830731	1.6	0.090	M	11	56		5.0	4	Westlund,M	G
8.708	830732		0.150	N	7.3	50				Briesemeister,J	H
8.720	830733	1.2	0.080	B		20	15	5.5	1	Khain,E	I
8.736	830734		0.750	N	7.7	115			1	Freydank,H	J
8.743	830735		0.750	N	7.7	115			2	Freydank,E	E
8.771	830736		0.050	B		8			1	Cano,M	K
8.785	830737		0.050	B		20			4	Gallego,J	L
8.938	830738	0.02	0.23	R	12	122,250,600			1	O'Meara,S.J	E

NOTE A Tail at PA 50-75. Gas tail at PA 60. Coma DC = 6. Axis of head at PA 245. The coma has a strong intensity at center and has increased in size since last observed (Dec. 31). The tail is visible between PA 50 deg. and 75 deg. and a gas tail at 60 deg. PA. Semi latus rectum - 1.7'. Vertex distance - 1.7'. Magnitude estimated to be 5.2 using 10x50 binoculars (Morris method).

NOTE B Tail seen at all magnifications, but filamentary structure not visible at 225x. Three filaments clearly seen at 150x, single filament at 85x. S-SW "cap" on nucleus seen at 150, 225x.

NOTE C Jets or streamers were noted radiating from the north and south semi latus rectums. Center of tail from nucleus to 45' down center of tail brighter than surrounding area and well defined. Tail appears broader than last observations. Jets/streamers at PA 310-300/260-250; hotspot/spine at PA 295; tail at PA 295. Scale = 15'/mm.

NOTE D Diameter (observer's symbol believed to mean "approximately equal to", Ed.) 8'. DC = 8/10. Features specified as I and II at PA 85, lengths (observer's symbol believed to mean "approximately equal to", Ed.) 20' each.

NOTE E (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE F (Duration not indicated. Time of observation is start time. Ed.)

NOTE G Second time visible to the naked eye.

NOTE H DC = 6. Nucleus very bright. (Translated by IEN staff. Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE I Rays at PA 62. Tail stretching out of field. Tail at PA 35 (end). (The second mention of a tail refers to a short linear feature at a different PA than the main tail [for which no PA is given]. A further note following the second mention reads "not certain". Ed.)

NOTE J Haze, brightness about 4.6 mag.; dia. about 50". (Translated by IEN staff. Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE K Field 9 deg. Limiting magnitude 9.0. (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)

NOTE L Very concentrated [sic] (high DC). The southern edge of the tail is very bright. (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)	ACON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
8.003	850670	0.200	4.5		10.3 x 6.9	10.00	Kodak Tri-X		N	T	8/C	1	Priester,D.C	A
8.014	850671	0.200	4.5		10.3 x 6.9	15.00	Kodak Tri-X		N	T	9/C	1	Priester,D.C	A
8.017	850672	1.970	5.5	0.355	1.0 x 0.7	8.00	Kodak 2415		Y	O	1/P	1	Crist,M	B
8.025	850673	1.970	5.5	0.355	1.0 x 0.7	11.00	Kodak 2415		Y	O	2/P	1	Crist,M	B
8.056	850674	0.200	4.5		10.3 x 6.9	10.00	Kodak Tri-X		N	T	12/C	1	Priester,D.C	A
8.072	850675	0.152	2		13.5 x 9.0	15.00	Kodak 2415		Y	S	26/P	2	Minton,R.B	C
8.109	850676	0.500	3.6	0.140	4.1 x 2.7	5.00	3M 1000	1000/	N	O	3/N	7	Edberg,S.J	
8.109	850677	0.260	5.2	0.050	7.9 x 5.3	5.00	Ilford HP 5	500/	N	O	48/C	7	Edberg,S.J	
8.109	850678	0.610	4	0.152	3.4 x 2.3	3.00	Kodak Tri-X	400/	N	X	1/N	1	Lazerson,H	D
8.113	850679	0.610	4	0.152	3.4 x 2.3	2.00	Kodak Tri-X	400/	N	X	2/N	1	Lazerson,H	D
8.115	850680	0.500	3.6	0.140	4.1 x 2.7	10.00	3M 1000	1000/	N	O	4/N	7	Edberg,S.J	
8.115	850681	0.260	5.2	0.050	7.9 x 5.3	10.00	Ilford HP 5	500/	N	O	49/C	7	Edberg,S.J	
8.119	850682	0.500	3.6	0.140	4.1 x 2.7	1.00	3M 1000	1000/	N	O	5/N	7	Edberg,S.J	
8.119	850683	0.260	5.2	0.050	7.9 x 5.3	1.00	Ilford HP 5	500/	N	O	50/C	7	Edberg,S.J	
8.122	850684	0.305	4		6.8 x 4.5	30.00	Kodak IIA-F		N		2/P	1	Mitchell,R.C	
8.130	850685	0.260	5.2	0.050	7.9 x 5.3	5.00	3M 1000	1000/	N	O	7/N	7	Edberg,S.J	
8.136	850686	0.260	5.2	0.050	7.9 x 5.3	10.00	3M 1000	1000/	N	O	8/N	7	Edberg,S.J	
8.141	850687	0.260	5.2	0.050	7.9 x 5.3	1.00	3M 1000	1000/	N	O	10/N	7	Edberg,S.J	
8.155	850688	0.050	1.4		39.6 x 27.0	1.00	3M 1000	1000/	N	O	11/N	7	Edberg,S.J	
8.447	850689	0.300	1.5		6.9 x 4.6	14.00	Kodak 2415		Y	O	1/P	2	Nassr,J.L	E
8.701	850690	1.000	5.6		2.1 x 1.4	40.00	Kodak Tri-X	320/26	N	O	10/N	1	Zimnikoval,P	F
8.727	850691	1.000	5.6		2.1 x 1.4	20.00	Kodak Tri-X	320/26	N	O	11/N	1	Takacs,R	F
8.742	850692	1.000	5.6		2.1 x 1.4	15.00	Kodak Tri-X	320/26	N	O	12/N	1	Skvarka,J	G
8.959	850693	0.225	1.7	0.140	9.1 x 6.1	4.00	Kodak 2415		Y	S	7/P	1	Dilsizian,R	H
8.990	850694	0.500	3.6	0.140	4.1 x 2.7	30.00	Kodak 2415		Y	S	24/C	1	Chester,G.R	I

NOTE A Push processed to 800 ASA.

NOTE B City lights interfered with the observation. Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.

NOTE C (Print submitted by observer is a composite of three 5 min. exposures, the first and second were separated by 4 min. and the second and third were separated by 1 min. Ed.)

NOTE D 40-50 mph gusting winds! Santa Ana without inversion layer. Coyotes hunting and baying in area - wild!

NOTE E Same batch of film that was fogged on Jan. 6, 1986. Hypersensitized at 46F-80F.

NOTE F Large format (6x6 cm) film used.

NOTE G 120 size film used.

NOTE H Stellar guiding was used because of extremely small apparent movement of the comet within the exposure period (movement during a 24 hour period was 2 minutes of arc [sic] in RA and approximately 0.2-0.3 degrees of arc in declination during this period). The 5.5" Schmidt camera gives a strong "hot spot" near the center of the frame.

NOTE I (Observer's image identifier is 24A. Ed.)

DATE: 8 JAN 1986

DATE: 8 JAN 1986

SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
8.021	870115	600G-O	CL	0.135	1.9		16.00	Kodak 2415		Y	C	711/S	2	Buchanan, W.T	AB
8.040	870116	600G-O	CL	0.135	1.9		30.00	Kodak 2415		Y	C	712/S	2	Buchanan, W.T	BC

NOTE A (Observer's image identifier is E-117-11. Ed.)

NOTE B Zodiacal light interfered with the observation. Halley barely visible to naked eye. All spectra lie along a meridian from south to north with wavelength increasing.

NOTE C Second order violet-green. Focused at R for best focus in violet. (Observer's image identifier is E-117-12. Ed.)

DATE: 9 JAN 1986

DATE: 9 JAN 1986

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	
9.000	815628	4.6	B	4A					0.050	B		10	5	Y	2	Robinson,R.L		
9.021	815629	5.2	B	4A		7			0.08	B		11	3.0	Y	1	Gorski,L		
9.028	815630		B	4A	40	7	0.20	297	0.200	SC	10	78	6.2	Y	2	Saraceno,J	A	
9.028	815631	4.9	B	4A					0.050	B		7				Saraceno,J		
9.03	815632	5.7	B	4A	5.4	8	0.53		0.154	N	8.0	68		Y		Kronk,G	B	
9.03	815633	4.9	B	4A	9	8			0.080	B		20		Y		Kronk,G		
9.039	815634	5.0	M	100			0.83	90	0.050	B		10	4.7	Y	1	Smith,A		
9.08	815635	4.6	V	4A			1.5	60		EX			6.5	Y	1	Keen,R		
9.08	815636	4.7	M	4A	6	8	3.0	60	0.040	B		8	6.5	Y	1	Keen,R	C	
9.104	815637	5.0	B	100	10	7	0.50	310	0.050	B		10	4.5C	Y	1	Stapleton,J	D	
9.1160	815638	4.7	S	DCS	5	6	0.23	77	0.080	B		20	4.6		3	Machholz,D		
9.1160	815639	5.0	B	DCS	5	6	0.23	77	0.080	B		20	4.6		3	Machholz,D		
9.119	815640	4.7	S	4A	4	3			0.152	N	8	135	5	Y	1	Lewis,D.E		
9.13	815641	4.5	M	100					0.080	B		20	4.5	Y	17	Morris,C.S		
9.378	815642	5.0	M	100	15	5			0.035	B		7	3	Y	1	Watanabe,A		
9.38	815643	4.7	B	100	3.4	7	1.1		0.05	B		7	4.0T	N	1	Kasai,K		
9.384	815644	5.3	S	100	2.6	8	0.07	68	0.15	N	6	32	C	N	1	Wakatsuki,M		
9.386	815645	4.7	B	100					0.05	B		7	5.0C	Y	1	Hayashi,H		
9.386	815646				10	5	1		0.12	N	6	40				Hayashi,H		
9.389	815647	4.5	B	4A			1		0.035	B		7		Y	2	Okada,M		
9.39	815648	4.7	M	4A	4.1	8	1.5	60	0.08	B		11	5	C	Y	1	Mitsuma,S	E
9.39	815649				3.4	5	0.1		0.12			40				Kuyazyuk,N		
9.39	815650	5.1	B		10	6	1.0	300	0.05	B		10	4.0	N	1	Uda,K	F	
9.396	815651	4.5	M	100	5	7	0.33	60	0.030	B		8	4.5C	Y	1	Kato,T		
9.396	815652	4.7	B	4A		5			0.05	B		7	4.0C	Y	1	Hasegawa,T		
9.398	815653				3	7	0.12	60	0.10	N	10	55	4.5C	Y	1	Kato,T		
9.40	815654	4.3	S	4A					0.08	B		11	4.0	N	2	Momose,M		
9.408	815655	4.1	S	100	7	6	1.5	85	0.07	B		10	3.5	Y	1	Kobayashi,J		
9.41	815656	4.8	M	SAO	9	6	1.2	65	0.06	R	12	22	4.5	Y	4	Nakamura,A		
9.43	815657	4.9	B		15	6	1.0	60	0.16	N	4.8	24		Y	1	Maeda,S		
9.43	815658			SAO	8	6	0.50	85	0.15	N	6	23	5	Y	4	Tanikawa,M	G	
9.43	815659	4.9	B	SAO					0.05	B		7	5	Y	4	Tanikawa,M		
9.431	815660	5.1	B	100					0.07	B		10	4.7	Y	1	Date,M		
9.438	815661	5.1	B	100	5.5	7	0.47	55	0.08	R	12.5	40	5.0C	Y	1	Feisheng,J		
9.440	815662	4.9	S	100		8			0.05	B		10	3.0	Y	1	Williams,P.F	H	
9.58	815663	4.8	B	M	13				0.03	B		8				Zagaynov,V.A		
9.59	815664	4.8	B	E	11				0.03	B		8				Zagaynov,V.A		
9.60	815665	4.7	B	AAVSO					0.11	R						Churyumov,K		
9.61	815666	5.0	B	E	14				0.03	B		8				Zagaynov,V.A		
9.61	815667	5.1	B	M					0.05	B		7				Mamedov,V		
9.62	815668	5.0	B	4A	3.5	7	0.3		0.045	B		7	4.0T	Y	1	Spell,J	I	
9.639	815669	4.0	S	100	15	8	1.2	65	0.152	N	5	44	4.2	N	2	Moeller,M	J	
9.699	815670	4.3	B	CZ		5			0.08	B		10	4.7	N	1	Janecek,V		
9.70	815671	5.1	S	4A	4.7	7	0.46	60	0.050	R	10	13	4.0T	N	2	Jahn,J	K	
9.700	815672	5.2	B	100		3			0.050	B		12	3.0T	Y	1	Mosch,J		
9.703	815673	5.2	M	CZ	50	3	3.00		0.060	B		12	5.8	Y	1	Barak,R		
9.705	815674			100	4.5	6			0.150	R	15	56	3.0C	N	1	Richert,M		
9.71	815675	4.9	B	100					0.05	B		7	5.7C	Y	2	Naraziti,A	L	
9.710	815676	4.9	B	100	4.5	6	0.5	58	0.150	C	15	56	5.0	N	2	Zische,E		
9.713	815677	4.9	B	100	10	6			0.050	B		7	5.5	Y	1	Bohme,D	M	
9.715	815678	5.1	B	4A	10	8	2	58	0.08	B		20	5.5	N	2	Knain,E	N	
9.715	815679	4.9	M	CZ		6			0.05	B		7	3		1	Silhan,J	O	
9.715	815680	4.9	S	4A	3.0	5			0.063	R	13.3	53	3.0C	N		Skjaeraasen,O		
9.718	815681	5.7	B		7	5	0.2		0.200	N	7.2	36	3.0C	Y	1	Lipaki,P		
9.719	815682	4.9	S	4A	7	6	1.5	50	0.080	B		15	4.3C	Y	1	Korth,S	P	
9.72	815683	3.5		DCS 7		6				EX			3.5C	N	2	Kroon,B	Q	
9.72	815684	4.9	S	DCS 7	10	6	0.5	63	0.050	B		10	4.5CM	N	1	van der Laan,T.A		
9.729	815685	4.7	M	4A	6	7	0.33	50	0.114	N	7.9	26	4.0C	N	1	Bernardis,A		
9.729	815686	4.2	S	4A	7.0	5	0.3	65	0.080	B		20	4.5C	Y	1	Baroni,S	R	
9.729	815687	4.9	M	100	5	8			0.050	B		10	4.5	Y	2	Thomas,A	S	
9.729	815688	5.0	M	100	6	3	0.8	82	0.09	M	11	56	4.5	Y	4	Westlund,M		
9.733	815689	4.4	B		7.4	3.4	5	2.5	0.030	B		8	4.5C	Y	1	Winkler,R		
9.74	815690	4.8	M	100	12	6	1.6	63	0.06	R	4	15	5.5	Y	4	Granslo,B.H		
9.74	815691	4.4	S	DCS 7		7	2.5		0.045	B		9	5	N	1	Comello,G		
9.75	815692	4.4	S	100		7	1.0		0.05	B		10		Y	10	Bouma,R.J	T	
9.750	815693	4.6	B	4A	11	9	5	0.4	0.200	R	15	120	6.0	Y	1	Kalauch,K.-D		
9.7500	815694	5.5	B	4A	10	7	0.33	65	0.05	B		10	4.7C	Y	2	Franciosi,C	U	
9.753	815695	4.9	B	4A	5	7	0.42	60	0.330	N	4.5	59	6.1	Y	1	Castino,R		
9.76	815696	4.7	B	100					0.05	B		10		Y	10	Bouma,R.J		
9.763	815697	4.9	B	4A	5	6	0.42	60	0.050	B		16	6.1	Y	1	Castino,R		
9.764	815698	5.5	B	4A		7			0.050	B		7	4.0TC	Y	1	Temprano,J		
9.766	815699	4.7	B	4A	8	8			0.06	R	11.7	25	C	N	4	Gallego,J	V	
9.7687	815700	4.9	B	AAVSO		3			0.05	B		7	5.0	N	1	Sicoli,P		
9.771	815701	4.7	B	4A	5				0.05	B		8	6	Y	1	Cano,M	W	
9.771	815702	4.8	M	100	2	5			0.06	R	5.7	20	4.3C	N	3	Cardiel,N	X	
9.79	815703	4.8			6		1	60	0.034	B		9			2	Pereira,A	Y	
9.800	815704	5.2	B	4A	8				0.150	N	5	38		N	2	Rodriguez C.,J.A	Z	
9.95	815705	5.1	B	AA	8.5	7			0.080	B		20				Green,D.W.E	a	
9.95	815706	4.3	M	AA	8.5	7			0.080	B		20				Green,D.W.E	a	
9.95	815707	4.5	S	AA					0.080	B		20				Green,D.W.E	a	
9.96	815708	4.8	B	AA	8.5	7			0.035	B		7				Green,D.W.E	a	
9.96	815709	5.1	B	AA	9	7			0.050	B		7				Green,D.W.E	a	
9.96	815710	4.4	M	AA	9	7			0.050	B		7				Green,D.W.E	a	
9.96	815711	4.5	M	AA	8.5	7			0.035	B		7				Green,D.W.E	a	
9.96	815712	4.6	S	AA					0.035	B		7				Green,D.W.E		
9.96	815713	4.6	S	AA					0.050	B		7				Green,D.W.E		
9.972	815714	4.8	B	99		6	0.62	61	0.05	B		7	4.5		1	Benavides,A		
9.98	815715	4.5	B	AAVSO	5	7	2.3	61	0.050	B		10				Bortle,J.E		
9.98	815716	4.4	V	AAVSO						EX						Bortle,J.E	b	
9.98	815717					7	2	61	0.120	B		20				Bortle,J.E	c	
9.98	815718					7			0.500	N	5	96				Bortle,J.E	d	
9.983	815719	5.0	S	4A	4.9	9	0.67	60	0.203	N	6	101	5.0	Y	1	Hudak,D.M	e	
9.999	815720	4.8	B	99	8	3	0.17	45	0.05	B		7	5.3		1	Lalret,R		

NOTE A Lunar eclipse. (PA value may have been incorrectly determined. Ed.)

NOTE B Tail PA 49 deg. to 61 deg.

NOTE C Modified Sidgwick method used.

NOTE D Tail, some high clouds. (PA approximate and may have been measured incorrectly. Ed.)

NOTE E 7.6.

NOTE F (PA value may have been incorrectly determined. Ed.)

NOTE G m2 (observer's symbol believed to mean "approximately equal to", Ed.) 9.

DATE: 9 JAN 1986

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NOTE H Altitude 3 deg.  
 NOTE I Comet low above horizon, aurora.  
 NOTE J Twilight.  
 NOTE K PA approximate.  
 NOTE L Observation interrupted by clouds.  
 NOTE M Coma diameter exceeds value given.  
 NOTE N Very cold.  
 NOTE O Mist, during the public observation with some 30 visitors.  
 NOTE P Tail data uncertain because of haze.  
 NOTE Q Tail length determined in 15x80 binoculars: 1.4 deg.  
 NOTE R Fan tail at PA 40-115.  
 NOTE S Coma diameter approximate. Observation of tail with Newtonian 175/1220 mm, 35x: about 30'. (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE T Tail length is lower limit.  
 NOTE U Tail length approximate.  
 NOTE V Bad weather.  
 NOTE W See draw. D.3.  
 NOTE X Bad night.  
 NOTE Y Tail length approximate. (Observer gave limit as 8.6. Ed.)  
 NOTE Z Fog.  
 NOTE a Coma diameter approximate.  
 NOTE b Almost star-like to naked eye.  
 NOTE c Sunward side of tail brighter.  
 NOTE d Bright, wide (type II) tail.  
 NOTE e Tail length and PA approximate.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
9.000	830739		0.15	N	8	64, 98, 160	70	5.0	1	Robotham, R	A
9.010	830740		0.254	N	6	35	10	3.0	6	Troiani, D.M	B
9.031	830741		0.203	SC	10	70	90	6.0		Williams, D.J	C
9.063	830742	0.38	0.254	N	5.6	53, 60, 120	14	6.6	2	Knisely, D	D
9.106	830743	0.22	0.20	N	6	30, 48, 96	6	5.2	1	Wilson, A.M	
9.229	830744	2	0.05	R	7	30, 40	30	5.0	1	Kopp, M	E
9.44	830745	1.37	0.15	N	6	23	14	5	3	Tanikawa, M	F
9.698	830746		0.203	SC	10	254				Moller, D	G
9.715	830747	0.49	0.063	R	13.3	34, 53	10	3.5	1	Skjaeraasen, O	H
9.722	830748		0.750	N	7.7	165			1	Frejdank, H	I
9.726	830749	1.6	0.090	M	11	56	10	4.5	4	Westlund, M	
9.733	830750	0.09	0.125	N	5.8	28, 40, 60	40	5.0	1	Riccabone, G	J
9.771	830751		0.050	B		8			1	Cano, M	K
9.938	830752	0.15	0.23	R	12	122, 250, 600			1	O'Meara, S.J	L
9.991	830753	1	0.050	B		10	16	5	2	Robinson, R.L	M

NOTE A Tail obvious and easily seen at 98x but even more so at 64x. Nucleus harder to see than on Jan. 6/7. Comet is pale blue/white.  
 NOTE B Seeing (1-3): 2. Sky darkness (1-5): 1. Gas tail at PA 55 deg. Ray at PA 140 deg. Streamer at PA 90 deg. Had both gas and dust tail.  
 NOTE C A very faint tail is still visible as long as the sky remains dark.  
 NOTE D Bright bluish inner coma with yellow central condensation. Stellar nucleus? occasionally visible with bluish disk about 10" arc across centered on nucleus. Coma shows many very faint radial streamers near limit of vision out to edge of coma. Tail now almost as broad as coma's northeast edge broadening to 16' arc at tail's end. Faint narrow streamer PA 40 approximately 12' arc long running along north side of tail. Fainter streamer or weak jet about 5' arc long along southeast edge of tail. Inner tail shaped like narrow cone with base of cone near central condensation and tip about 15' arc from nucleus. Possible condensation in coma just south of nucleus. Magnification of 240x also used.  
 NOTE E Coma shows definite intensity peak at centre; tail's structure irregular + internal brightness differences (shadows!). Vertex distance: V = 11.5'. Semi latus rectums: P1 = 11.0', P2 = 10.0'. Tail PA 56 deg.  
 NOTE F DC = 6/10. Dia. and two features at PA 85 (observer's symbol believed to mean "approximately equal to", Ed.) 8' and 30' long each, respectively.  
 NOTE G (Duration not indicated. Time of observation is start time. Ed.)  
 NOTE H Lumicon Deep Sky filter used. Typical conditions for my site: city lights brightened the sky background and humidity, thin and "foglike" and outstretched clouds and turbulence in the atmosphere worsened the seeing. No tail visible, just the brightest part of the coma. (I know other observers have seen a coma at least 7 times as big as I did.) The very central condensation, the "nucleus", appeared point-like.  
 NOTE I Lighter haze. Brightness: 4.5 mag.; dia. about 55". (Translated by IHW staff. Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE J Light nebular region at PA 114. Slightly darker region at PA 98. Nucleus diameter 43 arc sec. Magnifications of 80 and 144 also used. Two drawings included. Intense city lights interfered with the observation. (Translated by IHW staff. Ed.)  
 NOTE K Field 9. Limiting mag.: 9.0. (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE L (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE M Faint fanning of tail near head on the north side. Possibly dust tail.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp Gdng	Id/Typ	Site	Observer(s)	Notes	
9.004	850695	0.305	1.5	0.203	6.8 x 4.5	2.50	Kodak 2415		Y	X	248/P	1	Sabia, J.D	A
9.006	850696	1.970	5.5	0.355	1.0 x 0.7	8.00	Kodak 2415		Y	O	3/P	1	Crist, M	B
9.012	850697	0.305	1.5	0.203	6.8 x 4.5	1.50	Kodak 2415		Y	X	249/P	1	Sabia, J.D	A
9.016	850698	1.970	5.5	0.355	1.0 x 0.7	16.00	Kodak 2415		Y	O	4/P	1	Crist, M	B
9.025	850699	0.100	2.8		20.4 x 13.7	5.00	Kodak VR1000	1000/	N	T	4/C	1	Priester, D.C	
9.031	850700	0.100	2.8		20.4 x 13.7	10.00	Kodak VR1000	1000/	N	T	5/C	1	Priester, D.C	C
9.059	850701	0.100	2.8		20.4 x 13.7	3.00	Kodak VR1000	1000/	N	T	7/C	1	Priester, D.C	C
9.062	850702	0.100	2.8		20.4 x 13.7	2.50	Kodak VR1000	1000/	N	T	8/C	1	Priester, D.C	
9.064	850703	1.583	8	0.203	1.3 x 0.9	30.00	Kodak 2415		Y	S	19/P	1	Minton, R.B	D
9.101	850704	0.610	4	0.152	3.4 x 2.3	2.00	Kodak Tri-X	400/	N	X	3/N	1	Lazerson, H	E
9.105	850705	0.610	4	0.152	3.4 x 2.3	3.00	Kodak Tri-X	400/	N	X	4/N	1	Lazerson, H	E
9.150	850706	0.200	8		10.3 x 6.9	32.00	Kodak 2415		Y	X	96/P	2	Snyder, L.F	
9.385	850707	1.760	5.8	0.303	1.2 x 0.8	10.00	Kodak 2415		Y		10/P	1	Niijima, T	F
9.695	850708	0.300	4		6.9 x 4.6	1.00	Fotopan HL	400/27	N	O	8/P	1	Slusarczyk, J	
9.736	850709	0.225	1.6	0.140	9.1 x 6.1	5.00	Kodak 2415		Y	O	001/T	1	Belli, V	G
9.760	850710	0.300	1.5	0.200	6.9 x 4.6	8.00	Kodak 2415		Y	O	11/T	2	Genebriera, J	
9.806	850711	1.905	5.4	0.350	1.1 x 0.7	30.00	Kodak 2415		Y	O	12/T	2	Genebriera, J	
9.823	850712	0.803	2.1	0.350	2.6 x 1.7	1.00	Kodak 103a-F		N	M	33/P	1	Guarro, J	

NOTE A Photograph made by J. Kamichitis and J.D. Sabia.  
 NOTE B City lights interfered with the observation. Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.  
 NOTE C Interference from car lights.  
 NOTE D The print shows a bright tail ray starting 25 arc min. from the nucleus with a fuzzy spot (or perhaps a star) at the end. (Print submitted by observer is a composite of six 5 min. exposures. The first and second, third and fourth, and fifth and sixth exposures were separated by 5 min.; the second and third and the fourth and fifth exposures were contiguous. Ed.)  
 NOTE E 40-50 mph gusting winds! Santa Ana without inversion layer. Coyotes hunting and baying in area - wild!  
 NOTE F (Observer's image identifier is 860109-4. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

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NOTE G Instrument is Schmidt camera.

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NETWORK: AMATEUR OBSERVATION

DATE: 10 JAN 1986

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	
10.000	815721	4.8	B	4A			3.0	60	0.050	B		10	5	Y	2	Robinson,R.L		
10.007	815722	5.0	B	4A	10	6	1	45	0.15	N		60	5.5	Y	4	Gilchrist,D.K	A	
10.007	815723		B	4A	43	6	0.20	300	0.200	SC	10	78	6.2	Y	2	Saraceno,J	B	
10.007	815724	5.3	B	4A					0.050	B		7				Saraceno,J		
10.017	815725	5.0	B	100	15	7	2	90	0.05	B		7	4.7	N	1	Fox,J.H		
10.04	815726	4.9	B	4A			0.33		0.080	B		20	5.0	Y		Kronk,G	C	
10.04	815727	5.6	B	4A	6.4		0.50		0.335	N	4.5	56	5.0	Y		Kronk,G	D	
10.10	815728	4.5		4A		9	6	60		EY			6.0	Y	16	Morris,C.S		
10.1028	815729	4.8	S	DCS	5	8	0.18	75	0.152	N	8.0	76	4.3	Y	3	Machholz,D		
10.104	815730	5.7	S	4A	36	7	1	80	0.203	SC	10	80	4.5C	Y	1	Gronck,J.D	E	
10.11	815731	4.5	M	4A	5.5	8	6.0	60	0.080	B		20	6.0	Y	16	Morris,C.S	F	
10.1181	815732	4.5	M	4A	6	7	6.37	62	0.05	B		7	6.0	Y	2	Cook,A.J		
10.1181	815733	4.5	S	4A			5	62		EY			6.0	Y		Cook,A.J		
10.13	815734	4.7	M	4A					0.05	B		10	4	C	Y	21	Hale,A	G
10.13	815735	4.6	M	4A					0.015	B		6	6.0	Y	16	Morris,C.S		
10.13	815736	4.5	M	4A					0.050	B		12	6.0	Y	16	Morris,C.S		
10.135	815737	4.6	M	4A	4.5	8	2.5	45	0.203	N	4	35	5.0	Y	1	Poulos,D	H	
10.375	815738	5.3	S	4A	2.5	8	0.12	58	0.15	N	6	32	4.0T	N	3	Wakatsuki,M		
10.375	815739	4.8	M	4A	20	6	0.50	60	0.035	B		7	5	Y	1	Watanabe,H		
10.378	815740	4.8	M	4A	20	6	0.83	60	0.035	B		7	5	Y	1	Watanabe,A		
10.382	815741	4.6	B	4A					0.035	B		7		N	1	Okada,M		
10.383	815742	4.5	M	100	5	8	0.33	60	0.030	B		8	4.5C	Y	1	Kato,T		
10.385	815743	4.8	M	4A	4.0	8	1.5	60	0.08	B		11	4.5	Y	1	Mitsuma,S	I	
10.390	815744	4.7	M	100	3	7	0.5	60	0.10	N	10	55	4.5C	Y	1	Kato,T		
10.396	815745	5.3	B	4A		5			0.05	B		7	4.0C	Y	1	Hasegawa,T		
10.398	815746	4.4		100						EY		8	4.5C	Y	1	Kato,T		
10.40	815747	3.5			8	7	3		0.12	B		11	5.8	Y	1	Washi,S	J	
10.406	815748	5.1	B	100					0.07	B		10	4.7	Y	1	Date,M		
10.41	815749	4.7	M	SAO	8	5	0.83	65	0.06	R	12	22	4.0	Y	4	Nakamura,A		
10.430	815750	3.9	S	100	7	6	1	80	0.07	B		10	2.5	Y	1	Kobayashi,J		
10.438	815751	5.1	B	100, 4A	6.3	7	0.47	55	0.08	R	12.5	40	5.5C	Y	1	Feisheng,J		
10.54	815752	4.5	B	AAVSO					0.11	R						Churyumov,K		
10.60	815753	5.0	B	AAVSO					0.20	R						Churyumov,K		
10.635	815754	5.4	M	4A	20	7	0.08	300	0.150	N	5.3	45	5.5	Y	1	Wikholm,L		
10.68	815755	5.8	B	M	4	6	0.2	80	0.07	N	8	33				Rudenko,S		
10.691	815756	5.1	B	100					0.05	B		7	5.0C	Y	1	Rukkonen,I.T		
10.694	815757	5.1	M	CZ		2			0.05	B		7	4.0	Y	2	Pravec,P		
10.694	815758	4.7	M	4A		6			0.06	B		12	5.0C	N	2	Rapavy,P	K	
10.698	815759	4.5	M	4A		6			0.10	B		25	5.5C	N	2	Rapavy,P	K	
10.70	815760	5.5	B	100	7.5	9	0.5	65	0.203	SC	10	44	5.7C	Y	2	Maraziti,A	L	
10.70	815761					6	1.5		0.080	B		15	3.5C	N	2	Kroon,B		
10.701	815762		CZ		6.5	5	1	75	0.10	N	6	38	4.1	Y	2	Pravec,P		
10.701	815763	5.2	M	CZ	10	6	0.6	35	0.05	B		7	5	T	Y	1	Silhan,J	
10.701	815764	4.3	M	CZ					0.10	B		25	4.5C	Y	1	Valasek,V	M	
10.705	815765	4.8	B	CZ	15	5			0.04	B		7	5.0	Y	1	Brancik,K		
10.707	815766	5.2	M	CZ	50.0	3			0.060	B		12	5.1	Y	1	Barak,R		
10.708	815767	4.7	M	CZ	10	7			0.080	B		10	4.7	Y	1	Bilek,V		
10.708	815768				1.9	5	0.1	90	0.076	R	16	139	5.0C	Y	1	Rukkonen,I.T	N	
10.71	815769	5.3	M	AA	6	7	0.5	105	0.08	R	8.3	26				Keszthelyi,S	O	
10.71	815770	4.9	B	100	10	8	0.5	65	0.05	B		7	5.7C	Y	2	Maraziti,A		
10.720	815771	4.4	S	4A	7	8	1.15	60	0.080	B		20	5.7	Y	1	Meozzi,D		
10.72	815772	5.6	S	4A	12	7	0.5	54	0.05	B		10	5.5	Y	2	Zanut,S		
10.726	815773	4.8	M	100	12	6			0.07	B		20		Y	1	Tanti,T	P	
10.736	815774	5.3	M	CZ	25	4			0.10	B		25	5.7	Y	1	Hajek,P		
10.74	815775	5.0	S	4A					0.08	B		20	4.5	Y	1	Shanklin,J.D		
10.74	815776	5.1	S	99, 100	9	7	0.5	50	0.065	B		12	5.0	N	1	Foulkes,M	Q	
10.740	815777	5.1	M	100	4.5	4	0.25	60	0.07	B		16	5.0C	Y	1	Taylor,M.D	R	
10.740	815778	4.9	B	CZ	20	6			0.10	O		25	3.5C	Y	1	Micek,I		
10.743	815779			100		6		72	0.089	R	5.5	18	5.0	N	1	Ventura,F	S	
10.750	815780	4.9	M	100	7	6	0.58	45	0.05	B		10	5	C	Y	1	Menichetti,R	
10.750	815781	4.9	S	100	13	6	1		0.05	B		10	3.0	N	1	Hurst,G.M	T	
10.750	815782	5.2	S	100	5.5	6	0.20	60	0.04	B		8	5.0C	Y	1	Taylor,M.D	U	
10.750	815783	4.8	S	4A	9	6	1.5	75	0.050	B		7	4.9C	Y	5	Piccinini,M		
10.751	815784	4.5	S	100		6	1.00	77	0.08	B		11	4.2	Y	4	Gainsford,M.J		
10.755	815785	4.0	S	100		7	0.3	60		EY			6.12	Y	6	Haver,R		
10.757	815786	5.0	B	4A	3.5	7	0.83	70	0.080	B		20	5.5C	Y	2	Dionisi,M	V	
10.760	815787	5.7	B	100		3			0.08	B		20	3.5C	N	1	Scardella,M	W	
10.76	815788	5.1	S	4A					0.20	R	12	40	4.5	Y	1	Shanklin,J.D	X	
10.760	815789	4.2		100						EY		7	4.2	Y	4	Gainsford,M.J	Y	
10.760	815790	4.2	S	100	6.5	6	3.67	60	0.05	B		7	6.12	Y	6	Haver,R	Z	
10.760	815791	5.1	B	100	5.6	8	0.27	82	0.050	B		10	4.8T	Y	3	Abbott,J	a	
10.767	815792	4.9	S	4A		8			0.05	B		10	4.52C	Y	5	Melandri,F	b	
10.788	815793	4.9	S	100	3.2	7		80	0.25	N	6	60	3.5	Y	1	Gainsford,M.J	c	
10.8009	815794	4.7	S		20	8	1	41	0.08	B		10	5.0	Y	1	Znasik,M		
10.94	815795	4.5	S	AA	7	7			0.050	B		7				Green,D.N.E	d	
10.972	815796	4.8	B	99	6	3	0.53	43	0.05	B		7	4.5			Lalret,R		
10.976	815797	4.8	M	4A	6	7	0.7	65	0.05	B		7	4.3	Y	1	DeYoung,J.A	e	
10.989	815798	4.8	S	100	6	7	0.37	60	0.035	B		7	5.4C	Y	3	Morrison,W		

NOTE A Coma diameter, tail length and position angle are rough estimations.

NOTE B (PA value may have been incorrectly determined. Ed.) Heavy ground fog.

NOTE C Exceptionally clear.

NOTE D 3 rays in tail. Tail PA 46 deg. to 67 deg.

NOTE E Exc. see. Faint hint of fan shaped tail. Tail length less than 1 deg. Tail length and PA uncertain.

NOTE F Comet's dust tail visible as a bulge on the southern edge of gas tail. At its end gas tail was no more than 10' wide.

NOTE G Observed from within Los Angeles city limits. Probably considerable interference from light pollution (sky glow).

NOTE H (Observer gives coma magnitude as 4.7 and total magnitude as 4.5. Ed.)

NOTE I 7.8.

NOTE J Type I. Type II. Clear. (Observer indicated "Y" method. Translated by IHW staff. Ed.)

NOTE K Coma ellipt.

NOTE L Elliptical coma.

NOTE M Adapted to the actual (rather bad, street lights visible) observing conditions.

NOTE N Coma diameter determined as an average of five transit time observation.

NOTE O 10x50 B and 7 mag. nucleus. [sic]

NOTE P Clouds. Wind.

NOTE Q Some cloud.

NOTE R Seeing Antoniadi II.

NOTE S PA tail (I) 72 deg. Clouds.

NOTE T Clouded soon after observation started. Coma diameter and tail length approximate.

NOTE U Tail suspected to 0.5 deg. length.

NOTE V Coma diameter accuracy +/-0.6. Tail length accuracy +/-0.01.

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NOTE W Tail spanned PA 305 to 310.  
 NOTE X No features in tail or coma.  
 NOTE Y Negative observation.  
 NOTE Z Tail fan-shaped.  
 NOTE a Comparison stars 4.7, 5.3.  
 NOTE b Veiled sky.  
 NOTE c Haze. Tail length uncertain.  
 NOTE d Coma diameter approximate.  
 NOTE e High thin overcast.

## SUB-NETWORK: DRAWING

Date(UT)	ACON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
10.005	830754		0.105	N	4.2	55, 30	15	6.0		Williams,D.J	A
10.012	830755	0.6	0.203	R	13	85,150,225	5	4.7	1	Fox,J.H	B
10.122	830756	3	0.050	B		7	10	6.0	2	Cook,A.J	C
10.708	830757	0.08	0.100	B		25	20	3.8	1	Gojdic,S	D
10.717	830758	1	0.080	R	8.3	26	26	5.0	1	Keszthelyi,S	E
10.719	830759	0.40	0.203	SC	10	44, 77	30	5.7	2	Maraziti,A	F
10.727	830760	0.23	0.205	N	5	66,150,300	16	4.9	5	Piccinini,M	G
10.736	830761	0.26	0.254	N	6.4	41, 65	30	4.8	3	Abbott,J	H
10.744	830762	0.12	0.298	N	5	65,269	14	5.5	1	Stott,D	I
10.757	830763	0.48	0.080	B		20	40	5.5	2	Dionisi,M	J
10.761	830764	1.4	0.05	B	8	10	4	4.5	1	Menichetti,R	K

NOTE A Halley is still very easy to spot with the Astroscan. Halley doesn't appear as star-like in the center. I used the 4" with powers of 30 and 55. (Separate drawings at 55x and 30x submitted. Ed.)  
 NOTE B Nucleus appears almost stellar inside an inner coma. Outer coma fans out broadly to E into tail. Bright, linear streak just N of tail center line. W edge of coma slightly brighter than the rest.  
 NOTE C Tail contained a central bright streak.  
 NOTE D Atlas Eclipticalis - A. Becvar.  
 NOTE E Tail 0.5 at PA 105.  
 NOTE F Tail at PA 65 deg.  
 NOTE G City lights interfered with the observation. Tail at PA 75 deg. Vertex distance = 4.05', semi latus rectum P1 = 4.5', P2 = 4.5'.  
 NOTE H Twilight interfered with the observation. Central condensation approximately 32 arc sec. Principal tail at PA 84 deg., approximately 19.7 arc min. by 2.1 arc min. at root tapering to 1.1 arc min. Faint "brush" at PA 122 deg. (centre), approximately 2.7 arc min. by 1.6 arc min. tapering to 0.8 arc min. Northernmost ray at PA 73 deg., approximately 6.1x0.8 arc min. Southernmost ray at PA 101 deg. approximately 5.6x0.8 arc min. Vertex distance 1.7'. Semi latus rectum (northward) 1.8'. Semi latus rectum (southward) 1.9'. Observation made over 30 minutes with limit figures above referring to end of observation. Bright sky conditions at start of observation rendered faint detail invisible and the hard-edged central condensation appeared distinctly "planetary". As the sky darkened, the inner coma appeared elliptical in shape, fading into the main long tail (traced to 19.7'). Various features were seen 'downstream' and away from the coma including a "brush" to the south.  
 NOTE I Hood at PA 280-20. Tail at PA 58. Coma spur at PA 120. Hood is vague but surrounds nuclear condensation for some 100 deg. Coma still shows an irregular spur to southeast.  
 NOTE J Jet at PA 43 deg. Spot at PA 153-232 deg. Corona at PA 21-122 deg. Protuberance at PA 50-113 deg. with vertex at PA 70 deg. There is a tail zone more bright than ones stated. This zone was a length of about 10' and it is large in variable mode by 6' to 8'. [sic] City lights interfered with the observation.  
 NOTE K Tail at PA 45 deg. Vertex distance = 3.5', semi latus rectum P1 = 3.5', P2 = 3.5'.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
10.004	850713	0.305	1.5	0.203	6.8 x 4.5	1.50	Kodak 2415		Y	X	251/P	1	Sabia,J.D	A
10.024	850714	0.305	1.5	0.203	6.8 x 4.5	2.25	Kodak 2415		Y	X	250/P	1	Sabia,J.D	A
10.026	850715	0.400			5.2 x 3.4	4.00	Fujichrome	400/	N	X	374/S	2	Woidyla,B	B
10.046	850716	0.400		0.200	5.2 x 3.4	7.00	3M 1000	1000/	N	X	411/S	2	Woidyla,B	B
10.052	850717	0.400		0.200	5.2 x 3.4	7.00	3M 1000	1000/	N	X	412/S	2	Woidyla,B	B
10.058	850718	0.400			5.2 x 3.4	7.00	Fujichrome	400/	N	X	384/S	2	Woidyla,B	B
10.062	850719	1.583	8	0.203	1.3 x 0.9	15.00	Kodak 2415		Y	S	29/P	1	Minton,R.B	C
10.062	850720	0.400			5.2 x 3.4	4.00	Fujichrome	400/	N	X	379/S	2	Woidyla,B	B
10.066	850721	0.400			5.2 x 3.4	5.00	Fujichrome	400/	N	X	378/S	2	Woidyla,B	B
10.094	850722	2.000	10	0.200	1.0 x 0.7	0.50	Kodacolor	1000/	N	S	7/N	1	Gronck,J.D	
10.103	850723	2.306	5	0.45	0.9 x 0.6	18.00	Kodak Tri-X		N	M	16/S	1	Webb,R	D
10.105	850724	0.610	4	0.152	3.4 x 2.3	3.00	Kodak Tri-X		N	X	1/N	1	Lazerson,E	E
10.109	850725	0.500	3.6	0.140	4.1 x 2.7	5.50	3M 1000	1000/	N	O	13/N	7	Edberg,S.J	
10.117	850726	2.31	0.45		0.9 x 0.6	8.00	Kodak Tri-X		N	S	15/S	1	Webb,R	F
10.118	850727	0.400	8		5.2 x 3.4	60.00	Kodak 2415		Y	X	97/P	2	Snyder,L.F	
10.119	850728	0.500	3.6	0.140	4.1 x 2.7	20.00	3M 1000	1000/	N	O	14/N	7	Edberg,S.J	
10.119	850729	0.260	5.2	0.050	7.9 x 5.3	20.00	Ilford HP 5	500/	N	O	52/C	7	Edberg,S.J	
10.124	850730	3.200	7	0.457	0.6 x 0.4	28.00	Kodak IIA-O		N		01/P		Padilla,S	
10.126	850731	0.300	1.5	0.200	6.9 x 4.6	4.00	Kodak 2415		Y	S	7/P	2	Yen,B	G
10.135	850732	0.260	5.2	0.050	7.9 x 5.3	20.00	3M 1000	1000/	N	O	15/N	7	Edberg,S.J	
10.143	850733	0.260	5.2	0.050	7.9 x 5.3	1.00	3M 1000	1000/	N	O	16/N	7	Edberg,S.J	
10.144	850734	0.500	3.6	0.140	4.1 x 2.7	1.00	3M 1000	1000/	N	O	17/N	7	Edberg,S.J	
10.148	850735	0.050	1.4		39.6 x 27.0	1.00	3M 1000	1000/	N	O	18/N	7	Edberg,S.J	
10.151	850736	0.050	1.4		39.6 x 27.0	5.00	3M 1000	1000/	N	O	19/N	7	Edberg,S.J	
10.163	850737	0.508	5	0.100	4.1 x 2.7	12.00	Kodak 098		N		001/P	5	Royer,R	
10.166	850738	0.180	2.8		11.4 x 7.6	3.00	3M 1000	1000/	N	S	10/P	2	Cook,A.J	
10.388	850739	0.850	3.4	0.25	2.4 x 1.6	10.00	Kodak 6415		Y	C	8/P	1	Kojima,T	H
10.391	850740	1.760	5.8	0.300	1.2 x 0.8	10.00	Kodak 2415		Y		104/P	1	Niijima,T	I
10.399	850741	1.760	5.8	0.300	1.2 x 0.8	10.00	Kodak 2415		Y		105/P	1	Niijima,T	I
10.427	850742	0.500	2.5		4.1 x 2.7	14.97	Kodak 2415		Y		2/T	1	Sakai,Y	J
10.439	850743	0.500	2.5		4.1 x 2.7	10.00	Kodak 2415		Y		1/T	1	Sakai,Y	K
10.530	850744	0.300	5.6		6.9 x 4.6	6.00	Fujichrome	400/	N	X	383/S	2	Woidyla,B	B
10.704	850745	0.500			4.1 x 2.7	38.33	Fomapan F27	400/27	N	O	7/N	1	Maturkanic,M	L
10.710	850746	1.000	5.6		2.1 x 1.4	60.00	Kodak Tri-X	320/26	N	O	13/N	1	Skvarka,J	M
10.713	850747	0.135	1.8		15.2 x 10.2	3.00	Fujichr. Pro	100/	Y		12/P	2	Conrad,R	N
10.733	850748	0.300	1.5	0.200	6.9 x 4.6	4.00	Kodak 2415		Y	O	1/P		Jager,M	O
10.736	850749	0.300	1.5	0.200	6.9 x 4.6	8.00	Kodak 2415		Y	O	201/P		Jager,M	P
10.741	850750	1.000	5	0.200	2.1 x 1.4	13.00	3M 1000	1000/	N	X	6/S	1	Vanin,G	
10.748	850751	1.780	5	0.356	1.2 x 0.8	30.00	3M 1000	1000/	N	M	2/P	1	Mobberley,M	Q
10.751	850752	1.400	5.6	0.260	1.5 x 1.0	20.00	Ilford FP4	125/22	N	O	5/C	1	Paolinetti,R	R
10.757	850753	0.600	6		3.4 x 2.3	35.00	Ilford FP4	400/27	N	O	0/C		Paolinetti,R	S
10.763	850754	1.400	5.6	0.260	1.5 x 1.0	10.00	Ilford FP4	125/22	N	O	6/C	1	Paolinetti,R	R
10.788	850755	1.400	5.6	0.260	1.5 x 1.0	1.00	Ilford FP4	125/22	N	O	7/C	1	Paolinetti,R	R
10.801	850756	0.300	4		6.9 x 4.6	20.00	Kodak 2415		Y	S	10/P	4	Portela,A	T

NOTE A Photograph made by J. Kamichitis and J.D. Sabia.  
 NOTE B Observer's image identifier is preceded by prefix 1. Ed.)  
 NOTE C (Print submitted by observer is a composite of three 5 min. exposures, the first and second were separated by 5 min. and the second and third were separated by 10 min. Ed.)  
 NOTE D Slight zodiacal light interference. Limited to 18 min. Inner coma and starlike central condensation visible on all original negatives. Film push processed slightly. (Observer indicated C-type guiding as well as M. Ed.)



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NOTE E Tail 1/2 of neg. "Push" processed to 800 ASA.  
NOTE F Film push processed slightly.  
NOTE G Start time approximate. (Observer's image identifier is 31. Ed.) Instrument is Schmidt camera.  
NOTE H Instrument is Wright-Schmidt. Large format (120 size) film used.  
NOTE I (Observer's image identifier is preceded by prefix Nj. Ed.)  
NOTE J Fuji: SC-54 filter used; cuts off <540 nm. Seeing 2/5. KF 2550 meniscus camera used; 9 deg. field. Large format film used. Hypersensitized in N2 for 12 hours and N2/E2 for 24 hours at 50 C.  
NOTE K Seeing 4/5. KF 2550 meniscus camera used; 9 deg. field. Large format film used. Hypersensitized in N2 for 12 hours and N2/E2 for 24 hours at 50 C.  
NOTE L Twilight and city lights interfered with the observation.  
NOTE M 120 size film used.  
NOTE N Twilight interfered with the observation. UV filter used. (This probably means a UV blocking, clear glass filter. Ed.)  
NOTE O Coma 10 arc min.; plasma tail greater than 4 deg.; dust tail about 3 deg. Instrument is Schmidt camera.  
NOTE P Magnitude 4.0; coma 20 arc min.; tails 7 deg. at PA 55, 65 arc min. at PA 64. (Print submitted is composite of two 4 min. exposures separated by 4 min.; the image made on 860110 at 1734 is one part of the composite. Ed.) Instrument is Schmidt camera.  
NOTE Q Double star images caused by tree occulting guide star and gale force winds. Considerable cloud at start and finish of exposure. Also, possible elongation of star images by atmospheric refraction.  
NOTE R (Observer's image identifier is followed by suffix A. Ed.)  
NOTE S Large format film (4x5 inch) used. Instrument is astrograph.  
NOTE T (Time supplied by observer may have been start time or mid-exposure time. Ed.)

DATE: 11 JAN 1986

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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	
11.002	815799	5.2	B	4A		7			0.08	B		11	4.0	Y	1	Gorski,L		
11.01	815800	4.9	B	4A	7		0.75		0.080	B		20		Y		Kronk,G		
11.01	815801	5.5	B	4A	5.2	8	0.50		0.335	N	4.5	56		Y		Kronk,G	A	
11.014	815802		B	99	6	2	0.53	47	0.05	B		7				Lalret,R		
11.014	815803	5.0	B	99					0.080	B		20	5.5	Y		Smith,D		
11.031	815804	4.8	M	100	24	8	2	57	0.080	B		20	6.7	Y	2	Ariail,R.B		
11.035	815805	4.3	B	4A	35	8	1.5	64	0.20	SC	10	77	5.5	Y	1	Hodonsky,K		
11.035	815806		B	4A	24	7			0.200	SC	10	78	6.2	N	1	Saraceno,J		
11.035	815807	5.2	B	4A					0.050	B		7				Saraceno,J		
11.052	815808	4.5	S	4A	4	3			0.152	N	8	135	5	Y	1	Lewis,D.E		
11.06	815809	4.6	V	4A			2.0	60		EY			5.5	Y	1	Keen,R		
11.08	815810	4.7	B	4A			3.0	60	0.040	B		8	5.5	Y	1	Keen,R	B	
11.083	815811	5.6	S	4A	36	7		80	0.203	SC	10	125	4.5C	Y	1	Gronck,J.D	C	
11.10	815812	4.6	M	4A			7.0	64	0.080	B		20	5.0	Y	17	Morris,C.S		
11.11	815813	4.6	M	4A					0.050	B		12	5.0	Y	17	Morris,C.S		
11.115	815814	4.9	M	100					0.050	B		7		N	3	Jeffrey,J		
11.115	815815	4.9	M	100					0.050	B		7		N	3	Jeffrey,J		
11.125	815816	4.9	B	4A	15	8	1		0.05	B		10	5.3	Y	1	Saxon,V.P		
11.125	815817	4.9	B	100, 4A	10	7	2.75	300	0.050	B		10	6.0Z	Y	3	Stapleton,J	D	
11.13	815818	4.5	B	4A			2.5	65		EY			6.5	Y	5	Hale,A		
11.13	815819	4.7	M	4A			5	65	0.05	B		10	6.5	Y	5	Hale,A		
11.13	815820	4.6	B	4A						EY			5.0	Y	17	Morris,C.S		
11.208	815821	4.7	M	4A	22	7	1.67	295	0.05	B		10	6.0	Y	2	Fabre,R	E	
11.250	815822	5					6		0.050	B		7	6.0	Y	1	Krisciunas,K	F	
11.368	815823	4.7	M	4A	15	6	1	60	0.035	B		7	5	Y	1	Watanabe,A		
11.368	815824	4.7	M	4A	20	6			0.035	B		7	5	Y	1	Watanabe,H		
11.38	815825	4.7	B	4A	3.4	7	1.5	60	0.05	B		7	4.0T	N	1	Kanai,K		
11.386	815826	4.5	M	100	5	8	0.6	60	0.030	B		8	5.0C	Y	1	Kato,T		
11.39	815827	4.9	S	AAVSO	3	7	1	65	0.07	B		10	5.5	Y	1	Hayashi,A		
11.39	815828	4.8	M	4A	4.1	8	2	60	0.08	B		11	5.5	Y	3	Mitsuma,S	G	
11.39	815829	4.8	M	4A			0.6		0.05	B		7	4.0	Y	2	Suzuki,K		
11.396	815830	4.1	M	4A	4.3	7	1.2		0.1	N	10	40	4.5	Y	1	Ichikawa,K	H	
11.396	815831	5.3	B	4A			5		0.05	B		1	4.0C	Y	1	Hasagawa,T		
11.40	815832	4.8	B		9	6	1.7	65	0.16	N	4.8	24		Y	1	Maeda,S		
11.40	815833	4.9	M	SAO		7	0.67	65	0.06	R	12	22	4.0	Y	3	Nakamura,A		
11.410	815834	3.9	S	100	7	6	4	80	0.07	B		10	3.5	Y	1	Kobayashi,J		
11.41	815835	4.3	S	4A					0.08	B		15	4.7T		2	Lovejoy,T	I	
11.410	815836	4.7	B	4A			1		0.035	B		7		Y	2	Okada,M		
11.41	815837		SAO		8	8	1	80	0.15	N	6	23	5	Y	3	Tanikawa,M	J	
11.41	815838	4.7	B	SAO					0.05	B		7	5	Y	3	Tanikawa,M		
11.443	815839	4.5	B	100	10	6	1.5		0.065	R	7.7	28	6.0	Y	4	Hayashi,H		
11.451	815840	5.1	B	4A	8.8	7	0.47	60	0.08	R	12.5	40	6.0	Y	1	Feisheng,J		
11.60	815841	5.0	B	AAVSO					0.20	R						Churyumov,K		
11.62	815842	5.0	B	4A	4	7	0.3		0.045	B		7	4.0T	Y	1	Speil,J	K	
11.69	815843	4.5	B	AAVSO					0.11	R						Churyumov,K		
11.70	815844	3.6		DCS 7		6				EY			4	C	N	2	Kroon,B	L
11.708	815845				8	7	2	90	0.20	SC	10	111	5.5	Y	1	Bremseth,P.-J	M	
11.708	815846	4.7	S						0.05	B		10	5.5	Y	1	Bremseth,P.-J		
11.708	815847	4.8	B	4A	12	7	2	45	0.050	B		10	5.0	Y	1	Marakfia,G	N	
11.71	815848	4.8	B	100		8	0.5	65	0.05	B		7	5.9C	Y	2	Maraziti,A		
11.72	815849	4.7	M	100	9	6	0.8	52	0.06	R	4	10	5.0	Y	4	Granslo,B.H	O	
11.72	815850	5.5	B	100	10	8	0.5	65	0.203	SC	10	44	5.9C	Y	2	Maraziti,A		
11.72	815851	3.9	S	DCS 7	10	7	2.0	68	0.060	B		12	5	T	Y	3	van de Weg,R.L.W	P
11.726	815852	4.8	S	100	7	6			0.056	B		8	4.2C	N	1	Fischer,D	Q	
11.73	815853	4.9	B	AA	9	6	0.7	65	0.080	B		20	5.0	N	1	Schmeer,P	R	
11.73	815854	4.7		100						EY			5.9C	Y	2	Maraziti,A	S	
11.730	815855	4.9	M	4A	4.5	6	0.7	60	0.089	R	5.5	18	5.5	N	1	Ventura,F	T	
11.733	815856	4.8	M	100	10.5	7	1.0	52	0.07	B		20	5.5	Y	1	Tanti,T	U	
11.74	815857	4.1	S	100		7	3.5	59	0.05	B		10	5.5	Y	1	Bouma,R.J		
11.743	815858	4.8	B	IHW	5	2	1.5		0.080	B		20	4.0	Y	1	Guthier,O		
11.744	815859	4.9	S	100		6	1.00	80	0.08	B		11	4	Y	1	Gainsford,M.J	V	
11.75	815860	4.9	S	4A					0.08	B		20	5.3		1	Shanklin,J.D		
11.750	815861	5.2	S	99	7	8	0.67	55	0.065	B		12	5.5	Y	1	Foulkes,M	W	
11.750	815862	4.8								EY			5.5	Y	1	Rogers,J.H		
11.750	815863	4.9	B	4A		8	0.38	63	0.080	B		10	5.5	Y	1	Rogers,J.H	X	
11.750	815864				4	6	0.67	0.200	R	14		7	5.5	Y	1	Rogers,J.H	Y	
11.750	815865	4.7	B	4A	20	9	1.5	85	0.06	R		25	5	Y	1	Ward,A	Z	
11.75	815866	4.3	B	4A	10	7	1.00	60	0.050	B		7	5.5	Y	2	Merlin,J.-C		
11.756	815867	4.6	S	4A	6.5	8	0.73	61	0.05	B		10	4.7	Y	1	Hurst,G.M		
11.760	815868	5.0	S	100	3.2	7		75	0.25	N	6	60	4	Y	1	Gainsford,M.J	a	
11.76	815869	4.6	B	4A	8	5			0.150	N	5	25	5.5	Y	2	Merlin,J.-C		
11.762	815870	4.5	S	4A	5.3	8	0.87		0.08	B		15	4.7	Y	1	Hurst,G.M	b	
11.763	815871	4.8	B	4A	15	8	1.5	85	0.050	B		10	5	Y	1	Ward,A		
11.771	815872	4.7	B	4A	6	8	1.0		0.06	R	11.7	25	C	N	4	Gallego,J	c	
11.771	815873	5.0	B	4A	1.9				0.150	N	5	42	5.5	Y	1	Llabres,J	d	
11.779	815874	4.7	B	4A	10	7	1		0.206	SC	10	65	5.3	Y	1	Gomez,A	e	
11.785	815875	5.0	B	4A	9	6	1	45	0.114	N	3.7	13	5.0	Y	4	Gomez,T.L	f	
11.79	815876	4.8			4		0.6	65	0.034	B		9			2	Pereira,A	g	
11.792	815877	5.0	B	4A	20		1.5		0.08	B		15	T	N	3	Losada,R		
11.93	815878	4.3	S	4A	30	7	2	70	0.05	B		7	6.0	Y	1	Harrington,P		
11.95	815879	4.8	B	AA	10				0.050	B		7				Green,D.W.E	h	
11.95	815880	4.5	M	AA	10	7			0.050	B		7				Green,D.W.E	h	
11.95	815881	4.6	S	AA					0.050	B		7				Green,D.W.E		
11.97	815882	4.6	B	AAVSO	5	8	1.5	67	0.050	B		10				Bortle,J.E	h	
11.97	815883	4.5	V	AAVSO	18					EY						Bortle,J.E	i	
11.97	815884								0.500	N	5	90				Bortle,J.E		
11.98	815885	4.6	B	AA						EY						Green,D.W.E		
11.98	815886	4.4	S	AA						EY						Green,D.W.E		
11.990	815887	4.9	S	4A					0.035	B		70	4.1C	Y	1	Hudak,D.M		

NOTE A Tail PA 290 deg. to 60 deg.

NOTE B Modified Sidgwick method used.

NOTE C Exc. see. Faint hint of fan shaped tail. Tail length less than 1 deg. Tail length and PA uncertain.

NOTE D Perfect see with eye. [sic] (PA approximate and may have been measured incorrectly. Ed.)

NOTE E (PA value appears to be measured incorrectly. Ed.)

NOTE F Strong zodiacal light.

NOTE G m2 = 7.8.

NOTE H PA = E.

NOTE I Tail length = short.

NOTE J m2 (observer's symbol believed to mean "approximately equal to", Ed.) 9.

NOTE K Comet low above horizon, aurora.

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NOTE I Tail length determined in 15x80 binoculars: 1.8 deg.  
 NOTE M Coma diameter uncertain.  
 NOTE N Tail small, curved. (Translated by INW staff. Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE O Indications of a double tail.  
 NOTE P Chart 100 also used. Tail length is lower limit.  
 NOTE Q Coma diameter and DC approximate.  
 NOTE R Omicron Agr: 4.7 mag., 32 Agr: 5.3 mag.  
 NOTE S Clearly seen.  
 NOTE T Tail length (I) greater than 0.7 deg; (II) 0.2 deg. Some tail structure including a short (10') spike at PA 67 could be observed. A photograph taken on this date at 1800 UT shows a narrow tail 92' long at PA 62 deg.  
 NOTE U Seeing good, transparency excellent. Low. Type I tail 1.0 deg. at PA 52, type II tail 0.5 deg. at PA 75.  
 NOTE V Low.  
 NOTE W Clear.  
 NOTE X Coma small. Tail PA approximate.  
 NOTE Y Magnification  $\times 40$  used. Tail 3' across at base, approximately 12' across at end. Inner part brighter than ever, now clearly visible at last with edge sharper on S side; outer part very faint and diffuse; no 'horns'. PA 50 to 55.  
 NOTE Z Faint blue.  
 NOTE a Low. Tail length uncertain.  
 NOTE b Fan tail, PA 58 to 73.  
 NOTE c Tail length approximate.  
 NOTE d Thin clouds.  
 NOTE e Drawing 2.  
 NOTE f Clouds. Tail length approximate.  
 NOTE g (Observer gave limit as 8.6. Ed.)  
 NOTE h Coma diameter approximate.  
 NOTE i Perfectly stellar nuc., 9.2 mag.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DURM	Lim	Site	Observer(s)	Notes
11.003	830755		0.152	N	4	30	20	5	2	Robinson,R.L	A
11.021	830766	0.2	0.125	N	8	40	30	4.0	2	Bailey,G	
11.055	830767		0.203	SC	10	81			2	Lohvinko,T.M	B
11.42	830768	1.38	0.15	N	6	23	14	5	3	Tanikawa,M	C
11.693	830769	0.23	0.20	SC	10	111	45	5.5	3	Bremseth,P.-J	D
11.715	830770	2	0.05	R	7	15, 40	20	5.0	4	Kopp,M	E
11.746	830771		0.254	N	6	150			1	Guthrie,O	F
11.75	830772	2	0.065	B		12	10	5.6	1	Foulkes,M	G
11.750	830773	0.20	0.298	N	5	40, 65, 269	20	6.2	1	Stott,D	H
11.764	830774	0.35	0.15	N	5	25, 75	20	5.5	2	Marlin,J.-C	I
11.771	830775		0.060	R	11.7	25			4	Gallego,J	J
11.771	830776	0.25	0.356	SC	11	200	120		1	Verdenet,M	K
11.773	830777	0.21	0.203	SC	10	80, 220	16	5.5	1	Foulkes,M	L
11.779	830778		0.206	SC	10	65			8	Gomez,A	M
11.785	830779		0.114	N	3.7	13			4	Gomez,T.L	N
11.786	830780	1.7	0.08	B		15	84	4.7	1	Hurst,G.M	O
11.788	830781		0.15	N	5	42, 84	34	5.5	1	Llabres,J	P
11.792	830782		0.080	B		15			3	Losada,R	Q
11.979	830783	0.65	0.050	B		7	61	5.3	4	Will,M	R

NOTE A Central condensation bright. Most notable feature was nearly complete absence of tail on south side, about 3 coma diameters behind the head.  
 NOTE B Comet Halley is observed on this date to have an integrated magnitude of 5.0 (check stars: HR 739, HR 740) and a nuclear magnitude of 6.8 (check stars: HR 72, SAO 76017). The nuclear size is measured to be 81.21" and has a coma size of 294.37". There is a spike at PA 86, but the blue tail takes up nearly all the view as it passes past the field of view. The long spike mentioned earlier is a darker blue than the tail. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE C DC = 8/10. Dia. and two features at PA 80 (observer's symbol believed to mean "approximately equal to", Ed.) 8', 30' long, and 1 deg. long, respectively.  
 NOTE D A big and bright central condensation, which seemed oval, about 1-2 arc min. long. The coma was "half" to north, as it stopped there, over the condensation. A bright spine was visible straight east. Two tails was observed, with the northern as the brightest. The spine was situated in the southern part of the north tail. The southern tail was weak and a little broad. In the 10x50 binocular, I could see the bright comet's head formed like a drop or oval. A 2 deg. long tail could be seen. The brightest part of the tail was 2-3 coma diameters behind the head. The outer part of the tail was very weak. In the telescope, it seemed as the "spine" began south of the central condensation, as it was curved there. [sic]  
 NOTE E Coma bright(!) + definite intensity peak at centre. Tail: less irregular, bright and long(!). Vertex distance: V = 13.5'. Semi latus rectum: P1 = 11.0', P2 = 10.5'. Tail PA = 56 deg.  
 NOTE F Coma very diffuse, without distinct structure. (Duration not indicated. Time of observation is assumed to be start time. Translated by INW staff. Ed.)  
 NOTE G Coma diameter 7'x6', DC = 8. Coma centre bright. Coma slightly elliptical. Tail visible, length 40' at PA 55. No other detail seen.  
 NOTE H Hood 1 at PA 180-250. Hood 2 at PA 310-10. Tail at PA 54. Structure in nuclear condensation, forming almost a triangular shape around the centre.  
 NOTE I Tail streamer at PA 28; tail at PA 60, then curved toward PA 36 at 9' from nucleus, taking initial direction at 25' from nucleus, becomes larger and diffuse; tail streamer at PA 70; jet at PA 330, nearly sunward.  
 NOTE J Field 1 deg. 32'. High DC (approximately 8). (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE K (Additional drawing submitted made using 11x80 binoculars (2.02"/mm). Ed.)  
 NOTE L Tail at PA 50, length 20'. Spike at PA 0, length 4'. Coma diameter 4'x3' (elliptical extension of 8') DC = 7. Coma elliptical. Nucleus almost star-like offset from centre of coma in direction of 230 deg. Tail visible. Faded rapidly from coma. Faint spike feature seen. Star visible through tail.  
 NOTE M (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE N Tail longitude about 1 deg. [sic] The beginning of the plasma tail is brighter than the rest. It's difficult to size up the total longitude, because I'm not be able to see where the tail finish. [sic] (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE O Very bright intense central condensation offset PA 245 deg. from coma centre. Tail broadens with length to a total 52' fanned PA 58 deg. to 73 deg. Beyond 30' from coma tail very faint. Very impressive in 15x80 binoculars.  
 NOTE P At 42x, coma 1.9 arc min.; vertex distance 0.86 arc min.; tail 29.2 arc min. Coma diameter obtained with 13 timings. Average value: 7.2 sec.  
 NOTE Q The astronomical twilight hasn't finished yet. Tail 1.5 deg. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE R The coma appears slightly drop-shaped. First extension of the tail has the same intensity and luminescence as the outer coma. The second extension of the tail is noticeably fainter and more diffuse and finally disperses into invisibility about a degree away from the coma. Distinguishing features in the tail seem to be absent. Both extensions are of a uniform texture. Tail, 1st extension 9.69' long; 2nd extension 48.45' long, both at PA 303. Total tail length 58.15'. Coma, inner coma diameter 2.26'; outer coma diameter major axis 5.85', minor axis 5.65'. Vertex = 2.58'; semi latus = P1 = P2 = 2.83'.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
11.006	850757	1.970	5.5	0.355	1.0 x 0.7	8.00	Kodak 2415		Y	O	9/P	1	Crist,M	A
11.013	850758	1.970	5.5	0.355	1.0 x 0.7	8.00	Kodak 2415		Y	O	10/P	1	Crist,M	B
11.026	850759	0.229	1.7	0.140	9.0 x 6.0	15.00	Kodak 2415		N	X	009/P	1	Allen,M.T	C
11.027	850760	1.970	5.5	0.355	1.0 x 0.7	16.00	Kodak 2415		Y	O	11/P	1	Crist,M	D
11.114	850761	0.050	2.8		39.6 x 27.0	20.00	3M 1000	1000/	N	O	3/N	7	Edberg,S.J	

DATE: 11 JAN 1986

DATE: 11 JAN 1986

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
11.121	850762	0.500	3.6	0.140	4.1 x 2.7	41.00	Kodachrome	64/	N	O	15/N	7	Edberg, S.J	
11.121	850763	2.000	10	0.203	1.0 x 0.7	1.00	Kodak VRL1000	1000/	N		35/N	1	Persell, D	
11.126	850764	0.300	1.5	0.200	6.9 x 4.6	4.00	Kodak 2415		Y	S	8/P	2	Yen, B	E
11.127	850765	0.610	4	0.152	3.4 x 2.3	3.00	Kodak Tri-X		N	X	2/N	1	Lazerson, H	F
11.127	850766	2.000	10	0.203	1.0 x 0.7	1.00	Kodak VRL1000	1000/	N		37/N	1	Persell, D	
11.129	850767	0.050	1.4		39.6 x27.0	20.00	3M 1000	1000/	N	O	4/N	7	Edberg, S.J	
11.144	850768	0.260	5.2	0.050	7.9 x 5.3	10.00	3M 1000	1000/	N	O	5/N	7	Edberg, S.J	
11.150	850769	0.050	1.4		39.6 x27.0	1.00	3M 1000	1000/	N	O	6/N	7	Edberg, S.J	
11.380	850770	0.850	3.4	0.25	2.4 x 1.6	10.00	Kodak 6415		Y	C	9/P	1	Kojima, T	G
11.401	850771	1.760	5.8	0.303	1.2 x 0.8	9.00	Kodak 2415		Y		11/P	1	Niijima, T	E
11.707	850772	7.417	7.3	1.016	0.3 x 0.2	41.00	Kodak 103a-D		N		2/P	1	Gruengard, E	I
11.743	850773	1.780	5	0.356	1.2 x 0.8	36.40	3M 1000	1000/	N	M	3/P	1	Mobbarley, M	J
11.762	850774	0.500	5.6		4.1 x 2.7	10.00	Kodak Tri-X	400/	N	X	1/P	1	Ward, A	K
11.763	850775	0.500	8		4.1 x 2.7	10.00	Fujichrome	400/27	N	O	7/S	1	Townsend, R	
11.767	850776	0.500	5.6		4.1 x 2.7	3.25	Kodak Tri-X	400/	N	X	2/P	1	Ward, A	K
11.778	850777	0.700	5	0.14	2.9 x 2.0	32.00	Kodak IIA-F		N	M	50/P	1	Ridley, H.B	L
11.789	850778	1.270	5	0.254	1.6 x 1.1	18.50	Kodak 2415		Y	O	49/P	1	Johnstone, G.F	
11.816	850779	0.135	2.8		15.2 x10.2	19.00	Kodak 2415		Y	S	1/P		Izquierdo, J	M
11.961	850780	0.050	4.0		39.6 x27.0	7.00	Kodak Tri-X		N		191/P		Gianforte, J.S	N
11.997	850781	0.305	1.5	0.203	6.8 x 4.5	2.50	Kodak 2415		Y	X	254/P	1	Sabia, J.D	O

NOTE A (Observer's image identifier is 9A. Ed.) City lights interfered with the observation. Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.

NOTE B (Observer's image identifier is 10A. Ed.) City lights interfered with the observation. Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.

NOTE C Start time is approximate.

NOTE D (Observer's image identifier is 11A. Ed.) City lights interfered with the observation. Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.

NOTE E Start time approximate. (Observer's image identifier is 35. Ed.) Instrument is Schmidt camera.

NOTE F Plane lights. "Push" processed to 800 ASA.

NOTE G Instrument is Wright-Schmidt. Large format (120 size) film used.

NOTE H (Observer's image identifier is 860111-1. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

NOTE I Instrument is Ritchey-Chretien design. Observer assisted by N. Arav.

NOTE J Elongated (apart from offset direction) star images presumably due to atmos. refraction. Comet (especially tail) not as prominent photographically as on 10th - probably due to twilight fogging.

NOTE K UV filter used.

NOTE L (Observer's image identifier is preceded by prefix ZA. Ed.) Instrument uses photographic plates.

NOTE M Too much twilight and strong zodiacal light. These probably affect the observation.

NOTE N (Observer's image identifier is 109-1. Observer listed emulsion speed as ASA 800. Ed.)

NOTE O Photographs made by J. Kamichitis and J.D. Sabia. Clouds near horizon appear.

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	ACN#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
11.984	870117	42P-O	CL	0.400	6.3		10.00	Kodak 2415		N	C	14/P	1	Grieser, D	A
11.992	870118	42P-O	CL	0.400	6.3		10.00	Kodak 2415		N	C	15/P	1	Grieser, D	A

NOTE A Prism glass type uncertain. Film emulsion at ambient temperature of 0 C.

DATE: 12 JAN 1986

DATE: 12 JAN 1986

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		
12.000	815888	4.8	B	4A															
12.000	815889	5.3	B	4A	5.8	5.7	7	3.0	60	0.050	B	10	5	Y	2	Robinson,R.L			
12.000	815890			4A			6	0.97	303	0.050	B	7	5.3TZ	Y	4	Willi,M	A		
12.007	815891	4.8	M	4A	1.7		7	3		0.05	B	20	4.7	Y	4	Williams,D.J	B		
12.008	815892	4.8	M	4A	7		6	3.0	56	0.05	B	7	5.3	Y	5	Diaz P.,E			
12.008	815893	4.3	S	4A							Y	5.3		Y	5	DeYoung,J.A	C		
12.010	815894	4.1	S	100	8.6		8	0.5	62	0.108	N	4	24	5.0	Y	1	DeYoung,J.A	D	
12.010	815895	4.9	B	99						0.080	B	20	4.8	Y		Franch,J	E		
12.012	815896	5.5	M	4A				1.0	90	0.050	B	10	5.5	Y	1	Smith,D			
12.017	815897	5.9	B	4A	30	15	6	1.5	80	0.152	R	5	24	4.7	N	1	Smith,A	F	
12.02	815898	5.8	B	100	7		1			0.035	B	7	4.8	Y	1	Fox,J.H	G		
12.02	815899				34		1				Y	4.8		Y	1	Jacobson,E			
12.03	815900	4.8	B	4A			8	0.67		0.080	B	20		Y		Jacobson,E			
12.03	815901	5.4	B	4A	3.7		8			0.335	N	4.5	56		Y	Kronk,G			
12.035	815902	4.8	M	100	25		8	2.25	62	0.080	B	20	6.5	Y	2	Kronk,G	H		
12.10	815903	4.3		4A					62		Y	5.0		Y	7	Ariail,R.B			
12.10	815904	4.3	S	4A	10		7	2	60	0.080	B	11	5.5	Y	2	Morris,C.S			
12.10	815905	4.3	S	4A	10		7	1.5	60	0.080	R	3.7	19	5.5	Y	2	Spratt,C.E	I	
12.101	815906	4.9	M	100						0.050	B	7		N	3	Spratt,C.E	J		
12.108	815907	4.9	B	100, 4A	10		7	1.50	300	0.050	B	10	5.5C	Y	1	Jeffrey,J			
12.1354	815908	4.3	M	4A	6		6	6.00	60	0.05	B	7	6.0	Y	2	Stapleton,J	K		
12.229	815909	4.7	M	4A	22		7	1.75	295	0.05	B	10	6.5	Y	2	Cook,A.J			
12.361	815910	4.6	M	4A	10		6			0.035	B	7	4	Y	1	Fabre,R	L		
12.368	815911	4.6	M	4A	10		6			0.035	B	7	4	Y	1	Watanabe,H			
12.37	815912	4.0	S	4A			8			0.08	B	11	3.0	N	1	Watanabe,A			
12.38	815913	4.6	B	4A	2.7		7	1.1	60	0.05	B	7	4.0T	N	1	Momose,M			
12.385	815914	4.6	M	4A	3.2		8	2	60	0.08	B	11	5	N	1	Kanai,K			
12.385	815915	5.2	S	4A	3.0		9	0.14	56	0.15	N	6	32	4.0T	N	3	Mitsuma,S	M	
12.386	815916	4.2	M	100	6		7	0.6	60	0.030	B	8	5.0C	Y	1	Wakatsuki,M			
12.389	815917	4.0		100							Y	5.0C		Y	1	Kato,T			
12.39	815918	4.7	M	4A				0.6		0.05	B	7	5.0	Y	2	Kato,T			
12.394	815919				4		7	0.6	60	0.10	N	10	55	5.0C	Y	2	Suzuki,K		
12.396	815920	4.5	B	4A						0.35	B	7			Y	2	Kato,T		
12.399	815921	4.6	B	4A	3.5		7	2.8		0.070	B	10	5.0	Y	2	Okada,M			
12.40278	815922	4.8	B	4A	5		7	0.42	60	0.25	N	8	80	5	Y	2	Nakamura,Y		
12.403	815923	4.2	M	4A	4		7	1.5		0.1	N	10	40	5.0	Y	2	Okumura,S		
12.41	815924	5.1	M	4A	4		8	1.5	60	0.05	B	7	4.3	Y	2	Ichikawa,K	N		
12.41	815925	4.7	M	SAO	8		7	1.2	65	0.06	R	12	22	4.0	Y	1	Riraga,M		
12.41	815926	4.5	S	100	5		7			0.07	B	10	4.0C	Y	1	Nakamura,A			
12.412	815927	3.9	S	100	7		6	2.5	75	0.07	B	10	5.5	Y	1	Yasuki,M			
12.42	815928	4.5	S	4A						0.08			4.0T	N	1	Kobayashi,J			
12.438	815929	5.0	B	4A	7.9		7	0.5	60	0.08	R	12.5	40	5.5C	Y	1	Lovejoy,T	O	
12.61	815930	5.5	B	AAVSO						0.20	R					Feisheng,J			
12.63	815931	4.8	B	4A	3.5		7	0.2		0.045	B	7	4.0T	Y	1	Churyumov,K			
12.64	815932	4.7	B	AAVSO						0.11	R					Spell,J	P		
12.69	815933	3.3		DCS 7			6				Y	3.5C		N	2	Churyumov,K			
12.705	815934	4.5	B	100			8	0.2		0.050	B	10		Y	1	Kroon,B	Q		
12.722	815935	4.4	M	4A	7		7	0.7	56	0.07	B	20	5.5	Y	1	Pfitzner,E			
12.726	815936	4.4	B	4A	5.5		8	0.5	65	0.063	B	9	4.5C	Y	1	Tanti,T	R		
12.7270	815937	4.7	B	AAVSO			3			0.05	B	7	6.0	Y	1	Kammerer,A	S		
12.729	815938	5.5	B		6.5		5	0.2		0.200	N	7.2	36	3.5C	Y	1	Sicoli,P		
12.729	815939	4.8		4A	5		7			0.050	B	10	4.0	Y	1	Lipski,P			
12.736	815940			4A	6		7	0.67	55	0.114	N	7.9	26	4.5C	N	1	Marekfa,G	T	
12.736	815941	5.1	M	124	4.7		7			0.114	N	8	36	5.5	N	1	Bernardis,A	U	
12.740	815942	4.7	M	4A	5		8	0.4	51	0.05	B		10	5.0Z	Y	8	Pennelli,G		
12.74	815943	4.9	B	AA	7		7	0.5	54	0.080	B	20	5.0	N	1	Melandri,F	V		
12.740	815944	4.5	B	4A	15		9	3	85	0.06	R	15	5.5	Y	1	Schmeer,P	W		
12.740	815945								60	0.080	B	20	6.2		2	Ward,A	X		
12.740	815946	4.8	M	4A			7	0.7	60	0.089	R	5.5	18	5.2	N	1	Zanotta,M.V	Y	
12.743	815947	4.5	S	4A	2.0		6	0.1	70	0.08	B	20	3.0	N	2	Ventura,F	Z		
12.745	815948	4.6	B	4A	15		8	2	85	0.050	B	10	5.5	Y	1	Storey,D	a		
12.746	815949	4.8	B	4A	4.5		7	0.38	55	0.330	N	4.5	59	6.0	Y	1	Ward,A	b	
12.750	815950	5.0	M	100	7		8	0.65	45	0.13	N	5.5	36	5	C	Y	1	Castino,R	
12.75	815951	4.0	B	100			8			0.05	B		10	3.0	Y	1	Menichetti,R		
12.7500	815952	5.3	B	4A	5		7	0.52	60	0.05	B		10	5.5CM	Y	2	Bottger,B		
12.75	815953	5.2	B	DCS 8			6	1.0		0.080	B		15	4	MT	N	1	Franciosi,C	
12.750	815954	4.3	S	4A	7		7		59	0.15	B	25	6.0	Y	4	Keijmel,P.C			
12.750	815955	4.7	B	4A	6		7	1.3	62	0.05	B	10	5.5Z	Y	1	Parisio,R			
12.753	815956			4A			6	0.08		0.076	N	9.2	140		Y	1	Vanin,G		
12.753	815957	4.8	B	4A	10		7	0.5	60	0.060	B		10	3.0MT	Y	1	Li Causi,G	c	
12.763	815958	4.4	S	4A	9		8	0.53	54	0.05	B		10	4.7	Y	1	Moriya,M	d	
12.764	815959	4.9	B	4A	5	3.5	7	0.10	77	0.080	B		20	3.5C	Y	1	Hurst,G.M		
12.765	815960	4.0	S	100	6.0		6	3.80	60	0.05	B	7	5.9Z	Y	6	Dionisi,M	e		
12.767	815961	4.6	M	4A	2		8			0.06	R	5.7	20	4.5CM	Y	3	Haver,R	f	
12.770	815962	4.6	M	100	7		7	0.65	45	0.05	B		10	5	C	Y	1	Cardiel,N	g
12.771	815963	4.6	B	4A	8		8	1.0		0.06	R	11.7	25		C	N	4	Menichetti,R	
12.774	815964	4.3	S	4A	6.6		9	1	54	0.08	B	15	4.7	Y	1	Gallego,J	h		
12.79	815965	4.5						0.5	60	0.034	B		9			2	Hurst,G.M		
12.95	815966	4.6	B	AA	9		7			0.035	B		7				Pereira,A	i	
12.95	815967	4.7	B	AA	8		7			0.050	B		7				Green,D.W.E	j	
12.95	815968	4.4	M	AA	9		7			0.035	B		7				Green,D.W.E	j	
12.95	815969	4.5	M	AA	8		7			0.050	B		7				Green,D.W.E	j	
12.95	815970																		

NOTE A (PA value may have been incorrectly determined. Ed.)

NOTE B Noticed tail.

NOTE C Comet is in zodiacal light.

NOTE D Comet in zodiacal light.

NOTE E Dust tail.

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NOTE J Wide dust tail, also plasma tail.  
 NOTE K Clear tail. (PA approximate and may have been measured incorrectly. Ed.)  
 NOTE L (PA value appears to be measured incorrectly. Ed.)  
 NOTE M 7.2.  
 NOTE N PA = E.  
 NOTE O Tail length = short.  
 NOTE P Comet low above horizon, aurora.  
 NOTE Q Tail length determined in 15x80 binoculars: 1.4 deg.  
 NOTE R Seeing excellent, transparency good. Low Wind. Type I tail 0.7 deg. at PA 56, type II tail 0.6 deg. at PA 70.  
 NOTE S Tail length is lower limit, PA is approximate.  
 NOTE T (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE U Tail length uncertain.  
 NOTE V See the tail.  
 NOTE W Omicron Aqr: 4.7 mag., 32 Aqr: 5.3 mag.  
 NOTE X Positive blue.  
 NOTE Y Coma extension PA 98.  
 NOTE Z Tail length (I) 0.7 deg.  
 NOTE a Small coma estimated from comparing with Jupiter's disk. Note that the sky was slightly in twilight and is the cause for small diameter being estimated. Seeing IV. Transparency = very good. Sky still slightly light.  
 NOTE b Faint blue.  
 NOTE c Comet was low above the horizon.  
 NOTE d Seeing 3/5.  
 NOTE e Coma diameter accuracy +/-0.6. Tail length accuracy +/-0.01.  
 NOTE f Tail fan-shaped.  
 NOTE g Moon 2 days.  
 NOTE h Tail longer than 1 deg. ml with binoc., 4.4.  
 NOTE i (Observer gave limit as 8.6. Ed.)  
 NOTE j Coma diameter approximate.  
 NOTE k Coma diameter and tail length approximate.  
 NOTE l Perfectly stellar nuc., 9.2 mag.  
 NOTE m A 15" nuc. of mag. 8.5.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
12.009	830784		0.050	B		10	25	6.0		Williams,D.J	A
12.010	830785		0.108	N	4	24	30	5.0	1	Franch,J	B
12.031	830786		0.203	N	6	32	16	6.5	1	Troiani,D.M	C
12.045	830787		0.152	N	4.5	21	19	6.5	1	Troiani,D.M	D
12.141	830788	3	0.050	B		7	15	6.0	2	Cook,A.J	
12.705	830789	0.02	0.360	R	14.7	240	50	5.0	3	Sarocchi,D	
12.719	830790	0.04	0.37	R	14.3	140	30	4.8	2	Falorni,M	
12.753	830791	0.4	0.076	N	9.2	35,140	1		1	Li Causi,G	E
12.757	830792	1	0.13	N	5.5	36	19	5	1	Menichetti,R	F
12.767	830793	1.2	0.06	R	5.7	20	20	4.5	3	Cardiel,N	
12.767	830794	1.4	0.08	B		15	30	4.7	1	Hurst,G.M	G
12.771	830795		0.060	R	11.7	25			4	Gallego,J	H
12.931	830796	0.01	0.23	R	12	122,250,600	1		1	O'Meara,S.J	I

NOTE A Halley was readily visible using the 10x50 binoculars. Also, for the first time I could see the tail plainly with the binoculars.  
 NOTE B The comet, now at 4.1 magnitude, displayed a quite prominent dust tail extending in PA 62 for fully 0.5 deg. The coma had greatly shrunk in size to about 8.6". The nucleus was not quite starlike and about 5.5 in magnitude. A remnant of the gas tail was seen extending from the nucleus to the northeast, totally immersed in the dust tail at PA 62. Scale = 10.0"/mm.  
 NOTE C Seeing (1-3): 3. Sky darkness (1-5): 5. Gas tail at PA 45 deg. Streamer at PA 50 deg. Fan at PA 50 deg. DC = 6.  
 NOTE D Seeing (1-3): 3. Sky darkness (1-5): 5. Tail was 2 deg. long, with a thin gas tail. [sic]  
 NOTE E Comet was very low above the horizon and there was light pollution. The north side of the tail was brighter than the other part. Yellow Wratten no. 4 filter used.  
 NOTE F Tail at PA 45 deg. Vertex distance = 2.5', semi latus rectum Pl = 2.5', P2 = 2.5'.  
 NOTE G Very bright tail apparently forking into two components about 40' from coma, PA 54 and PA 61. Bright condensation offset in coma PA 250 deg.  
 NOTE H Field 1 deg. 32'. Stellar nucleus. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)  
 NOTE I (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.003	850782	1.970	5.5	0.355	1.0 x 0.7	8.00	Kodak 2415		Y	O	16/P	1	Crist,M	A
12.008	850783	4.180	16.5	0.254	0.5 x 0.3	10.00	Kodak 2415		Y	O	22/S	1	Lund,L	B
12.011	850784	0.305	1.5	0.203	6.8 x 4.5	2.50	Kodak 2415		Y	X	255/P	1	Sabia,J.D	C
12.013	850785	1.970	5.5	0.355	1.0 x 0.7	16.00	Kodak 2415		Y	O	17/P	1	Crist,M	A
12.026	850786	4.180	16.5	0.254	0.5 x 0.3	2.50	Kodak 2415		Y	O	24/S	1	Lund,L	B
12.026	850787	0.100	2.8		20.4 x13.7	5.00	Kodak VR1000	1000/	N	T	9/C	1	Priester,D.C	
12.028	850788	1.000	5	0.203	2.1 x 1.4	20.00	Kodak Tri-X	400/27	N	X	042/P	1	Bro,M	D
12.036	850789	1.530	6.0	0.254	1.3 x 0.9	2.83	Kodak 2415		Y	O	26/S	1	Lund,L	
12.041	850790	1.000	5	0.203	2.1 x 1.4	10.00	Kodak Tri-X	400/27	N	X	043/P	1	Bro,M	D
12.044	850791	0.200	3.5		10.3 x 6.9	5.50	Fujichrome	400/	N	X	394/S	2	Woidyla,B	E
12.049	850792	0.200	3.5		10.3 x 6.9	5.50	Fujichrome	400/	N	X	390/S	2	Woidyla,B	E
12.054	850793	0.200	3.5		10.3 x 6.9	5.00	Fujichrome	400/	N	X	397/S	2	Woidyla,B	E
12.054	850794	2.000	10	0.200	1.0 x 0.7	5.50	3M 1000	1000/	N	X	422/S	2	Woidyla,B	E
12.059	850795	0.200	3.5		10.3 x 6.9	4.00	Fujichrome	400/	N	X	398/S	2	Woidyla,B	E
12.064	850796	0.200	3.5		10.3 x 6.9	3.00	Fujichrome	400/	N	X	392/S	2	Woidyla,B	E
12.073	850797	0.200	3.5		10.3 x 6.9	3.00	Fujichrome	400/	N	X	391/S	2	Woidyla,B	E
12.082	850798	0.400	6.3		5.2 x 3.4	1.00	Kodak VR1000	1000/	N		18/N	1	Persell,D	
12.085	850799	0.400	6.3		5.2 x 3.4	2.00	Kodak VR1000	1000/	N		19/N	1	Persell,D	
12.087	850800	0.400	6.3		5.2 x 3.4	3.00	Kodak VR1000	1000/	N		20/N	1	Persell,D	
12.093	850801	0.400	6.3		5.2 x 3.4	1.00	Kodak VR1000	1000/	N		22/N	1	Persell,D	
12.094	850802	0.400	6.3		5.2 x 3.4	2.00	Kodak VR1000	1000/	N		23/N	1	Persell,D	
12.095	850803	0.040	1.7		48.5 x33.4	1.00	Ektachrome	400/	N	O	18/N	5	Edberg,S.J	
12.096	850804	2.000	10	0.203	1.0 x 0.7	1.00	Kodak VR1000	1000/	N		11/N	1	Persell,D	
12.096	850805	0.400	6.3		5.2 x 3.4	1.00	Kodak VR1000	1000/	N		24/N	1	Persell,D	
12.097	850806	0.400	6.3		5.2 x 3.4	1.00	Kodak VR1000	1000/	N		25/N	1	Persell,D	
12.098	850807	0.040	1.7		48.5 x33.4	5.00	Ektachrome	400/	N	O	19/N	1	Edberg,S.J	
12.098	850808	0.610	4	0.152	3.4 x 2.3	3.00	Kodak Tri-X		N	X	3/N	1	Lazerson,H	F
12.099	850809	0.135	2.8		15.2 x10.2	5.00	Ektachrome	400/	N		7/S		Pryal,J	
12.103	850810	0.305	4		6.8 x 4.5	30.00	Kodak IIA-F		N		4/P	1	Mitchell,R.C	
12.103	850811	0.30	4	0.075	6.9 x 4.6	30.00	IIA-F		N	X	4/P	1	Mitchell,R.C	
12.104	850812	1.000	5	0.200	2.1 x 1.4	10.00	Kodak VR1000	1000/	N	O	1/P	2	Ashley,J.B	G
12.113	850813	1.000	5	0.200	2.1 x 1.4	5.00	Kodak VR1000	1000/	N	O	2/P	2	Ashley,J.B	G
12.120	850814	1.000	5	0.200	2.1 x 1.4	5.00	Kodak VR1000	1000/	N	O	3/P	2	Ashley,J.B	G
12.125	850815	0.050	2		39.6 x27.0	1.00	3M 1000	1000/	N	O	8/N	5	Edberg,S.J	
12.126	850816	0.300	1.5	0.200	6.9 x 4.6	4.00	Kodak 2415		Y	S	9/P	2	Yen,B	H
12.143	850817	1.000	5	0.203	2.1 x 1.4	10.00	Kodak Tri-X	400/27	N	O	041/P	1	Bro,M	I
12.381	850818	1.760	5.8	0.303	1.2 x 0.8	8.00	Kodak 2415		Y		1/P	1	Niiijima,T	J

DATE: 12 JAN 1986

DATE: 12 JAN 1986

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.383	850819	0.850	3.4	0.25	2.4 x 1.6	10.00	Kodak 6415		Y	C	10/P	1	Kojima,T	
12.724	850820	0.180	2.8		11.4 x 7.6	5.00	Kodak 2415		Y	O	3/P	4	Uberti,M	K
12.734	850821	1.000	5	0.200	2.1 x 1.4	15.00	3M 1000	1000/	N	X	7/S	1	Vanin,G	L
12.736	850822	1.000	5	0.20	2.1 x 1.4	20.00	Fujichrome	400/27	N	O	20/T	1	Mikuz,H	M
12.743	850823	0.500	5.6		4.1 x 2.7	4.75	Kodak Tri-X	400/	N	X	3/P	1	Ward,A	N
12.800	850824	0.135	2.8		15.2 x 10.2	25.00	Kodak 2415		Y	S	2/P		Izquierdo,J	O
12.998	850825	0.100	2.8		20.4 x 13.7	5.00	Kodak VR1000	1000/	N	T	14/C	1	Priester,D.C	P

NOTE A City lights interfered with the observation. Auxiliary lens used. Original instrument characteristics are FL = 3.720, f/10.5.

NOTE B Auxiliary lens used. Original instrument characteristics are FL = 1.530, f/6.

NOTE C Photograph made by J. Kamichitis and J.D. Sabia.

NOTE D Auxiliary lens used. Original instrument characteristics are FL = 2.000, f/10. (The guiding method indicated and the commercial guiding head used are contradictory; this off-axis guider does not permit guiding on the target. Observer's image identifier is followed by suffix a. Ed.)

NOTE E (Observer's image identifier is preceded by prefix l. Ed.)

NOTE F "Push" processed to 800 ASA.

NOTE G Auxiliary lens used. Original instrument characteristics are FL = 2.000, f/10. Photographs taken just at end of evening twilight. Very thin crescent moon present. Some wind gusts during exposures.

NOTE H Start time approximate. Instrument is Schmidt camera.

NOTE I Auxiliary lens used. Original instrument characteristics are FL = 2.000, f/10. (Observer's image identifier is followed by suffix a. Ed.)

NOTE J (Observer's image identifier is 860112-1. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

NOTE K Instrument is Wright-Schmidt. Large format (120 size) film used.

NOTE L Zodiacal light interfered with the observation.

NOTE M Auxiliary lens used. Original instrument characteristics are FL = 2.000, f/10, a C8. Image copied 2x on technical film.

NOTE N UV filter used.

NOTE O Too much twilight and strong zodiacal light. These probably affect the observation.

NOTE P Auxiliary Soligor lens used. Original instrument characteristics are FL = 0.050 m, f/1.4.

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.005	870119	600G-O	CL	0.135	1.9		15.00	Kodak 2415		Y	C	721/S	2	Buchanan,W.T	AB
12.016	870120	600G-O	CL	0.135	1.9		15.00	Kodak 2415		Y	C	722/S	2	Buchanan,W.T	BC
12.030	870121	600G-O	CL	0.135	1.9		22.00	Kodak 2415		Y	C	723/S	2	Buchanan,W.T	BD

NOTE A Twilight interfered with the observation. Focused at R. Note faint tail spectrum. (Observer's image identifier is E-117-21. Ed.)

NOTE B Zodiacal light interfered with the observation. Halley barely visible to naked eye. All spectra lie along a meridian from south to north with wavelength increasing.

NOTE C Focused at infinity. Note faint tail spectrum. (Observer's image identifier is E-117-22. Ed.)

NOTE D Focused between R and infinity. Note faint tail spectrum. Airplane crossed frame. (Observer's image identifier is E-117-23. Ed.)

DATE: 13 JAN 1986

DATE: 13 JAN 1986

## 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	
13.014	815979			4A	29	8			0.200	SC	10	78	5.3	N	1	Saraceno,J	A	
13.014	815980	4.9	B	4A					0.050	B		7				Saraceno,J		
13.017	815981	5.5	B	4A	30 15	6	1.5	80	0.152	R	5	24	4.7	N	1	Fox,J.H	B	
13.03	815982	4.7	B	4A			1		0.080	B		20		Y		Kronk,G	C	
13.03	815983	5.4	B	4A	5.6	8			0.335	N	4.5	56		Y		Kronk,G	D	
13.052	815984	5.1	S	4A	7.5	6	0.38	82	0.080	B		11	4.5C	Y	1	Bailey,G	E	
13.07	815985	4.4	V	4A			1.5	60		EY		8	6.5	Y	1	Keen,R		
13.08	815986	4.5		4A	5	8	2.5	60	0.040	B		8	6.5	Y	1	Keen,R	F	
13.10	815987	4.1		4A						EY			5.0	Y	17	Morris,C.S		
13.108	815988	4.9	B	100, 4A	10	7	1.50	300	0.050	B		10	5.5C	Y	1	Stapleton,J	G	
13.11	815989	4.1	M	4A	5.5	8	6.0	60	0.080	B		20	5.0	Y	17	Morris,C.S		
13.135	815990	4.9	M	4A		5			0.050	B		7	4.7	Y	1	Robertson,T		
13.1354	815991	4.0	M	4A	6	6	6.15	62	0.05	B		7	6.0	Y	2	Cook,A.J		
13.38	815992	4.5	B	4A	2.0	8	0.7	65	0.05	B		7	3.0T	N	1	Kasai,K		
13.38	815993	4.5	M	4A	3.4	8	1.5	60	0.08	B		11	4	M	N	1	Mitsuna,S	H
13.39	815994	4.8	S	AAVSO	4	7	0.67	60	0.13	N	6.3	24	5.0M	Y	1	Hayashi,A		
13.39	815995	5	B	M	3	5	0.2		0.12	M		40				Enyazyuk,N		
13.396	815996	4.5	M	100	3	8			0.030	B		8	3.5CM	Y	1	Kato,T	I	
13.402	815997	4.0	M	4A	12	6	1.4		0.05	B		7	3.5	Y	4	Ichikawa,K		
13.41	815998	4.8	M		4	7	1.2	60	0.05	B		7	5	Y	1	Hiraga,M		
13.410	815999	3.9	S	100	6.5	6	4	75	0.07	B		10	5.5	Y	1	Kobayashi,J		
13.41	816000	4.3	S	4A					0.08				4.0T	N	1	Lovejoy,T	J	
13.41	816001			SAO	8	7	0.33	85	0.15	N	6	23	4	Y	2	Tanikawa,M	K	
13.41	816002	4.9	B	SAO					0.05	B		7	4	Y	2	Tanikawa,M		
13.433	816003	4.5	B	100					0.05	B		7	4.0CT	Y	1	Hayashi,H		
13.433	816004				8	6	1		0.12	N	6	40				Hayashi,H		
13.438	816005	5.0	B	4A	8.5	7	0.55	60	0.08	R	12.5	40	6.0	Y	1	Feisheng,J		
13.55	816006	5.1	B	AAVSO					0.11	R						Churyumov,K		
13.59	816007	5.5	B	AAVSO					0.20	R						Churyumov,K		
13.688	816008	5.0							0.050	B		10		TM	1	Kauschke,A	L	
13.69	816009	3.5		DCS 8		6				EY			3.5C	N	3	Kroon,B	M	
13.722	816010	4.7	M	4A					0.030	B		8	5.0M	Y	1	Villa,M		
13.729	816011	4.8	B	4A	3.5	7	0.38	55	0.330	N	4.5	59	5.8	Y	1	Castino,R	N	
13.7291	816012	5.3	B	4A	5	7	0.95	70	0.05	B		10	5.7CMT	Y	2	Franciosi,C	O	
13.731	816013			4A			1.0		0.030	B		8	5.0M	Y	1	Villa,M		
13.736	816014	4.3	S	4A	7	7	1.05	57	0.080	B		20	5.9	Y	1	Meozzi,D		
13.736	816015	4.7	S	4A	8	6	0.5	75	0.050	B		7	4.5CM	N	1	Piccinini,M		
13.739	816016	4.8	B	4A	3.5	7	0.38	55	0.050	B		16	5.8	Y	1	Castino,R	N	
13.743	816017	4.7	M	4A		8			0.03	B		8	5.0MZ	Y	1	Melandri,F		
13.743	816018	4.8	B	4A	6	7	1.7	61	0.05	B		10	5.0M	Y	1	Vanin,G		
13.748	816019	4.1	S	4A	8	7	1.95	63	0.050	B		7	5.9	Y	1	Meozzi,D		
13.750	816020	4.6	M	100	7	7	0.55	40	0.05	B		10	5	MC	Y	1	Menicchetti,R	
13.750	816021	4.1	S	100	4.0	7	2.50	60	0.08	B		15	5.5M	Y	3	Haver,R		
13.750	816022	3.8	S	100				60		EY			5.5M	Y	3	Haver,R	P	
13.755	816023	4.7	M	4A	6	7	0.9		0.089	R	5.5	18	5.2	N	1	Ventura,F	Q	
13.760	816024	4.6	B	4A	5				0.05	B		8	5	Y	1	Cabo,M	R	
13.760	816025	4.4	M	4A	10	7	1.5	70	0.05	B		20	5.5	Y	4	Cardiel,N	S	
13.760	816026	3.9	S	100	4.5	6	2.87	60	0.05	B		7	5.5M	Y	3	Haver,R		
13.760	816027	4.7	M	4A	30	6			0.050	B		10	3.0MC	Y	1	Lozano,L	T	
13.764	816028	5.1	M	4A	5.5	5	0.25	60	0.07	B		16	4.5CM	N	1	Taylor,M.D	U	
13.771	816029	4.5	M	4A	8	8	1	70	0.06	R	5.7	20	5.5M	Y	4	Cardiel,N	S	
13.773	816030	4.6	M	4A	3.9	8	0.67	40	0.153	N	8.5	65		Y	2	Torres,E	V	
13.781	816031	4.9	B	4A	10	6.5	7	0.47	74	0.080	B	20	5.0M	Y	2	Dionisi,M	W	
13.79	816032	4.8					0.6	55	0.034	B		9			2	Pereira,A	X	
13.792	816033	4.3	B	4A	10	8	1.33		0.05	B		20		Y	2	Gallejo,J	N	
13.938	816034	4.9	M	AAVSO					0.050	B		10				O'Meara,S.J	Y	
13.94	816035	4.4	M	AA	7.5	7			0.080	B		20				Green,D.W.E	Z	
13.94	816036	4.5	M	AA	7.5	7			0.050	B		7				Green,D.W.E	Z	
13.94	816037	4.5	S	AA	7.5	7			0.080	B		20				Green,D.W.E	Z	
13.94	816038	4.6	S	AA	7.5	7			0.050	B		7				Green,D.W.E	Z	
13.972	816039	4.9	S	4A	4.0	7	0.50	70	0.152	N	5.5	69	4.5	Y	1	Hudak,D.M	a	
13.983	816040	4.8	S	4A	6	7	0.80	50	0.035	B		7	5.4C	Y	3	Morrison,W	b	

NOTE A The observations of Nov. 28 and Dec. 4 used the stars marked "12.9" and "12.3" on the V Hydras d chart. These values appear to be about one magnitude too faint.

NOTE B Twilight.

NOTE C Tail length approximate.

NOTE D Inner coma diameter 3.8 arc min. Tail PA 49 deg. to 67 deg.

NOTE E Nice sight with moon and Jupiter.

NOTE F Modified Sidgwick method used.

NOTE G Clear tail. (PA approximate and may have been measured incorrectly. Ed.)

NOTE H 7.2.

NOTE I Diffuse cloud.

NOTE J Tail length = short.

NOTE K m2 (observer's symbol believed to mean "approximately equal to", Ed.) 9.

NOTE L Tail length = y.

NOTE M Tail length determined in 15x80 binoculars: 2.5 deg.

NOTE N Moon.

NOTE O No nucleus.

NOTE P Tail length 0.3 deg.-0.5 deg.

NOTE Q Tail length (I) 0.9 deg., PA 52-60 deg. The northern edge of the tail appeared to be particularly sharp. A dark lane is suspected in it.

NOTE R See draw. D.4. Moon 3 days.

NOTE S Moon 3 days.

NOTE T Tail not visible.

NOTE U Haze. Seeing Antoniadi III. Tail to 0.35 deg.?

NOTE V PA 35-40. (Observer gave limit as 10.0. Ed.)

NOTE W Coma diameter accuracy +/-0.6. Tail length accuracy +/-0.01. PA by drawing; PA 74 at distance 0 deg., PA 64 at distance 0.3 deg., PA 57 at distance 0.59 deg.

(Observer gave limit as 8.5. Ed.)

NOTE X Cambridge.

NOTE Y Coma diameter approximate.

NOTE a Tail length and PA approximate.

NOTE b Moon 17 deg. away.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
13.007	830797	0.6	0.203	R	13	85,150	10	4.7	1	Fox,J.H	A
13.010	830798		0.203	SC	10	81			1	Lohvinenko,T.W	B



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DATE: 13 JAN 1986

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
13.019	830799		0.203	SC	10	169			1	Lohvinenko,T.W	C
13.032	830800	0.32	0.203	N	6	61,116	10	5	1	Williams,J	D
13.104	830801	3	0.050	B					2	Cook,A.J	
13.729	830802	0.05	0.37	R	14.3	140	10	6.0	2	Falorni,M	
13.733	830803	0.07	0.125	N	5.8	28, 40, 60	30	5.0	2	Riccabone,G	E
13.760	830804		0.050	B					1	Cano,M	F
13.767	830805	2.4	0.05	B		20	10	5.5	4	Cardiel,N	G
13.776	830806	0.7	0.153	N	8.5	65	45		2	Cifuentes,E	H
13.778	830807	0.59	0.080	B		20	50	5.0	2	Dionisi,M	I
13.792	830808		0.050	B		20			2	Gallego,J	J
13.993	830809	0.15	N	8		64,160	50	5.5	1	Robotham,R	K

NOTE A Fan-shaped, brighter inner coma extending W from nucleus. Streaking in tail seen only at 85x. Tear-shaped coma very apparent at both powers.

NOTE B The comet is seen with a nuclear magnitude of 6.6 (check stars: HR 69, HR 72) and an integrated magnitude of 4.8 (check stars: HR 707, HR 739, HR 740). (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C A closer look at the comet gives a sharp blue spike coming directly from the 'nucleus' of the comet. The PA of this spike is 67 and the coma size is 294.07" and seems not to of change much even with the moon. [sic] The nuclear diameter is 81.21". (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D The central condensation seemed much brighter than usual. The coma was about 5' or 6' across. The tail was an additional 20' or so long. The tail is brighter but still relatively faint. I don't see any other detail but the central condensation appears "lumpy". Perhaps "not quite round" is more accurate. Tail at PA 90. Moonlight, twilight, city lights interfered with the observation.

NOTE E Luminous nebular region at PA 80. Dark region at PA 85. Nucleus diameter 77 arc sec. Magnifications of 80 and 144 also used. Two drawings included. Moonlight and intense city lights interfered with the observation. (Translated by INW staff. Ed.)

NOTE F Field 9 deg. Limiting mag. through binoc.: 7.5. Crescent moon, 3 days; cirrus. (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)

NOTE G Tail long: 1 deg. 30' at PA 70.

NOTE H Gas tail long and toward Ne [sic]. Dust tail less visible (very small in comparison with gas tail) and toward ENe. (Observer gave limit as 10.0. Translated by INW staff. Ed.)

NOTE I Moonlight interfered with the observation. Cone at PA 70 (vertex) delimits coma on the major axis and it's vertex is 7.7' distant by nucleus. Stream at PA 64 (vertex) seems to be lightly more bright than the coma. [sic] It has a total length of 13.2' by nucleus.

NOTE J Field 3 deg. Ion tail easily visible. High DC 4 days moon [sic]. Coma seems a "bullet head". (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

NOTE K Tail well seen. Nucleus was difficult to see if visible at all.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
13.002	850826	0.100	2.8		20.4 x13.7	2.50	Kodak VR1000	1000/	N	T	15/C	1	Priester,D.C	A
13.019	850827	0.305	1.5	0.203	6.8 x 4.5	1.50	Kodak 2415		Y	X	259/P	1	Sabia,J.D	B
13.071	850828	0.305	2.5	0.122	6.8 x 4.5	15.00	Kodak 2415		Y	S	181/P	2	Minton,R.B	C
13.087	850829	0.205	3.8		10.0 x 6.7	15.00	Kodak VR 200	200/	N	T	22/P	1	Cunningham,J	D
13.090	850830	0.400	6.3		5.2 x 3.4	5.00	Kodak VR1000	1000/	N		31/N	1	Persell,D	
13.094	850831	0.400	6.3		5.2 x 3.4	4.00	Kodak VR1000	1000/	N		32/N	1	Persell,D	
13.098	850832	0.400	6.3		5.2 x 3.4	3.00	Kodak VR1000	1000/	N		33/N	1	Persell,D	
13.100	850833	0.400	6.3		5.2 x 3.4	2.00	Kodak VR1000	1000/	N		34/N	1	Persell,D	
13.101	850834	1.829	4.5	0.406	1.1 x 0.8	5.00	Kodak VR 200	200/	N	T	24/P	1	Cunningham,J	
13.102	850835	0.400	6.3		5.2 x 3.4	1.00	Kodak VR1000	1000/	N		35/N	1	Persell,D	
13.105	850836	0.400	6.3		5.2 x 3.4	5.00	Kodak VR1000	1000/	N		36/N	1	Persell,D	
13.106	850837	0.610	4	0.152	3.4 x 2.3	3.00	Kodak Tri-X		N	X	4/N	1	Lazerson,E	E
13.109	850838	0.400	6.3		5.2 x 3.4	2.50	Kodak VR1000	1000/	N		37/N	1	Persell,D	
13.115	850839	0.400	6.3		5.2 x 3.4	2.50	Kodak VR1000	1000/	N		2/N	1	Persell,D	
13.117	850840	0.400	6.3		5.2 x 3.4	2.00	Kodak VR	1000/	N	X	3/N	1	Persell,D	
13.121	850841	0.400	6.3		5.2 x 3.4	2.50	Kodak VR	1000/	N	X	4/N	1	Persell,D	
13.123	850842	0.400	6.3		5.2 x 3.4	1.00	Kodak VR	1000/	N	X	5/N	1	Persell,D	
13.126	850843	0.300	1.5	0.200	6.9 x 4.6	4.00	Kodak 2415		Y	S	10/P	2	Yen,B	F
13.387	850844	1.760	5.8	0.303	1.2 x 0.8	8.00	Kodak 2415		Y		2/P	1	Nijima,T	G
13.726	850845	1.000	5	0.200	2.1 x 1.4	13.00	3M 1000	1000/	N	X	8/S	1	Vanin,G	H
13.773	850846	2.10	3.5	0.60	1.0 x 0.7	15.00	Kodak 2415		Y		801/P	4	Soc. Astro. de France I	I

NOTE A Auxiliary Soligor lens used. Original instrument characteristics are FL = 0.050 m, f/1.4.

NOTE B A cloud is encroaching on the comet and a fault on the negative is superimposed on the comet's coma. Photograph made by J. Kamichitis and J.D. Sabia.

NOTE C (Print submitted by observer is a composite of three contiguous 5 minute exposures. Ed.) Instrument is Aero-Ektar aerial camera lens.

NOTE D Meteor.

NOTE E Tail split. "Push" processed to 800 ASA.

NOTE F Start time approximate. (Observer's image identifier is 5. Ed.) Instrument is Schmidt camera.

NOTE G (Observer's image identifier is 860113-2. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

NOTE H Moonlight and twilight interfered with the observation.

NOTE I Exposures of 2 seconds and 15 minutes together, made by offsetting the telescope. Photograph made by R. Bibault and J. Sylvain.

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	ACN#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
13.010	870122	600G-O	CL	0.135	1.9		20.00	Kodak 2481IR		N	C	800/S	2	Buchanan,W.T	AB
13.027	870123	600G-O	CL	0.135	1.9		26.00	Kodak 2481IR		N	C	801/S	2	Buchanan,W.T	BC
13.986	870124	42P-O	CL	0.400	6.3		10.00	Kodak 2415		N	C	20/P	1	Grieser,D	D
13.994	870125	42P-O	CL	0.400	6.3		10.00	Kodak 2415		N	C	21/P	1	Grieser,D	D

NOTE A Frame had #12 Wratten filter; showed no spectral lines on Halley but showed infrared on star to the west. (Observer's image identifier is E-118-00. Ed.)

NOTE B Zodiacal light interfered with the observation. Frame set for 6700-10500 Angstroms first order and 3350-5250 Angstroms second order.

NOTE C Frame showed second order of complex at 3883 Angstroms, same field as frame 800. (Observer's image identifier is E-118-01. Ed.)

NOTE D Prism glass type uncertain. Film emulsion at ambient temperature of 0 C.

DATE: 14 JAN 1986

DATE: 14 JAN 1986

## 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	
14.024	816041			4A	17.2	6			0.200	SC	10	78	4.3	N	1	Saraceno,J	A	
14.024	816042	5.3	B	4A					0.050	B		7				Saraceno,J		
14.030	816043	4.7	B	4A	4	1	0.4		0.05	B		7	4.5	Y	2	House,R.R		
14.06	816044	4.5	V	4A						EY			5.0	Y	1	Keen,R		
14.06	816045	4.5		4A	8	8	2.8	60	0.040	B		8	5.0	Y	1	Keen,R	B	
14.10	816046	4.0	S	4A	8	7	2	60	0.080	B		11	5.0	Y	1	Spratt,C.E	C	
14.115	816047	5.5	S	4A	6	7	0.5	285	0.203	SC	10	50	8	Y	6	Pryal,J	D	
14.375	816048	4.7	B	4A		8			0.05	B		7	4.0C	Y	1	Hasegawa,T		
14.38	816049	4.7	M	4A			1.2		0.05	B		7	5.0M	Y	1	Suzuki,K		
14.38	816050			4A	2.0	5			0.21	N	5.0	88	5.0M	Y	1	Suzuki,K	E	
14.381	816051	4.6	M	100	2				0.030	B		8	3.0CMT	N	1	Kato,T	F	
14.39	816052	4.9	S	AAVSO	3.5	7	2	65	0.13	N	6.3	24	5.0M	Y	1	Hayashi,A		
14.39	816053	4.7	M	4A	3.0	8	2	60	0.08	B		11	4.5M	Y	1	Mitsuma,S	G	
14.39	816054	4.4	B		12	7	0.83	300	0.05	B		10	4.0	N	1	Uda,K	H	
14.40	816055	4.8	B		9	6	1.3	70	0.16	N	4.8	24	5.0M	Y	1	Maeda,S		
14.41	816056	4.8	M		4	7	1.8	60	0.05	B		7	4.5	Y	2	Hiraga,M		
14.411	816057	3.9	S	100	6	6	1.5	75	0.07	B		10	3.5	Y	1	Kobayashi,J		
14.57	816058	4.7	B	AAVSO					0.11	R						Churyumov,K		
14.57	816059	4.9	B	M	7				0.05	B		7				Konstantinov,S		
14.59	816060	5.0	B	AAVSO					0.20	R						Churyumov,K		
14.64	816061	5.0	B	M	14	6			0.07	N	8	33				Yurchenko,Yu		
14.69	816062	4.5	M	4A	9	5	0.8	63	0.05	B		7	4.5	Y	3	Granalo,B.H		
14.69	816063	3.7	S	DCS 8		6	1.9		0.080	B		15	3.5CM	N	2	Kroon,B		
14.707	816064	5.1	B	4A		2			0.030	B		8	5.0MC	N	2	Richert,M		
14.710	816065			4A		4	0.2		0.080	R	6.2	20	5.0MC	N	2	Richert,M		
14.712	816066	4.4	B	100	4.0	8	2		0.050	B		7	5.5	Y	1	Lunde,R		
14.719	816067	4.8	M	100		5			0.07	B		20		Y	1	Tanti,T	I	
14.722	816068	4.3	B	4A					0.08	B		10	4	Y		Cappellari,M	J	
14.7240	816069	4.9	B	AAVSO		3			0.05	B		7	4.5	N	1	Sicoli,P		
14.7291	816070	5.3	B	4A	4	7	0.42	60	0.05	B		10	4.7CM	Y	2	Franciosi,C	K	
14.73	816071	4.8	S	DCS 7	15	8	1.0		0.050	B		10	4	MC	N	1	Aerts,L	L
14.73	816072						2.0		0.150	R	8	34	4	MC	N	1	Aerts,L	
14.73	816073	4.5	S	DCS 7	4.5	9	0.33	55	0.050	B		10	4.5M	Y	1	van Loo,F.R		
14.73	816074	4.7	B	DCS 7	5	8	1.0	55	0.115	N	8	45	4	MC	Y	1	van Munster,T	
14.73	816075	4.4	B	4A	10	7			0.050	B		7	4.5	Y	2	Merlin,J.-C		
14.736	816076	4.7	M	4A		8			0.05	B		10	5.0MZ	Y	9	Melandri,F		
14.736	816077	4.7	M	4A			1.1		0.030	B		8	5.0M	Y	7	Villa,M		
14.740	816078	4.9	M	4A	4.0	7	0.7	65	0.08	B		11	4.6M	Y	1	Fleet,R.W		
14.740	816079	5.2	S	99	5	7			0.065	B		12	4	N	1	Foulkes,M	M	
14.74	816080	4.2	S	DCS 8	6	7	0.5	75	0.080	B		15	4	CM	Y	1	Wils,P	
14.747	816081	4.6	B	4A		8			0.050	B		10	4.5	N	1	Rogers,J.H	N	
14.75	816082	4.8	S	4A					0.08	B		10	3.0			Shanklin,J.D		
14.750	816083	5.1	M	4A					0.04	B		12		N	1	Henshaw,C	O	
14.769	816084	4.5	S	4A	6.8	8	1.2		0.05	B		10	4.7	Y	1	Hurst,G.M	P	
14.781	816085			4A		5	0.25		0.07	B		10	5.0	Y	1	Deconinck,M		
14.79	816086	4.8					0.8	55	0.034	B		9			2	Pereira,A	Q	
14.969	816087	4.3	B	99	6	3	0.67	51	0.05	B		7	5.4			Laird,R		
14.97	816088	4.2	B	AAVSO	5	6	1.5	60	0.050	B		10				Bortle,J.E	R	
14.97	816089				2.8				0.317	N	6	55				Bortle,J.E	S	
14.986	816090	4.2	B	99		6	1.42	70	0.05	B		7	4.5	N	4	Benavides,A	T	

NOTE A Light pollution.

NOTE B Modified Sidgwick method used.

NOTE C DC approximate.

NOTE D Too near western horizon.

NOTE E Meter: coma diameter is P1 + P2.

NOTE F Poor condition.

NOTE G 7.7.

NOTE H (PA value may have been incorrectly determined. Ed.)

NOTE I Moon. Clouds. Low.

NOTE J Moon.

NOTE K PA approximate.

NOTE L Tail length is lower limit.

NOTE M Moon up.

NOTE N Coma small. Short tail stub suspected. Very imprecise.

NOTE O Moon, twilight.

NOTE P Curved tails. 1.2 deg. tail PA 58-52; 0.8 deg. tail PA 48-40.

NOTE Q Moonlight.

NOTE R Straight, narrow tail.

NOTE S Broad, straight tail (type II).

NOTE T The first measure is of tail II and the second is of tail I? [sic] (Translated by IHW staff. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
14.058	830810		0.445	N	4.5	72			2	Lohvinenko,T.W	A
14.748	830811	0.15	0.298	N	5	40, 65, 269	13	6.0	1	Stott,D	B
14.773	830812	1.3	0.05	B		10	35	4.7	1	Hurst,G.M	C
14.979	830813		0.080	B		20	20	4	2	Arpin,P	D

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Hood at PA 250-170. Tail at PA 62. Central condensation shows little detail only a vague hood. Tail shows some structure

near coma.

NOTE C Tail at PA 58 deg. curving to 52 deg., 1.2 deg. length. Tail at PA 48 deg. curving to 40 deg., 0.8 deg. length. Nucleus

region offset PA 230 deg. approximately.

NOTE D Comet coma not visible to the naked eye even I observed in countryside. [sic] Estimated length of tail 0.5 deg. Very

disappointing object it's reminds me Comet Kohoutek. [sic]

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
14.015	850847	0.100	2.8		20.4 x13.7	6.00	Kodak VR1000	1000/	N	T	16/C	1	Priester,D.C	A
14.052	850848	1.583	8	0.203	1.3 x 0.9	10.00	Kodak 2415		Y	S	37/P	1	Minton,R.B	B
14.073	850849	1.829	4.5	0.406	1.1 x 0.8	5.00	Kodak VR 200	200/	N	T	25/P	1	Cunningham,J	
14.100	850850	1.829	4.5	0.406	1.1 x 0.8	3.00	Fuji HR 400		N	T	0/P	1	Cunningham,J	C
14.389	850851	1.760	5.8	0.303	1.2 x 0.8	10.17	Kodak 2415		Y		3/P	1	Nijima,T	D
14.758	850852	0.600	1.7	0.355	3.4 x 2.3	23.00	Kodak 6415		N	O	001/T	1	Battipede,F	E

NOTE A Auxiliary Soligor lens used. Original instrument characteristics are FL = 0.050 m, f/1.4.

DATE: 14 JAN 1986

DATE: 14 JAN 1986

NOTE B (Print submitted by observer is a composite of two contiguous 5 min. exposures. Ed.)

NOTE C Film "push" processed from ISO 400 to 1000.

NOTE D (Observer's image identifier is 860114-2. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

NOTE E Instrument is Schmidt camera. 120 size film used.

DATE: 15 JAN 1986

DATE: 15 JAN 1986

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	
15.003	816091	4.7	S	4A	6	7	0.42	55	0.035	B		7	4.7CM	Y	3	Morrison,W		
15.003	816092	4.3	B	4A			1	60	0.035	B		7	4.5	Y	1	Stephan,C	A	
15.005	816093	4.7	S	4A		1	0.7	65	0.05	B		7	5	Y	2	House,R.R	B	
15.006	816094	4.6	B	4A					0.08	B		11	3.0	Y	1	Gorski,L	C	
15.010	816095	4.0	S	100	10.1	8	1.5	54	0.108	N	4	17	5.0	Y	1	Franch,J	D	
15.014	816096	4.9	B	99					0.080	B		20	4.8M	Y		Smith,D		
15.028	816097			4A	25	7			0.200	SC	10	78	4.2	N	1	Saraceno,J	E	
15.028	816098	4.7	B	4A					0.050	B		7				Saraceno,J		
15.375	816099	4.7	B	4A		6			0.05	B		7	3.0CM	Y	1	Hasegawa,T		
15.380	816100	3.9	M	100	2				0.030	B		8	4.0CMT	Y	1	Kato,T		
15.389	816101	3.8	M	4A, 100	3.8		0.83		0.1	N	10	83	4.0	Y	1	Ichikawa,K		
15.39	816102	3	:		5	7			0.08	B		11	3.5	Y	2	Washi,S	F	
15.40	816103	4.0	S	4A					0.08						1	Lovejoy,T	G	
15.49	816104	4.7	B	M	3	6	0.1	55	0.05	B		7				Guryanov,S		
15.58	816105	4.7	B	AAVSO					0.11	R						Churyumov,K		
15.62	816106	5.4	S	AAVSO					0.20	R						Churyumov,K		
15.694	816107	5.0	M	4A	6	3	0.2	53	0.09	M	11	56	4.5TM	Y	3	Westlund,M	H	
15.72	816108	4.8	S	DCS 7					0.050	B		10	4	MC	N	1	Aerts,L	
15.722	816109	4.4	AAVSO		4	6	3.3	70	0.080	B		11				Stomeo,E	I	
15.729	816110	4.5	M	4A		7			0.05	B		12		Y	1	Tanti,T	J	
15.729	816111	4.6	M	4A		7			0.089	R	5.5	18	4.5M	N	1	Ventura,F		
15.7291	816112	5.4	B	4A	4	7	0.67	60	0.05	B		10	5.3CMT	Y	2	Franciosi,C		
15.730	816113	4.7	S						0.06	B		10				Giampaolo,G		
15.73	816114	3.8	B	DCS 8	4	7	0.12		0.050	B		10	3.5CM	N	1	Roos,M.C		
15.735	816115	4.8	M	4A		8			0.04	B		12		N	1	Henshaw,C	K	
15.736	816116	4.6	M	4A			0.9		0.030	B		8	5.5M	Y	1	Villa,M		
15.737	816117	4.2	S	100		6	0.5	60	0.08	B		11	4	M	Y	4	Gainsford,M.J	L
15.739	816118	4.8	B	4A	3.9	8	0.33	50	0.330	N	4.5	59	5.5	Y	1	Castino,R	L	
15.739	816119	4.7	B	INW					0.080	B		20	4.0	Y	1	Guthrie,O		
15.740	816120	4.8	M	4A	4.0	7	0.6	68	0.08	B		11	4.0MT	N	1	Fleet,R.W		
15.740	816121	4.0	S	4A						EY			5.2	Y	2	Milani,G	M	
15.740	816122	4.5	B	4A		8	1.9	66	0.05	B		10	5.0M	Y	1	Vanin,G		
15.741	816123		S		5	6	1.17	59	0.08	B		20	5.2	Y	2	Milani,G	N	
15.741	816124		S		5	6	1.17	55	0.08	B		20	5.2	Y	2	Milani,G	O	
15.743	816125	4.4	S	4A					0.05	B		10	2.5	Y	1	Hurst,G.M		
15.746	816126	4.8	B	4A	4	8	0.33	50	0.050	B		16	5.5	Y	1	Castino,R	L	
15.747	816127	4.7	S	4A	4.6	5	0.15	46	0.07	B		16	4.5CM	N	1	Taylor,M.D	P	
15.75	816128				3.8	6	0.28	70	0.20	N	4.7	104	3.5	Y	1	Cappellari,M	L	
15.75	816129	4.7	B	DCS 8		4			0.063	B		8	4	CM	N	1	Geenen,J.J	
15.75	816130	4.7	B	4A	10	7			0.050	B		7	CM	Y	1	Jannink,D.W	Q	
15.756	816131	4.5	M	100	5	6	0.38	50	0.05	B		10	4.5MC	Y	1	Menichetti,R		
15.764	816132	4.9	B	4A	4.7	7	0.17	74	0.080	B		20	4.5M	Y	2	Dionisi,M	R	
15.765	816133	4.9	M	4A					0.050	B		7	5.8	Y	1	Stott,D	L	
15.769	816134	4.3	B	4A		5	1.3	63	0.06	B		15	4.8	Y	2	Vincent,J	S	
15.772	816135		S	100		7			0.25	N	6	60		Y	1	Gainsford,M.J	T	
15.795	816136	4.5	S	4A	6	8	1.0	67	0.05	B		10	2.5	Y	1	Hurst,G.M		
15.799	816137	4.5	S	4A	5.4	8			0.08	B		15			1	Hurst,G.M	U	
15.94	816138	4.7	B	AA	5	7			0.035	B		7				Green,D.W.E	V	
15.94	816139	4.6	S	AA					0.035	B		7				Green,D.W.E		
15.95	816140	4.7	B	AA	5	8			0.050	B		7				Green,D.W.E	V	
15.95	816141	4.6	S	AA					0.050	B		7				Green,D.W.E		
15.96	816142	4.1	B	AAVSO	4.5	7	1.0	62	0.050	B		10				Bortle,J.E		
15.96	816143	4.7	B	AA	7.8	7			0.080	B		20				Green,D.W.E	V	
15.96	816144	4.3	M	AA	7.8	7			0.080	B		20				Green,D.W.E	V	
15.96	816145	4.5	S	AA	7.8	7			0.080	B		20				Green,D.W.E	V	
15.96	816146						1.4	62	0.050	B		7				Bortle,J.E		
15.96	816147				2.3				0.500	N	5	78				Bortle,J.E	W	
15.979	816148	4.7	S	4A	3.8	7	0.67	55	0.203	N	6	101	4.5	Y	1	Hudak,D.M	X	
15.979	816149	4.0	B	99	6	4	0.60	50	0.05	B		7	4.5			Lairret,R		
15.986	816150	3.9	B	99		5	0.74	65	0.05	B		7	4.5		1	Benavides,A		
15.994	816151	4.4	M	4A	6	7			0.063	B		9	2.9	Y	1	DeYoung,J.A	Y	

NOTE A Moonlight in the area.

NOTE B Naked eye coma only.

NOTE C Appears stellar.

NOTE D Dust tail.

NOTE E Light pollution.

NOTE F Coma diameter uncertain. (Observer indicated "Y" method. Ed.)

NOTE G Tail length = trace. (80x200 reflector: coma dia. = 3.0", DC = 7. Ed.)

NOTE H (Twilight, moon).

NOTE I Type I tail was 3.3 deg. long at PA 70 deg. Type II tail was 2.5 deg. long with PA spanning 48 to 90 deg.

NOTE J Moon. Wind.

NOTE K Moon, twilight.

NOTE L Moon.

NOTE M Moonlight, clear sky.

NOTE N Ion tail.

NOTE O Parabolic tail axis.

NOTE P Haze. Antoniadi II.

NOTE Q Telescopic limit is 7.

NOTE R Coma diameter accuracy +/-0.5. Tail length accuracy +/-0.01. PA by drawing, PA 74 at distance 0 deg., PA 68 at distance 0.09

deg., PA 66 at distance 0.21 deg.

NOTE S Tail split 8 to 10 arc min. Centre PA given. Coma fuzzy.

NOTE T Low.

NOTE U Very low.

NOTE V Coma diameter approximate.

NOTE W Broad 15" jet in PA 130 deg.

NOTE X Tail length and PA approximate.

NOTE Y High thin overcast.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
15.691	830814	1.6	0.090	M	11	56	10	4.5	3	Westlund,M	A
15.724	830815		0.25	N	6	40, 80	25	4	2	Adamoli,G	B
15.736	830816	0.10	0.125	N	5.8	28, 40, 60	42	5.0	1	Riccabone,G	C
15.774	830817	1.4	0.05	B		10	90	2.5	1	Hurst,G.M	D
15.792	830818		0.203	SC	10	60			1	Verdenet,M	E

NOTE A Disturbing lights: twilight, moon.

NOTE B Tail at PA 80. Major axis central condensation at PA 350. Central condensation elongated, irregular and very compact and

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bright, while the coma is soft and round.  
 NOTE C "Mustache" of greater luminosity at PA 47. Dimensions of the comet determined indirectly and therefore not completely reliable. Magnifications of 80 and 144 also used. Two drawings included. Moonlight, twilight, and intense city lights interfered with the observation. (Translated by IHM staff. Ed.)  
 NOTE D Very cold. Moon 1/2. Tail at PA 67 deg., length 1 deg. Tail at PA 55 deg., length 0.8 deg. Nuclear condensation offset PA 250 approximately.  
 NOTE E (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Eyp	Gdng	Id/Typ	Site	Observer(s)	Notes
15.003	850853	0.200	4.5		10.3 x 6.9	2.00	Kodak Tri-X		N	T	17/C	1	Priester,D.C	A
15.007	850854	0.200	4.5		10.3 x 6.9	6.00	Kodak Tri-X		N	T	18/C	1	Priester,D.C	A
15.013	850855	1.260	6.2	0.203	1.6 x 1.1	6.00	Kodak VRI1000	1000/	N	T	17/C	1	Priester,D.C	A
15.013	850856	0.200	4.5		10.3 x 6.9	6.00	Kodak Tri-X		N	T	17/C	1	Priester,D.C	A
15.017	850857	1.260	6.2	0.203	1.6 x 1.1	3.00	Kodak VRI1000	1000/	N	T	19/C	1	Priester,D.C	A
15.017	850858	0.200	4.5		10.3 x 6.9	3.00	Kodak Tri-X		N	T	18/C	1	Priester,D.C	A
15.393	850859	1.760	5.8	0.303	1.2 x 0.8	5.00	Kodak 2415		N	T	20/C	1	Priester,D.C	A
15.722	850860	0.760	4	0.19	2.7 x 1.8	6.00	Fujichrome	400/27	N	O	4/P	1	Nijima,T	B
15.722	850861	0.250	4		8.2 x 5.5	6.00	Ilford HP5	400/27	N	O	3/T	1	Mikuz,H	C
15.722	850862	1.000	5	0.200	2.1 x 1.4	7.00	3M 1000	1000/	N	X	6/T	1	Mikuz,H	D
15.732	850863	0.760	4	0.19	2.7 x 1.8	8.00	Fujichrome	400/27	N	O	9/S	1	Vania,G	E
15.732	850864	0.250	4		8.2 x 5.5	8.00	Ilford HP5	400/27	N	O	414/T	1	Mikuz,H	F
15.739	850865	0.760	4	0.19	2.7 x 1.8	3.00	Ilford HP5	400/27	N	O	7/T	1	Mikuz,H	D
15.740	850866	0.200	4.5		10.3 x 6.9	5.00	3M Slide	1000/	N	X	34/T	1	Mikuz,H	
15.743	850867	0.760	4	0.19	2.7 x 1.8	8.00	Ilford HP5	400/27	N	O	3/P	1	Villa,M	G
15.749	850868	1.400	5.6	0.260	1.5 x 1.0	10.00	Ilford FP4	400/27	N	O	35/T	1	Mikuz,H	
15.756	850869	0.760	4	0.19	2.7 x 1.8	10.00	Ilford HP5	125/22	N	O	17/C	1	Paolinetti,R	H
15.758	850870	0.225	1.5	0.140	9.1 x 6.1	1.50	Kodak 2415	400/27	N	O	39/T	1	Mikuz,H	
15.759	850871	0.700	5	0.14	2.9 x 2.0	8.00	Kodak IIA-F		Y	O	1/S	1	Valisa,P	I
15.763	850872	1.400	5.6	0.260	1.5 x 1.0	23.00	Ilford FP4	125/22	N	M	54/P	1	Ridley,H.B	J
15.780	850873	0.225	1.5	0.140	9.1 x 6.1	2.50	Kodak 2415		N	O	19/C	1	Paolinetti,R	H
									Y	O	2/S	1	Valisa,P	I

NOTE A Push processed to 800 ASA.  
 NOTE B (Observer's image identifier is 860115-1. Ed.) Large format (70 mm) film used. City lights interfered with the observation.  
 NOTE C Exposure taken in moonlight. Image copied 2x. 120 size film. (Observer's image identifier is followed by suffix A. Ed.)  
 NOTE D 120 size film (6x7 cm).  
 NOTE E Moonlight and twilight interfered with the observation.  
 NOTE F Exposure taken in moonlight. Image copied 2x. 120 size film. (Observer's image identifier is preceded by prefix RH. Ed.)  
 NOTE G Enlargement of the print 2x.  
 NOTE H (Observer's image identifier is followed by suffix A. Ed.)  
 NOTE I Instrument is Schmidt camera.  
 NOTE J Moonlight. (Observer's image identifier is preceded by prefix 2A. Ed.) Instrument uses photographic plates.

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## 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	
16.031	816152	5.0	B	99					0.080	B		20	4.5M	Y		Smith,D		
16.11	816153	4.5	M	4A					0.05	B		10	5 M	Y	3	Hale,A	A	
16.396	816154	3.9	M	4A	3.8	5			0.1	N	10	25	4.5	Y	1	Ichikawa,K		
16.412	816155	3.8	S	100	6	6	0.50	75	0.07	B		10	3.0	N	1	Kobayashi,J		
16.681	816156	4.5	B	12W	5				0.080	B		20	4.0	N	1	Guthier,O		
16.684	816157	5.0	M	4A	5	3	0.2	88	0.09	M	11	56	3.5TM	Y	3	Westlund,M	B	
16.691	816158	3.5	S	4A	12	8	1.2	60	0.152	N	5	44	3.5	N	2	Moeller,M	C	
16.70	816159	4.4	B	4A	4.0	3.0	7	0.13	60	0.050	R	10	13	4.2T	N	2	Jahn,J	D
16.70	816160	3.8	S	DCS 8		6	2.0		0.080	B		15	3	CM	N	2	Kroon,B	
16.708	816161	4.8	B		16.0	2	0.1		0.063	R	13	44	5.0	Y	1	Bartnik,M		
16.715	816162	4.6	B	4A					0.030	B		8	2.5CMT	N	2	Adamoli,G		
16.719	816163	4.5	M	4A		6			0.08	B		10	4.0CM	Y	1	Rapavy,P	E	
16.72	816164	4.9	S	DCS 7		8			0.040	B		12	4	MC	N	1	Feijth,B	
16.724	816165			4A		8	0.3		0.114	N	8.7	50	4.0MC	Y	1	Villa,M		
16.729	816166	4.6	M	4A		8			0.05	B		10	5.0MTZ	Y	8	Melandri,F		
16.729	816167	4.7	S	4A	7.5	7	0.6	75	0.050	B		7	4.5CM	N	1	Piccinini,M		
16.7291	816168	5.3	B	4A	3	7	0.67	68	0.05	B		10	5.0CMT	Y	2	Franciosi,C		
16.73	816169	4.2	B	100					0.05	B			4.5MT	Y	10	Bouma,R.J		
16.73	816170	4.0	S	100	4	7	2.5	58	0.05	B		10	4.5MT	Y	10	Bouma,R.J		
16.736	816171	4.8	M	4A	3.5	7	0.7	63	0.08	B		11	4.0MT	N	1	Fleet,R.W		
16.74	816172	4.0	B	DCS 7					0.040	B		7	5.5MT	Y	7	Bus,E.P		
16.74	816173	3.8	S	DCS 7	6	6	2.5	65	0.040	B		7	5.5MT	Y	7	Bus,E.P	F	
16.74	816174	4.7	B	DCS 7	6	6			0.040	B		8	4.5MT	Y	2	Scholten,A	G	
16.74	816175	4.3	S	DCS 7	10	8	1.5	66	0.050	B		10	4.5CM	N	1	van der Laan,T.A		
16.74	816176	4.0	S	DCS 8	6	7	0.75	60	0.080	B		15	4	CM	Y	1	Wils,P	
16.742	816177	4.6	M	4A					0.030	B		8	4.0MC	Y	1	Villa,M		
16.743	816178	4.8	S	100	5	5			0.05	B		10	4.5MC	Y	1	Menichetti,R		
16.750	816179	4.1	S	4A	4	8			0.080	B		20	4.0C	N	5	Meozzi,D		
16.75	816180	4.5	S	DCS 7	4	8			0.050	B		10	4	MC	N	1	van Loo,F.R	
16.756	816181				5	7			0.13	N	5.5	36	4.0MC	Y	1	Menichetti,R		
16.76	816182	4.3	B	4A	6	7	0.65	65	0.050	B		7	4.0	Y	2	Merlin,J.-C	H	
16.94	816183	4.0	S	4A	30	7	2	70	0.05	B		7	4.5	Y	1	Harrington,P	I	
16.95	816184	4.6	B	AA	4	7			0.035	B		7				Green,D.W.E	J	
16.95	816185	4.7	B	AA	4	8			0.050	B		7				Green,D.W.E	J	
16.95	816186	4.5	S	AA	4	8			0.050	B		7				Green,D.W.E	J	
16.95	816187	4.6	S	AA	4	7			0.035	B		7				Green,D.W.E	J	
16.96	816188				2.5	7	0.5		0.500	N	5	96				Bortle,J.E	K	
16.96	816189	4.2	B	AAVSO	5				0.050	B		10				Bortle,J.E		
16.96	816190	4.8	B	AA	5.5	7	2		0.080	B		20				Green,D.W.E	L	
16.96	816191	4.5	M	AA					0.080	B		20				Green,D.W.E		
16.96	816192	4.6	S	AA					0.080	B		20				Green,D.W.E		
16.968	816193	4.0	B	99	6	3	0.75	46	0.05	B		7	4.0		1	Lalret,R		
16.972	816194	3.8	B	99		5	0.80	64	0.05	B		7	4.5		1	Benavides,A		
16.983	816195	4.5	M	4A	6	7	1	58	0.063	B		9	2.9	Y		DeYoung,J.A	M	

NOTE A Observation affected by moonlight and intermittent clouds.

NOTE B (Twilight, moon).

NOTE C Twilight.

NOTE D PA approximate.

NOTE E Coma ellipt.

NOTE F Very transparent sky, comet easily visible to naked eye.

NOTE G Tail length and PA determined in 15x80 binoculars: 0.50 deg. long at PA 55.

NOTE H Moon.

NOTE I Low in sky.

NOTE J Coma diameter approximate.

NOTE K Tail length is lower limit. Nuc. mag. 8.8, moonlight.

NOTE L Coma diameter approximate. Tail length is lower limit.

NOTE M High thin overcast/haze.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
16.033	830819	0.43	0.203	N	6	61,116	6	4.5	1	Williams,J	A
16.682	830820	1.6	0.090	M	11	56	5	3.5	3	Westlund,M	B
16.733	830821		0.12	R	15	53, 74, 131		5.0	2	Franciosi,C	C
16.735	830822	0.13	0.125	N	5.8	28, 40, 60	33	5.0	1	Riccabone,G	D
16.748	830823	0.10	0.40	N	5	81,254	15	4.0	2	Merlin,J.-C	E
16.991	830824	1.1	0.356	SC	11	70	16	5.8	1	Cuthill,D.D	F

NOTE A Bright, out of round, central condensation. The tail appeared "washed out". Tail at PA 90. Moonlight, twilight, city lights interfered with the observation.

NOTE B Disturbing lights: twilight, moon.

NOTE C Pseudo nucleus diameter 1'. Plasma jet PA 85, length approximately 1'. Tail PA 68, length approximately 40'. Coma

approximately 2.5'. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Diffuse luminous regions at PA 156 and at PA 31. Magnifications of 80 and 144 also used. Two drawings included. Moonlight,

twilight, and intense city lights interfered with the observation. (Translated by IHW staff. Ed.)

NOTE E Tail at PA 33, dust tail? then curved to PA 55; tail at PA 65, PA given = axis of fan shaped tail; jet at PA 223, very

condensed; jet at PA 268, very condensed; jet at PA 355, straight and narrow.

NOTE F This drawing is a composite made from a visual observation and a photo taken with the 5" f/10 Schmidt-Cassegrain on Plus-X film for 16 min. (no filters). Fainter field stars were drawn near the inner tail region only. The sharp "spike" (3') at PA 83 is the brightest feature of the tail.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
16.001	850874	1.260	6.2	0.203	1.6 x 1.1	2.00	Kodak VR1000	1000/	N	T	20/C	1	Priester,D.C	A
16.002	850875	0.200	4.5		10.3 x 6.9	5.05	Kodak Tri-X		N	T	21/C	1	Priester,D.C	B
16.006	850876	0.200	4.5		10.3 x 6.9	2.00	Kodak Tri-X		N	T	22/C	1	Priester,D.C	B
16.008	850877	0.200	4.5		10.3 x 6.9	2.25	Kodak Tri-X		N	T	23/C	1	Priester,D.C	B
16.099	850878	0.610	4	0.152	3.4 x 2.3	3.00	Kodak Tri-X	400/	N	X	1/N	1	Lazerson,B	C
16.704	850879	0.500	5	0.100	4.1 x 2.7	12.00	ORWO NP 27	400/27	N	C	3/N	1	Rapavy,P	D
16.722	850880	0.050	1.8		39.6 x 27.0	0.17	Ektachrome	400/	N	X	6/P	8	Melandri,F	E
16.738	850881	0.225	1.6	0.136	9.1 x 6.1	1.50	Kodak 2415		Y	O	001/T	1	Belli,V	F
16.741	850882	1.400	5.6	0.260	1.5 x 1.0	17.00	Kodak Tri-X	400/27	N	O	2/C	1	Paolinetti,R	
16.743	850883	2.400	4	0.600	0.9 x 0.6	8.00	Kodak 2415		Y	O	002/T	1	Belli,V	G
16.751	850884	2.400	4	0.600	0.9 x 0.6	4.00	Kodak 2415		Y	O	003/T	1	Belli,V	G

NOTE A Start time uncertain.

NOTE B Push processed to 800 ASA.

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NOTE C "Push" processed to 800 ASA.

NOTE D City lights and moonlight interfered with the observation. Large format (68x87 mm) film used.

NOTE E The white streak below in the print is caused by an airplane. Moonlight, twilight, and zodiacal light interfered with the observation.

NOTE F Instrument is Schmidt camera.

NOTE G Instrument is Newtonian telescope.

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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
17.368	816196	4.5	M	4A					0.035	B		7	5	Y	1	Watanabe,A	
17.38	816197	4.5	B	4A	2.3	7	0.7	65	0.05	B		7	2.5T	N	1	Kanai,K	
17.385	816198	4.4	M	4A	3.3	8	1.5	60	0.08	B		11	4 MC	N	1	Mitsuma,S	A
17.39	816199	4.8	S	AAVSO	3	7	1	65	0.13	N	6.3	24	4.5M	Y	1	Hayashi,A	
17.39	816200	4.5	M	4A				0.3	0.05	B		7	3.0TH	Y	2	Suzuki,K	B
17.394	816201	4.0	S	4A					0.030	B		8	CM	Y	1	Kato,T	C
17.40	816202	3.7	B	4A	5	7	0.5	60	0.08	B		20	3.0CT	N	1	Oka,A	
17.684	816203	4.8	B	4A					0.04	B		8	3.0C	N	1	Czerniewski,W	D
17.688	816204	4.8	M	CZ	30	3	2	320	0.03	B		6	5.0	Y	1	Hajek,P	
17.694	816205	4.4	B	4A	3	7	0.33		0.063	R	13.3	21	3 T	Y	1	Pilski,A	
17.698	816206	5.0							0.050	B		10	TCM		1	Kauschke,A	E
17.707	816207	3.6	S	4A	15	8			0.080	R	12	16	4.0	Y	1	Moeller,M	F
17.71	816208	4.5	B	4A	3.0	7	0.06	100	0.050	R	10	13	3.0T	N	2	Jahn,J	G
17.712	816209	5.0	B	4A		1			0.030	B		8	3.0MC	N	2	Richert,M	
17.715	816210	4.6	M	CZ	5	9			0.080	B		10	3.5	N	1	Bilek,V	H
17.715	816211	4.5	B	4A	8	7	0.3		0.080	R	6.2	50	M	Y	1	Pfitzer,E	
17.718	816212	5.2	B	4A	8	5			0.150	R	15	56	4.0C	Y	1	Bauer,H.-P	I
17.719	816213	4.8		4A					0.030	B		8	M		1	Ratz,M	
17.719	816214	3.9	M	CZ					0.10	B		25	3 MTC	Y	1	Valasek,V	J
17.719	816215	4.3	B		8.4 4.4	6	3.5		0.030	B		8	5.7C	Y	1	Winkler,R	
17.72	816216			4A	5	7	2.00		0.10	B		14	2.9	Y	1	Kraling,W	
17.72	816217	4.2	B	4A			2.00		0.056	B		8	2.9	Y	1	Kraling,W	K
17.720	816218	4.8	B	4A		6			0.050	B		10	3.0	N	1	Lehmann,T	
17.726	816219	4.2	B	IHW		5	2.0		0.080	B		20	4.0	Y	1	Guthier,O	L
17.729	816220	4.5	S	4A					0.050	B		7	4.4CM	Y	5	Piccinini,M	
17.729	816221	4.5		4A					0.030	B		8	M		1	Ratz,K	
17.7291	816222	5.1	B	4A	3	7	0.58	60	0.05	B		10	4.7CMTZY	Y	2	Franciosi,C	
17.732	816223	5.0	B	4A	3	8	0.25	50	0.330	M	4.5	59	4.8	Y	1	Castino,R	M
17.733	816224	3.9	S	4A					EY				4.8	Y	2	Milani,G	N
17.735	816225				5	5	1.17	60	0.08	B		20	4.8	Y	2	Milani,G	N
17.736	816226	4.6	M	4A		8	0.6		0.05	B		10	5.5MTZ	Y	1	Melandri,F	O
17.736	816227				4	6	1.0	75	0.200	N	5	60	4.4CM	Y	5	Piccinini,M	
17.737	816228	4.7	S						0.05	B		7				Giampaolo,G	
17.738	816229	4.5	M	4A			0.8		0.030	B		8	4.5M	Y	1	Villa,M	
17.739	816230	5.2	S	4A	5	7	1	50	0.05	B		10	3.5MC	N	1	Giuntoli,M	P
17.743	816231	5.0	B	4A	3	8	0.33	50	0.050	B		16	5.0	Y	1	Castino,R	Q
17.743	816232	4.8	B	4A	4.4	7	0.55	74	0.080	B		20	4.5M	Y	2	Dionisi,M	R
17.750	816233	4.8	S	100	5	8	0.42	40	0.05	B		10	4.5MC	Y	1	Menichetti,R	
17.757	816234	4.4	M	4A	35				0.050	B		10	2.5MC	N	1	Lozano,L	D
17.764	816235	3.4		4A	2	5	0.05	90	0.08	B		15	3.5	Y	1	Dietrich,M	S
17.972	816236	3.7	B	99		5	0.74	56	0.05	B		7	4	N	4	Benavides,A	
17.979	816237	4.7	S	4A	5.5		0.32	60	0.035	B		7	3.5CM	Y	3	Morrison,W	

NOTE A 7.4.

NOTE B Cloud.

NOTE C Faintest star by 8x30 binoculars = 4.5.

NOTE D Clouds.

NOTE E Tail length = y.

NOTE F Twilight.

NOTE G PA's approximate.

NOTE H Coma diameter uncertain. Fog.

NOTE I Instrument is Coude refractor.

NOTE J Adapted to the actual (rather bad, street lights visible) observing conditions.

NOTE K Tail length approximate.

NOTE L Coma diameter 4 to 5 arc min.

NOTE M Moon and twilight.

NOTE N Cirri at the horizon, moonlight.

NOTE O Veiled sky.

NOTE P Tail length and PA uncertain.

NOTE Q Moon.

NOTE R Coma diameter accuracy +/-0.6. Tail length accuracy +/-0.01. PA by drawing, PA 74 at distance 0 deg., PA 65 deg. at distance 0.32 deg., PA 63 at distance 0.58 deg.

NOTE S Haze. (Translated by IHW staff. Observer indicated "A" method [Argelander?]. Ed.)

SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
17.687	830825	0.07	0.100	B		25	28	2.9	1	Gojdic,S	
17.705	830826		0.203	SC	10	340			2	Freydank,H	A
17.727	830827	0.5	0.25	N	6	80	15	4.0	2	Adamoli,G	B
17.741	830828	0.07	0.100	B		25	25	2.9	1	Havrilak,M	
17.760	830829	1.6	0.05	B	8	10	10	4.5	1	Menichetti,R	C

NOTE A Brightness 3.9 mag.; dia. about 1' 15".

NOTE B City lights and moonlight interfered with the observation. Tail at PA 60.

NOTE C Tail at PA 60 deg. Vertex distance = 2.4', semi latus rectum P1 = 2.4', P2 = 2.4'.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
17.726	850885	0.760	4	0.19	2.7 x 1.8	2.00	Ilford HP5	400/27	N	O	51/T	1	Mikuz,H	A
17.730	850886	0.760	4	0.19	2.7 x 1.8	3.00	Ilford HP5	400/27	N	O	52/T	1	Mikuz,H	A
17.732	850887	0.760	4	0.19	2.7 x 1.8	3.00	Ilford HP5	400/27	N	O	53/T	1	Mikuz,H	A
17.734	850888	0.760	4	0.19	2.7 x 1.8	3.00	Ilford HP5	400/27	N	O	54/T	1	Mikuz,H	A
17.736	850889	0.760	4	0.19	2.7 x 1.8	3.00	Ilford HP5	400/27	N	O	55/T	1	Mikuz,H	A
17.741	850890	0.760	4	0.19	2.7 x 1.8	3.00	Ilford HP5	400/27	N	O	57/T	1	Mikuz,H	A

NOTE A Exposures taken in moonlight.



DATE: 18 JAN 1986

DATE: 18 JAN 1986

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	
18.017	816238			4A	24	7			0.200	SC	10	78	4.2	N	1	Saraceno,J	A	
18.017	816239	5.3	B	4A					0.050	B		7				Saraceno,J		
18.06	816240	4.6	V	4A						EY			5.5	Y	1	Keen,R		
18.06	816241	4.7		4A	5	8	2.5	60	0.040	B		8	5.5	Y	1	Keen,R	B	
18.10	816242	4.4	M	4A			4.5	65	0.05	B		10	5.5M	Y	3	Hale,A	C	
18.10	816243	4.1	M	4A		9			0.050	B		12	4.5M	Y	17	Morris,C.S		
18.10	816244	4.1	M	4A	3	8	1.0	62	0.080	B		20	4.5M	Y	17	Morris,C.S	D	
18.10	816245	4.1		4A		9				EY			4.5M	Y	17	Morris,C.S		
18.104	816246	4.5:		100, 4A			1		0.050	B	4	7	5.3	Y		Underhay,E	E	
18.11	816247	4.3	B	4A						EY			5.5M	Y	3	Hale,A	C	
18.38	816248	4.5	B	4A		8			0.05	B		7	3.0T	N	1	Kanai,K		
18.38	816249	4.5	M	4A					0.08	B		11	3.5MT	N	1	Mitsuma,S	F	
18.39	816250	5.0	S	AAVSO	2.5	7	1	65	0.13	N	6.3	24	4.0M	Y	1	Hayashi,A		
18.49	816251	4.6	B	M	3	4	0.1		0.05	B		7				Guryanov,S		
18.55	816252	4.7	B	AAVSO					0.10	R						Churyumov,K		
18.57	816253	4.1	B	M		7			0.05	B		7				Konstantinov,S		
18.63	816254	7		B		5			0.03	B		8				Zin'vayev,V.A	G	
18.64	816255	3.8	B	E	8	5	2.5	69	0.05	B		7				Mormil,V		
18.65	816256	4.2	B	M	4				0.08	R		29				Nesterov,Yu		
18.65	816257	4.9	B	M					0.07	N	8	33				Yurchenko,Yu		
18.66	816258	3.8	B	E	8	5	2.5	69	0.05	B		7				Mormil,V		
18.68	816259	3.8	B	E		5			0.05	B						Mormil,V		
18.69	816260	4.1	S	DCS 8		6	2.3		0.080	B		15	3 CM	N	2	Kroon,B		
18.718	816261	5.0	B	4A	3	8	0.22	50	0.050	B		16	4.8	Y	1	Castino,R	H	
18.7291	816262	4.7	B	4A	4	7	1	55	0.05	B		10	4.7MT2	Y	1	Franciosi,C		
18.760	816263	4.4	M	4A	40	7	1.5	286	0.050	B		10	3.0MC	Y	1	Lozano,L		
18.766	816264	4.4	M	4A	3.3	8	0.58	40	0.153	N	8.5	65		Y	6	Torres,E	I	
18.771	816265	3.9	B	4A	3	8			0.05	B		20		C	N	4	Gallego,J	J
18.95	816266	4.4	B	AA	4	8			0.050	B		7				Green,D.W.E	G	
18.96	816267	4.3	B	AA	5	7			0.035	B		7				Green,D.W.E	G	
18.96	816268	4.2	S	AA					0.035	B		7				Green,D.W.E		
18.96	816269	4.2	S	AA					0.050	B		7				Green,D.W.E		
18.968	816270	3.6	B	99		5	0.74	58	0.05	B		7	3.7		3	Benavides,A	K	
18.97	816271	4.3	B	AA	4.5	7			0.080	B		20				Green,D.W.E	G	
18.976	816272	3.6	B	99	6	3	0.67	54	0.05	B		7	4.8			Lairret,R		
18.98	816273	4.0	S	AA	4.5	7			0.080	B		20				Green,D.W.E	G	

NOTE A Light pollution.

NOTE B Modified Sidgwick method used.

NOTE C First quarter moon may have slightly affected magnitude and tail length estimates.

NOTE D Broad dust tail adjacent to southern edge of gas tail. Total angular extent of combined tails was from PA 55 to 75.

NOTE E Visible naked eye as 0.5 deg. streak.

NOTE F 7.1.

NOTE G Coma diameter approximate.

NOTE H Moon and twilight.

NOTE I (Observer gave limit as 7.5. Ed.)

NOTE J Moon &amp; horizon.

NOTE K With zodiacal light.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	Durm	Lim	Site	Observer(s)	Notes
18.734	830830	0.10	0.125	N	8	28, 40, 60	24	5.0	2	Riccabone,G	A
18.769	830831	0.7	0.153	N	8.5	65	35	7.5	1	Cifuentes,E	B

NOTE A Nucleus diameter 68 arc sec. Moonlight, twilight, and city lights interfered with the observation. Magnifications of 80 and 144 also used. Two drawings included. (Translated by IHW staff. Ed.)

NOTE B Bright nucleus. Long gas tail, estimate 35 arc min. First third of tail brighter and more visible. (Translated by IHW staff. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
18.098	850891	0.610	4	0.152	3.4 x 2.3	3.00	Kodak Tri-X	400/	N	X	2/N	1	Lazerson,H	A

NOTE A "Push" processed to 800 ASA.

DATE: 19 JAN 1986

DATE: 19 JAN 1986

## 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		
19.06	816274	4.5	V	4A						EY			5.5	Y	1	Keen,R			
19.06	816275	4.6		4A	4		8	2.0	60	0.040	B		8	5.5	Y	1	Keen,R	A	
19.09	816276	4.1	M	4A	3		8	2.0	56	0.080	B		20	4.5M	Y	17	Morris,C.S	B	
19.10	816277	4.1		4A			9			EY			4.5M	Y	17	Morris,C.S			
19.101	816278	4.9	B	100, 4A	10		7	1.0	300	0.050	B		10	5.0M	Y	1	Stapleton,J	C	
19.102	816279	4.6		4A			8			EY			5	M	Y	6	Edberg,S.J	D	
19.11	816280	4.4	M	4A				2	65	0.05	B		10	4.5C	Y	21	Hale,A	E	
19.37	816281	3.6	S	4A			8			0.08	B		11	2.0	N	1	Momose,M	F	
19.38	816282	4.3	M	4A			8			0.08	B		11	3	MT	N	1	Mitsuma,S	G
19.38194	816283	4	B	4A			9			0.15	N	6	28	4.5	Y	1	Okumura,S		
19.382	816284	4.2	M	4A	1			0.6	60	0.030	B		8	4.0CMT	Y	2	Kato,T		
19.386	816285	3.8	M	4A						0.07	B		10	3.0	N	8	Ichikawa,K		
19.39	816286	4.5	B	4A	2.3		8	0.3		0.05	B		7	2.5TC	N	2	Kanai,K		
19.39	816287	5.1	S	AAVSO	2		8	0.5	65	0.13	N	6.3	24	3.0M	Y	1	Hayashi,A		
19.39	816288	4.4	S	4A, 100	4.5		8			0.07	B		10	3.5M	Y	1	Yasuki,M		
19.40	816289	4.4	M	SAO	6		7	0.67	65	0.06	R	12	22	3.0M	Y	1	Nakamura,A		
19.40	816290	4.5	M	4A						0.05	B		7	3.0TM	Y	2	Suzuki,K		
19.41	816291	4.5	M					2.3	55	0.05	B		7	4	Y	2	Hiraga,M		
19.55	816292	4.7	B	AAVSO						0.10	R						Churyumov,K		
19.56	816293	4.7	B	AAVSO						0.10	R						Churyumov,K		
19.60	816294	3.8	V	M						EY							Poroshin,A	H	
19.64	816295	7	B	M						0.03	B		8				Zinzyev,V.A		
19.719	816296	4.5	M	4A			7			0.05	B		12		Y	1	Tanti,T	I	
19.743	816297	4.5	S	4A			7	0.1	60	0.08	B		20	2.9	N	2	Storey,D	J	
19.75	816298	4.7	S	99	5		7	0.5	60	0.065	B		12	4.5	N	1	Foulkes,M	K	
19.750	816299	4.5	S	4A			7	0.18	70	0.08	B		20	2.9	Y	2	Storey,D	J	
19.752	816300	4.9	M	4A						0.050	B		7	5.8	Y	1	Stott,D	L	
19.758	816301	3.4	S	4A				0.7	65	0.08	B		11	3	Y	1	Gainsford,M.J	M	
19.760	816302	3.2	S	4A	3.4		6			0.25	N	6	60	3	Y	1	Gainsford,M.J	N	
19.767	816303	4.1	B	99	4.8		9	0.40	80	0.050	B		10	4.2MT	Y	3	Abbott,J	O	
19.767	816304	4.2	S	4A	6.3		9	1.0	62	0.05	B		10	2.9	Y	1	Hurst,G.M		
19.771	816305	3.9	B	4A	3		8			0.05	B		20	C	N	4	Gallego,J	P	
19.771	816306	4.3	M	4A	40		7	1.5	290	0.050	B		10	3.0MC	Y	1	Lozano,L		
19.774	816307	4.2	S	4A	5.4		9	1.0	62	0.08	B		15	2.9	Y	1	Hurst,G.M		
19.972	816308	3.6	B	99	4		4	0.73	55	0.05	B		7	4.0			Lairret,R		

NOTE A Modified Sidgwick method used.

NOTE B Total angular extent of combined tails was from PA 50 to 70.

NOTE C See with eye, clear tail. (PA approximate and may have been measured incorrectly. Ed.)

NOTE D Comparison star Omicron Aqr 5.5 deg. above comet in angular altitude. No extinction correction.

NOTE E Observed from within Los Angeles city limits. Probably considerable interference from light pollution. Despite this, the comet could be briefly glimpsed with the naked eye.

NOTE F Bright moon. (Translated by INW staff. Ed.)

NOTE G 6.8

NOTE H Faint central condensation.

NOTE I Moon. Clouds. Twilight.

NOTE J III seeing. Transparency v. good. Twilight present.

NOTE K Moon up.

NOTE L Moon.

NOTE M Low.

NOTE N Low. Tail length uncertain.

NOTE O Comparison stars 2.9, 4.7, 5.1. Hint of a tail structure.

NOTE P Moon &amp; horizon.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
19.769	830832	2.4	0.05	B		10	25	2.9	1	Hurst,G.M	A

NOTE A Tail at PA 62 deg., length 1 deg.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
19.038	850892	0.600	4	0.150	3.4 x 2.3	10.00	Fujichrome	400/	N	T	1/S	1	Levy,A	
19.053	850893	0.600	4	0.150	3.4 x 2.3	12.00	Fujichrome	400/	N	T	2/S	1	Levy,A	
19.071	850894	1.829	4.5	0.406	1.1 x 0.8	5.00	Fuji HR 400		N	T	6/P	1	Cunningham,J	A
19.075	850895	1.829	4.5	0.406	1.1 x 0.8	3.00	Fuji HR 400		N	T	7/P	1	Cunningham,J	B
19.100	850896	2.000	10	0.203	1.0 x 0.7	0.17	3M 1000	1000/	N	O	22/N	6	Edberg,S.J	
19.104	850897	2.000	10	0.200	1.0 x 0.7	0.17	Ilford HP 5	500/	N	O	63/C	6	Edberg,S.J	
19.105	850898	2.000	10	0.200	1.0 x 0.7	0.33	Ilford HP 5	500/	N	O	64/C	6	Edberg,S.J	
19.106	850899	2.000	10	0.200	1.0 x 0.7	0.50	Ilford HP 5	500/	N	O	65/C	6	Edberg,S.J	
19.108	850900	2.000	10	0.200	1.0 x 0.7	0.67	Ilford HP 5	500/	N	O	66/C	6	Edberg,S.J	
19.109	850281	2.000	10	0.200	1.0 x 0.7	0.27	Ilford HP 5	500/	N	O	67/C	7	Edberg,S.J	C
19.111	850901	2.000	10	0.200	1.0 x 0.7	1.00	Ilford HP 5	500/	N	O	68/C	6	Edberg,S.J	

NOTE A Film "push" processed from ISO 400 to 1000.

NOTE B Cloud? Film "push" processed from ISO 400 to 1000.

NOTE C Exposure time approximate.

DATE: 20 JAN 1986

DATE: 20 JAN 1986

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	
20.06	816309	4.6	V	4A						EY			5.0	Y	1	Keen,R		
20.06	816310	4.6		4A	5	8	1.8	60	0.040	B		8	5.0	Y	1	Keen,R	A	
20.09	816311	4.1	M	4A		8	1.0		0.080	B		20	3.5M	Y	14	Morris,C.S		
20.09	816312	4.1	M	4A					0.050	B		12	3.5M	Y	14	Morris,C.S		
20.1007	816313	4.1	S	DCS	6	9	0.35	67	0.080	B		20	4.5		3	Machholz,D	B	
20.1042	816314	4.3	S	DCS	7	9	0.45	67	0.152	N	8.0	76	4.5		3	Machholz,D	B	
20.1049	816315	6.7	S	SAO	1	9			0.152	N	8.0	76	4.5		3	Machholz,D	C	
20.208	816316	4.6	M	4A	23	8	1.83	300	0.05	B		10	5.0	Y	1	Fabre,R	D	
20.374	816317	4.5	S		1	7	0.03	60	0.10	N	10	55	3.0T	Y	1	Kato,T	C	
20.38	816318	4		4A			0.3		0.05	B		7	4.0TM	Y	2	Suzuki,K		
20.381	816319	4.0	M	4A	2				0.030	B		8	4.0CT	Y	1	Kato,T		
20.385	816320	4.0	B	4A					0.070	B		10		Y	3	Nakamura,Y		
20.39	816321	3.5			6	7			0.12	B		20	5.5	Y	1	Washi,S	E	
20.40	816322	3.5	B	4A	4	8	0.3	60	0.08	B		20	2.5CT	N	1	Oka,A		
20.410	816323	3.8	S	4A	5	7	0.50	70	0.07	B		10	3.0	N	1	Kobayashi,J		
20.50	816324	4.5	B	M	2	4	0.1		0.05	B		7				Guryanov,S		
20.66	816325	4.7	B	AAVSO					0.10	R						Churyumov,K		
20.667	816326	5.0	M	4A	18	7	0.12	310	0.150	N	5.3	45	4.8	Y	1	Wikholm,L		
20.698	816327	4.3	M	CZ	5	8			0.080	B		10	4.0T	Y	1	Bilek,V		
20.698	816328	3.7		CZ					0.10	B		25	MTC	Y	1	Valasek,V	F	
20.70	816329	4.8	M	AA	5	8	0.6	100	0.08	R	8.3	26				Keszthelyi,S	G	
20.701	816330	4.4	B	4A	6	7	0.1		0.080	R	6.2	50		Y	1	Pfitzner,E		
20.703	816331	4.2	M	AAVSO		9	1		0.063	R	13.3	52				Kosa-Kiss,A	H	
20.705	816332	4.2	M	CZ		6	0.5		0.05	B		7	2.9M		2	Pravec,P	I	
20.705	816333	4.5	M	CZ	3	6			0.055	R	6	12	2	TM	N	1	Silhan,J	
20.708	816334	4.3	B	CZ	20	5			0.04	B		7	5.0	Y	1	Brancik,K		
20.71	816335	3.6	M	4A	5	6	0.8	63	0.05	B		7	4.0	Y	4	Granslo,B.H		
20.71	816336	4.5	S	DCS 7	2	9			0.100	B		14	2.5MCT	N	1	van Loo,F.R		
20.715	816337	3.3	S						0.06	B		10				Giampaolo,G		
20.7187	816338	4.5	B	4A	3	7	0.33	53	0.05	B		10	4.7MTZ	Y	2	Franciosi,C		
20.719	816339	4.2	V	4A					EY				4.5M	Y	1	Hasubick,W	J	
20.719	816340	4.0	B	4A	5.4	7	2.07		0.10	B		14	4.5M	Y	1	Hasubick,W	K	
20.719	816341	4.2	M	CZ	3	7			0.055	R	6	12	2.5M	N	1	Silhan,J		
20.722	816342	5.0	B	4A		8			0.050	B		16	4.5	Y	1	Castino,R	L	
20.722	816343	4.5	B	4A	5.4	6	0.4		0.080	B		20	4.5M	Y	1	Koch,V		
20.722	816344	4.7	XI	AQR	4	7	0.50	40	0.350	SC	11	120	4.0TM	N	1	Marx,H	M	
20.722	816345	3.8	M	4A		6			0.08	B		10	3.0CM	N	1	Rapavy,P	N	
20.726	816346	4.3	M	4A		8	0.7	60	0.05	B		10	4.0M	Y	1	Vanin,G		
20.729	816347	4.4	M	4A		8			0.05	B		10	4.0MTZ	Y	8	Melandri,F		
20.729	816348	4.0	B	4A	8.0	8	0.5	60	0.070	B		20	4.5T	N	1	Koschny,D	O	
20.729	816349	4.0	S	4A	5	7	1.5	55	0.080	B		15	4.5C	Y	1	Korth,S	P	
20.729	816350	3.6	B	IHW	4	7	2.7	61	0.080	B		20	3.5	Y	1	Guthier,O		
20.729	816351	4.3	M	4A		8			0.030	B		8	3.5M	Y	1	Villa,M		
20.73	816352	4.2	B	AA	5	7	0.7	53	0.080	B		20	4.0T	N	1	Schmeer,P	Q	
20.73	816353	3.6	B	4A	1	8	0.3	70	0.08	B		15	MCT	Y	1	Glowinski,C	R	
20.733	816354	4.3	B	4A	4	6	0.33		0.080	B		20	4.5M	Y	1	Koch,B.O		
20.733	816355	4.4	B	4A		6			0.06	R	8	15	4.0M	Y	1	Schambeck,C.M		
20.736	816356	4.0	M	4A		7			0.07	B		20		Y	1	Tanti,T	S	
20.740	816357	3.8	M	4A	12	9	1.83	72	0.08	B		11	4.0M	Y	1	Gubo,H		
20.740	816358	4.0	B	4A		9	1.3	60	0.063	B		9	3.0	Y	2	Kammerer,A	T	
20.74	816359	3.8	B	4A	5	7			0.080	R	5	22	CM	Y	1	Jahnink,D.W	U	
20.74	816360	3.7	S	DCS 7,8		7	0.17	55	0.080	B		15	3	MT	Y	1	Scholten,A	
20.740	816361							60	0.080	B		20	5.0		4	Zanotta,M.V		
20.743	816362	3.6	B	4A		9	0.92	58	0.050	B		7	3	M		Linder,J		
20.743	816363	4.0	S	4A		8			0.089	R	5.5	18	4.5	N	1	Ventura,F	V	
20.750	816364				2				0.203	SC	10	81	3.0	Y	2	Kammerer,A	W	
20.75	816365	4.3	B	4A	6	7	1.00	55	0.050	B		7	4.0	Y	2	Merlin,J.-C	X	
20.792	816366	3.5	S	4A	5	7	0.5		0.050	B		16	3.5M	Y	1	Nolle,M		
20.971	816367	3.6	B	99	4	4	0.70	55	0.05	B		7	3.8			Lairret,R		

NOTE A Modified Sidgwick method used.

NOTE B 70% moon 88 degrees away.

NOTE C 70% moon 88 degrees away. Observation of inner coma only.

NOTE D (PA value appears to be measured incorrectly. Ed.)

NOTE E Tail length 2 deg. &lt;. [sic] (Observer indicated "Y" method. Ed.)

NOTE F Adapted to the actual (rather bad, street lights visible) observing conditions.

NOTE G + 10x50 B and 6 mag. nucleus + naked eye. [sic]

NOTE H Naked eye. Clouds interfered with coma diameter and tail PA measurements.

NOTE I Through clouds.

NOTE J In focus.

NOTE K PA 53-62.

NOTE L Moon and twilight.

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

NOTE N Coma ellipt.

NOTE O Drawing.

NOTE P Condensation very brilliant and striking. Coma diameter is upper limit.

NOTE Q Beta Agr: 2.9 mag., Xi Agr: 4.7 mag. Coma diameter approximate.

NOTE R Coma diameter, tail length, and PA approximate.

NOTE S Seeing good, transparency excellent. Moon. Low. Twilight.

NOTE T Tail length and PA are approximate.

NOTE U Telescopic limit is 4.5.

NOTE V V. Bright moon.; low. The first part of the tail must be particularly bright since its first 12' could be made out in spite of the bright moonlight.

NOTE W Coma diameter approximate.

NOTE X Moon.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
20.708	830833	1	0.080	R	8.3	41	29	5.0	1	Keszthelyi,S	A
20.710	830834		0.063	R	13.3	52			1	Csukas,M	B
20.729	830835		0.254	N	6	150			1	Guthier,O	C
20.730	830836	0.08	0.125	N	5.8	28, 40, 60	9	3.0	1	Riccabone,G	D
20.740	830837	0.3	0.112	N	8	56,113	30	4.5	1	Koschny,D	E
20.750	830838	0.25	0.356	SC	11	200	30		1	Verdenet,M	F
20.757	830839	0.38	0.15	N	5	25, 75	20	4.3	2	Merlin,J.-C	G

NOTE A Tail (great) 0.6 at PA 100, tail (little) 0.2 at PA 70.

NOTE B Total magn. 4.2; coma diameter = 9'x6'; DC 9; halo diameter = 30'; tail at PA 62, 24' length; tail at PA 108, 27' length. (Duration not indicated. Time of observation is end time. Ed.) Schematic drawing.

DATE: 20 JAN 1986

DATE: 20 JAN 1986

NOTE C (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Owing to the horrible observing conditions and atmospheric transmission it's not possible to supply a celestial orientation. Magnification of 80 also used. Two drawings included. Twilight and intense city lights interfered with the observation. (Translated by IHW staff. Ed.)

NOTE E Only 1 tail at PA 60. Twilight interfered with the observation.

NOTE F (Drawing submitted includes inset of coma at 400x. Additional drawing submitted made using 11x80 binoculars (2.02"/mm). Ed.)

NOTE G Tail at PA 55; jet at PA 196, then curved to PA 161; jet at PA 196, then curved to PA 230; jet at PA 201, curved to PA 230; jet at PA 254, short and condensed; jet at PA 316, narrow, straight.

# SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
20.068	850902	1.829	4.5	0.406	1.1 x 0.8	3.00	Fuji HR 400		N	T	11/P	1	Cunningham,J	A
20.072	850903	1.829	4.5	0.406	1.1 x 0.8	5.00	Fuji HR 400		N	T	12/P	1	Cunningham,J	A
20.098	850904	0.610	4	0.152	3.4 x 2.3	3.00	Kodak Tri-X	400/	N	X	3/N	1	Lazerson,H	B
20.697	850905	0.500	5	0.100	4.1 x 2.7	8.00	ORWO NP 27	400/27	N	C	4/N	1	Rapavy,P	C
20.709	850906	0.500	5	0.100	4.1 x 2.7	10.00	ORWO NP 27	400/27	N	C	5/N	1	Rapavy,P	C

NOTE A Film "push" processed from ISO 400 to 1000.

NOTE B "Push" processed to 800 ASA.

NOTE C City lights, moonlight, and twilight interfered with the observation. Large format (68x87 mm) film used.

DATE: 21 JAN 1986

DATE: 21 JAN 1986

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	
21.01	816368	4.2	B	4A		7	0.50		0.080	B		20		Y		Kronk,G	A	
21.017	816369			4A	17.5	7			0.200	SC	10	78	4.3	N	1	Saraceno,J	B	
21.017	816370	4.8	B	4A					0.050	B		7				Saraceno,J		
21.031	816371		M	4A	3	6	2	63	0.279	SC	10	167	4	MT	Y	1	Kemble,L.J	C
21.10	816372	4.2	M	4A			2.5	65	0.05	B		10	4.5M	Y	20	1	Hale,A	D
21.10	816373	3.7	M	4A		8	1.0		0.080	B		20	3.0M	Y	18	Morris,C.S		
21.10	816374	3.7	M	4A					0.050	B		12	3.0M	Y	18	Morris,C.S		
21.10	816375	4.3	S	4A	5	7	2	55	0.080	B		11	4.5	Y	1	Spratt,C.E		
21.212	816376	4.6	M	4A	23	8	2.00	300	0.05	B		10	5.0	Y	1	Fabre,R	E	
21.38	816377	4.5	B	4A		9			0.07	R	8.6	19	3.0T	N	5	Makino,J		
21.64	816378	5.3	B	M		4			0.03	R		3				Gerasimov,A		
21.64	816379	3.5	S	E	8	4	1	60	0.05	B		7				Mormil,V		
21.65	816380	4.6	B	M	21	7			0.07	N	8	33				Yurchenko,Yu		
21.66	816381	3.5	B	E	8	5	1	60	0.05	B		7				Mormil,V		
21.66	816382	4.6	B	E		7			0.07	N	8	33				Yurchenko,Yu		
21.67	816383	3.5	B	M	7	5	1	60	0.05	B		7				Mormil,V		
21.67	816384	4.7	B	M					0.03	B		8				Tsygankov,D		
21.67	816385	4.4	B	M					0.05	B		7				Pishnenko,V		
21.691	816386	3.2	M	4A	20	6			0.15	N	4	37	3.0TMC	N	1	Posa,O	F	
21.694	816387	4.7	B	4A		6			0.064	R	6.3	20	2.5MTC	N	1	Maciejewski,W	G	
21.698	816388	4.4	M	CZ	30	2	3	300	0.10	B		25	3.5M	Y	1	Hajek,P		
21.701	816389	4.5	M	CZ		5			0.05	B		7	2.7		2	Pravec,P		
21.707	816390	4.0	B	4A		7	0.5		0.07	B		20	MT	N	1	Filimon,E		
21.7144	816391	4.3	S		18	8	2	42	0.08	B		10	4.6	N	1	Znasik,M		
21.717	816392	3.6	B	IHW					0.080	B		20			1	Guthrie,O		
21.73	816393	4.1	S	4A					0.08	B		20	3.0		1	Shanklin,J.D		
21.745	816394	4.1	S	4A	5	8	0.5	62	0.08	B		15	2.0	Y	1	Hurst,G.M	H	
21.747	816395	4.2	B	4A					0.050	B		10		N	1	Rogers,J.H	I	
21.750	816396	4.7	M	4A					0.050	B		7	5.7	Y	1	Stott,D	J	
21.760	816397	3.8	B	4A	2	8			0.05	B		20	C	N	4	Gallego,J	K	
21.774	816398	4.1	M	4A	40	7	1.9	280	0.050	B		10	4.0MC	Y	1	Lozano,L	L	
21.938	816399	4.3	M	AAVSO					0.050	B		10				O'Meara,S.J		
21.94	816400	4.3	B	AA					0.080	B		20				Green,D.W.E		
21.94	816401	3.8	M	AA					0.080	B		20				Green,D.W.E		
21.94	816402	4.0	S	AA	4.5	7			0.080	B		20				Green,D.W.E	M	
21.96	816403				1.9	7	1.5	55	0.120	B		20				Bortle,J.E		
21.96	816404	4.2	B	AA					0.035	B		7				Green,D.W.E		
21.96	816405	4.2	B	IHW	4	8	1.0		0.050	B		10				Bortle,J.E		
21.96	816406	4.4	B	AA					0.050	B		7				Green,D.W.E		
21.96	816407	4.0	S	AA	5	7			0.035	B		7				Green,D.W.E	M	
21.96	816408	4.1	S	AA	5	8			0.050	B		7				Green,D.W.E	M	
21.96	816409	4.3	S	IHW					0.050	B		10				Bortle,J.E		
21.969	816410	3.7	B	99	4	4	0.67	60	0.05	B		7	3.8			Lalret,R		
21.977	816411	4.4	M	4A	6	6			0.063	B		9	2.9	Y		DeYoung,J.A		

NOTE A In twilight.

NOTE B Light pollution.

NOTE C The best ever; remarkable change observed for the first time, in dark patch to E, near core of comet; seen at time of bright twilight; at first suspected as due to unequal telescope temp., but scope was at ambient temp., dark offset not seen on stars; dark offset persisted till comet set at my site at 0155 UT. Two very faint, thin streamers to E from bright streak near core; fan-shaped diffuse tail to NE; tail visible in binocs. at 0120, still in bright twilight and moonlight; coma appears blue in twilight; tail length difficult to estimate due to gradual fading. (Drawing made.) Magnitude estimate: 4.5. Observation period ended at Jan. 21.079.

NOTE D Observation affected by moonlight and scattered cirrus.

NOTE E (PA value appears to be measured incorrectly. Ed.)

NOTE F Coma ellipt.

NOTE G (Observer precedes magnitude estimate with "min.". Ed.)

NOTE H Twilight and cloud. Coma diameter, tail length, and PA approximate.

NOTE I Very imprecise.

NOTE J Moon.

NOTE K Stellar.

NOTE L Low in the horizon. [sic]

NOTE M Coma diameter approximate.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
21.056	830840	3.3	0.280	SC	10	167	70		1	Kemble,L.J	A

NOTE A First seen in bright twilight; gibbous moon to SE. Best ever; comet bright in bright twilight; bluish coma; dark patch seen throughout observing period in coma E of core; brightening of coma from core to 95 deg.; tail fan-shaped to 63 deg.; two very fine streamers from bright edge of inner core to about 95 deg.; comet and tail visible in binocs. at 0120, while still in some twilight; in this, my 51st observation, first notice of evident change in coma.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
21.006	850907	4.180	16.5	0.254	0.5 x 0.3	2.50	Kodak 2415		Y	O	31/S	1	Lund,L	A
21.049	850908	1.583	8	0.203	1.3 x 0.9	0.17	Kodak 2415		Y	S	60/P	1	Minton,R.B	B
21.053	850909	1.583	8	0.203	1.3 x 0.9	10.00	Kodak 2415		Y	S	61/P	1	Minton,R.B	C

NOTE A Auxiliary lens used. Original instrument characteristics are FL = 1.530, f/6.

NOTE B The prints show an envelope or jet looping about halfway around the nuclear region. The bright nuclear region measures 15 by 30 arc sec. on the 10 sec. exposures. (My 10, 30, and 60 second exposures have pinpoint star images, so I am confident [sic] of the size.) (The observer supplied no information on the other exposures referred to here. Observer's image identifier is preceded by prefix CNF. Ed.)

NOTE C (Print submitted by observer is a composite of two contiguous 5 min. exposures. Ed.)

SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
21.014	870126	-O	CL	0.135	1.9		3.00	Kodak 2415		Y	C	906/S	4	Buchanan,W.T	A

NOTE A Moonlight interfered with the observation. Beta Aquarii and Halley invisible to naked eye. Spectrum lies along a meridian from south to north with wavelength increasing. (Observer's image identifier is E-119-06. Ed.)

DATE: 22 JAN 1986

DATE: 22 JAN 1986

## 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	
22.05	816412	4.5		4A			1.2	60	0.040	B		8	4.5	Y	1	Keen,R	A	
22.361	816413	4.0	M	4A	5	5	0.67		0.05	B		7	3.5	N	8	Ichikawa,K	B	
22.38	816414	4.6	B	4A	2.9	7	0.8		0.05	B		7	2.5T	N	1	Kasai,K		
22.38	816415	4.1	M	4A	2.7	8		60	0.08	B		11	4	MT	N	1	Mitsuma,S	C
22.38	816416	3.8	S	4A					0.08	B		11	2.0	N	1	Momose,M	D	
22.381	816417	3.7	S	4A	2	7	0.17	55	0.030	B		8	4.0T	Y	1	Kato,T		
22.396	816418	3.5	B	4A					0.035	B		7		N	1	Okada,M		
22.406	816419	4.4	S	4A	4	6	0.75	85	0.07	B		10	4.0	N	1	Kobayashi,J		
22.49	816420	4.7	B	E	2	4			0.05	B		7				Guryanov,S		
22.63	816421	3.4	B	E	8	5			0.05	B		7				Mormil,V		
22.65	816422	3.5	B	E	8	5			0.05	B		7				Mormil,V		
22.66	816423	3.6	B	E	6	5			0.05	B		7				Mormil,V		
22.684	816424	3.3:	S	4A	10	8			0.060	R	8	13	2.0	N	2	Moeller,M	E	
22.691	816425	4.7	B	4A		7			0.064	R	6.3	20	2.5MTC	N	1	Maciejewski,W	F	
22.70	816426	4.4	S	4A	4	6			0.050	R	10	13	3.0T	N	2	Jahn,J	G	
22.708	816427			4A	0.8	7	0.05	100	0.08	B		15			1	Dietrich,M	H	
22.708	816428	4.7:	XI	AQR	4	8			0.350	SC	11	120	T	N	1	Marx,H	I	
22.708	816429	4.2	B	4A	6	7	0.5		0.080	R	6.2	50	M	Y	1	Pfitzner,E		
22.712	816430	5.0	B	4A	8	5	0.2	30	0.150	R	15	56	4.0C	Y	1	Bauer,H.-P	J	
22.712	816431	4.8	B	4A	5	1			0.030	B		8	3.0MC	N	2	Richert,M		
22.715	816432	4.0	B			3			0.080	R	6.2	12	3.0MT		1	Lieder,F		
22.715	816433	3.6	B		8.7 4.8	6	4.0		0.030	B		8	5.8M	Y	1	Winkler,R		
22.717	816434	4.0	B	4A		7	0.5		0.07	B		20	MT	N	2	Fillimon,E		
22.719	816435	4.5	B	4A		7			0.050	B		7	6.0	Y	1	Bohme,D		
22.719	816436	3.8	B	CZ		6	0.6	60	0.08	B		10	5.4	Y	1	Janecek,V		
22.722	816437	3.7:	M	4A	12	9	1.33	62	0.08	B		11	3.0	N	1	Gubo,H		
22.726	816438	4.5	B		16.0	3	0.1		0.063	R	13	44	5.0	Y	1	Bartnik,M		
22.967	816439	3.4	B	99	4	4	0.67	58	0.05	B		7	4.0			Lairt,R		

NOTE A Twilight. Modified Sidgwick method used.

NOTE B PA = E.

NOTE C 6.7. Tail length 1 deg. to 1.5 deg.

NOTE D Bright moon. (Translated by IHW staff. Ed.)

NOTE E Twilight.

NOTE F (Observer precedes magnitude estimate with "min.". Ed.)

NOTE G Coma diameter approximate.

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

NOTE I Coma diameter approximate. Gap in clouds. (Translated by IHW staff. Observer indicated "A" method [Argelander?]. Ed.)

NOTE J Instrument is Coude refractor.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
22.377	850910	1.760	5.8	0.303	1.2 x 0.8	1.00	Kodak 2415		Y		5/P	1	Niijima,T	A

NOTE A (Observer's image identifier is 860122-2. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

DATE: 23 JAN 1986

DATE: 23 JAN 1986

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
23.006	816440	4.4	B	4A			1	60	0.035	B		7	3.0	Y	1	Stephan,C	A
23.06	816441	4.4		4A			0.3	60	0.040	B		8	5.0	Y	1	Keen,R	B
23.201	816442	4.3	B	4A			6		0.050	B		7	3	N	3	Krisciunas,K	C
23.208	816443	4.6	M	4A	23		8	2.17	300	0.05	B	10	5.0	Y	1	Fabre,R	D
23.38	816444	3.8	S	4A			7		0.08	B		11	2.0	N	1	Momose,M	E
23.49	816445	4.6	B	M	2		6		0.05	B		7				Guryanov,S	
23.72	816446	3.7	S	DCS 7,8			7		0.080	B		15	3.5MT	N	1	Scholten,A	
23.733	816447	3.2:	B	IHW					0.080	B		20		N	1	Guthrie,O	
23.74	816448	4.1	S	4A					0.08	B		20	3.5	N	1	Shanklin,J.D	
23.74	816449	3.8	S	99	4	3	8	0.5	65	0.065	B	12	4.0	N	1	Foulkes,M	F
23.74	816450	3.6	B	4A	4		7		0.050	B		7	CM	Y	1	Jannink,D.W	G
23.760	816451	3.5	B	4A	1		9		0.05	B		20	MC	N	4	Gallego,J	H
23.764	816452	3.4	S	4A				0.72	60	0.08	B	11		N	5	Gainsford,M.J	I
23.958	816453	4.3	M	4A			7		0.05	B		12	4.0M	Y	1	Knight,S	J
23.96	816454	3.5	B	AA	5		7		0.080	B		20				Green,D.W.E	K
23.96	816455	3.3	S	AA					0.080	B		20				Green,D.W.E	
23.96	816456	4.1	B	IHW	3		8	1	51	0.050	B	10				Bortle,J.E	
23.965	816457	3.6	B	99	4		4	0.80	55	0.05	B	7	4.8			Laird,R	
23.977	816458	4.0	M	4A	5		6	1.5	60	0.05	B	7	2.9	Y		DeYoung,J.A	L
23.978	816459	4.1	S	4A	4		7	0.37	50	0.035	B	7	3.2MT	Y	3	Morrison,W	

NOTE A 90% sunlit moon high in eastern sky - entire sky lit up.

NOTE B Twilight. Modified Sidgwick method used.

NOTE C Moonlight, twilight.

NOTE D (PA value appears to be measured incorrectly. Ed.)

NOTE E Bright moon. (Translated by IHW staff. Ed.)

NOTE F Moon, twilight.

NOTE G Telescopic limit is 5.

NOTE H Stellar.

NOTE I Low, moon, twilight.

NOTE J Bright moon.

NOTE K Coma diameter approximate.

NOTE L Moon, twilight, altitude problems.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
23.212	830841		0.44	N	4.5	90,222	10	5.0	1	Fabre,R	A
23.738	830842	0.2	0.254	N	6.4	41, 65	6	2.5	3	Abbott,J	B
23.74	830843	2	0.065	B		12	14	4.0	1	Foulkes,M	C
23.976	830844	0.5	0.305	R	15	114	5	2.9	2	DeYoung,J.A	D

NOTE A Unable to detect any detail in semi latus rectums although hints of streamers seen. There is a bright hot spot in front of the nucleus at PA 40. The streamer (300 deg.) is not attached to the bright extension on PA at the bottom (300 deg.) of the nucleus. Hotspot at PA 40; hotspot (ext.) at PA 300; streamer at PA 300; spikes at PA 320 and PA 260. Scale = 10"/mm.

NOTE B Central condensation approximately 36 arc sec. Inner coma "disk" approximately 1.4 arc min. through EW, 1.9 arc min. through NS. Northernmost envelope arc at PA 53 deg. approximately 4.2 arc min. Southernmost envelope arc at PA 112 deg., approximately 3.2 arc min. Vertex distance approximately 1.2 arc min. Semi latus rectum (northward) approximately 1.8 arc min. Semi latus rectum (southward) approximately 1.8 arc min. No field stars. Drawing orientation and field scale established by drift timing along EW axis. Tail totally lost to the bright sky (moonlight and twilight). Central condensation small, intense and "planetary" in appearance. The inner coma appeared rather hard-edged and approximately elliptical in shape. The envelope-arcs were of similar brightness to the outer-coma but any long tail present was east in the bright sky background.

NOTE C Coma diameter 4'x3', DC = 8. The comet was picked up in very strong twilight. Elliptical coma with a bright condensation just off centre almost as large as coma itself. Faint tail glimpsed, very surprised to see it under these conditions. Tail narrow, 0.5 deg. long at PA 65. Appearance probably modified by twilight conditions.

NOTE D Lumino [sic] at PA 60. Coma jets at PA 145 and PA 332.

DATE: 24 JAN 1986

DATE: 24 JAN 1986

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
24.083	816460	4.0	M	4A					0.050	B		7		Y	2	Jeffrey, J	A
24.09	816461	4.1	M	4A		8	1.0		0.080	B		20	3.0M	Y	18	Morris, C.S	
24.09	816462	4.6	S	4A	5	6		50	0.080	B		11	4.5	Y	1	Spratt, C.E	B
24.0958	816463	4.4	S	DCS	4	8	0.38	62	0.080	B		20	4.2		3	Machholz, D	C
24.0958	816464	4.6	B	DCS	4	8	0.38	62	0.080	B		20	4.2		3	Machholz, D	C
24.368	816465	4.0	S		2	7	0.03	60	0.10	N	10	55	3.0T	N	1	Kato, T	
24.375	816466	4.2	S	4A					0.030	B		8	3.0T	N	1	Kato, T	
24.384	816467	4.2		4A	3	7	0.5	80	0.080	B		11	5 TC	N	3	Okuda, M	D
24.386	816468	4.0	S	4A	2			60	0.030	B		8	3.0T	N	1	Kato, T	
24.400	816469	4.5	S	4A	4	7	0.25	60	0.07	B		10	4.5	N	1	Kobayashi, J	
24.650	816470	3.3	S	4A			0.5	60	0.08	B		11		Y	6	Gainsford, M.J	E
24.68	816471	4.6	B	M					0.03	B		8				Tsygankov, D	
24.715	816472	3.6	B	4A	6	5	0.2		0.035	B		7	5.5C	Y	1	Sciezor, T	F
24.715	816473	4.7	B	4A					0.030	B		8	3.0MC	N	2	Richert, M	
24.726	816474	3.8	B	IHW		8	2.5		0.080	B		20	3.0	N	2	Guthrie, O	
24.73	816475	4.1	S	4A					0.08	B		20	3.5		1	Shanklin, J.D	
24.73	816476	4.0	B	AA	5	7			0.080	B		20	3.5T	N	1	Schmeer, P	G
24.740	816477	4.3	M	4A	3.9	7	0.15	50	0.07	B		16	4.5CM	Y	1	Taylor, M.D	H
24.743	816478	3.9	S	4A	6	8	0.5	61	0.08	B		15	2.0	Y	1	Hurst, G.M	I
24.747	816479	4.1	S	99	4	8			0.065	B		12	4.0	N	1	Foulkes, M	J
24.750	816480	5.1	S	4A	4	5	0.1	50	0.04	B		8	4.5CM	Y	1	Taylor, M.D	K
24.758	816481	3.5	B	4A	1	9			0.05	B		20	MC	N	4	Gallego, J	L
24.765	816482	3.6	S	4A	6	8	0.5	61	0.05	B		10	2.0	Y	1	Hurst, G.M	I
24.771	816483	3.9	M	4A	40	8	2.0	290	0.050	B		16	2.5MC	N	1	Lozano, L	
24.93	816484	3.8	S	4A	10	6	0.5	60	0.05	B		7	3.0	N	1	Harrington, P	M
24.938	816485	4.2	M	AAVSO					0.050	B		10				O'Meara, S.J	
24.96	816486	3.9	B	AA					0.050	B		7				Green, D.W.E	N
24.96	816487	4.0	B	IHW	3	7			0.050	B		10				Bortle, J.E	
24.96	816488	4.2	B	AA					0.080	B		20				Green, D.W.E	
24.96	816489	3.6	S	AA	5	7			0.080	B		20				Green, D.W.E	N
24.96	816490	4.0	S	IHW					0.050	B		10				Bortle, J.E	
24.979	816491	4.1	B	4A					0.050	B		10	3 C	N	1	Robinson, R.L	

NOTE A Strong moonlight.

NOTE B Moon.

NOTE C 96% moon 136 degrees away.

NOTE D (Observer indicated "Y" method. Ed.)

NOTE E Low, moon, twilight. PA uncertain.

NOTE F Tail length uncertain. Thin fog above horizon.

NOTE G Beta Aqr: 2.9 mag., Xi Aqr: 4.7 mag. Coma diameter approximate.

NOTE H Twilight.

NOTE I Very low. Coma diameter, tail length, and PA approximate.

NOTE J Moon, twilight.

NOTE K Antinadi II.

NOTE L Stellar.

NOTE M Heavy twilight.

NOTE N Coma diameter approximate.



DATE: 25 JAN 1986

DATE: 25 JAN 1986

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	
25.10	816492	4.0	M	4A														
25.373	816493	4.0	M		1.5	8	2.0		0.080	B		20	2.5M	Y	17	Morris,C.S		
25.38	816494	4.6	B	4A	2.3	8	0.3	60	0.10	N	10	55	3.5T	N	1	Kato,T		
25.38	816495	4.0	M	4A		8	1	55	0.08	B		11	2.0T	N	1	Kanai,K		
25.382	816496	4.1	M	4A	1.5		0.2	60	0.030	B		8	4.0T	N	1	Mitsuma,S	A	
25.388	816497				2	7	0.13	60	0.10	N	10	55	4.0T	N	1	Kato,T		
25.429	816498	4.2	S	100	3	3			0.05	B		10	2	MTC	N	1	Kato,T	
25.71	816499	4.3	S	4A	3	7	0.08	40	0.050	R	10	13	2.5T	N	1	Menichetti,R		
25.7187	816500	4.2	B	4A	2.5	5			0.05	B		10	3.5MT	Y	2	Jahn,J	B	
25.722	816501	3.4	S	4A	5	7		55	0.15	B		25	5.0	N	1	Franciosi,C		
25.725	816502	4.6	S	4A	3	7			0.05	B		10	T	N	4	Parisio,R		
25.7291	816503	4.2	B	4A	2.5	5			0.20	SC	10	57	3.5MT	Y	1	Giuntoli,M	C	
25.73	816504	3.6	S	DCS 8	10	7	1.0	50	0.060	B		12	3	T	Y	1	Franciosi,C	D
25.73	816505	4.1	B	4A	5	6			0.050	B		7	4.0	Y	2	van de Weg,R.L.W	E	
25.736	816506	3.8	S	99	2	7			0.065	B		12	3.5	N	1	Merlin,J.-C	F	
25.74	816507	4.0	S	4A					0.08	B		20	3.0		1	Foulkes,M	G	
25.740	816508	3.9	S	4A		6			0.25	N	6	60	2.9	Y	1	Shanklin,J.D	H	
25.742	816509	3.5	S	4A	6	8	0.5		0.08	B		15	1.5	Y	1	Gainsford,M.J	I	
25.746	816510	3.4	S	4A					0.08	B		11	2.9	Y	1	Hurst,G.M	J	
25.750	816511				3	8			0.090	M	11	40	3.5	N	1	Gainsford,M.J	H	
25.753	816512	4.3	M	4A					0.050	B		7	5.5	Y	1	Foulkes,M	J	
25.757	816513	3.5:	S	4A	6	7	0.5	67	0.05	B		10	1.5	Y	1	Stott,D	K	
25.757	816514	4.6	S	4A	4	5			0.04	B		8	4.5M	Y	2	Hurst,G.M	L	
																Taylor,M.D	M	

NOTE A 6.5. Coma diameter 2-3'.

NOTE B Central mag. 5.8. Coma diameter, DC, tail length, and PA approximate.

NOTE C Coma diameter uncertain.

NOTE D No nucleus.

NOTE E Comet in reality may be 0.5-1 magnitude brighter.

NOTE F Very low.

NOTE G Twilight.

NOTE H Low, moon, twilight.

NOTE I Very low. Coma diameter and tail length approximate.

NOTE J Twilight, very low.

NOTE K Full moon.

NOTE L Very low. Coma diameter and tail lengths approximate. Tail PA of 54 deg. approximate.

NOTE M Antoniadi III. Moonlight. Good conditions v. near horizon. Temp. -6 to -7 C.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
25.75	830845	0.43	0.090	M	11	40	4	3.5	1	Foulkes,M	A

NOTE A Diameter 3', DC = 8. Very low. Image slightly elliptical. Bright centre. Comet set shortly after observation. Twilight very strong.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
25.370	850911	1.760	5.8	0.303	1.2 x 0.8	0.17	Sakuracolor	1600/	N		01/P	1	Niijima,T	A

NOTE A City lights interfered with the observation. 70 mm format used. (Observer's image identifier is 860125-2. Ed.)

DATE: 26 JAN 1986

DATE: 26 JAN 1986

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	
26.06	816515	4.1	B	4A	2	8	1.0	60	0.040	B		8	4.0	Y	1	Keen,R	A	
26.0896	816516	4.0	M	4A					0.05	B		7	3.0	N	6	Cook,A.J		
26.09	816517	4.7	S	4A	4.5	6	1	50	0.080	B		11	4.0	Y	1	Spratt,C.E		
26.10	816518	4.2:	M	4A			1.5	65	0.05	B		10	4	M	Y	20	Hale,A	B
26.10	816519	3.9:	M	4A		8	2.0	50	0.080	B		20	2.0M	Y	17	Morris,C.S	C	
26.1042	816520	4.6	S	DCS	4	8	0.43	62	0.080	B		20	4.8		1	Hachholz,D	D	
26.361	816521	4.3	M	4A	2.5	4	0.50		0.1	N	10	25	3.5	N	1	Ichikawa,K	E	
26.369	816522	4.0	S		1	7			0.10	N	10	55	3.0T	N	1	Kato,T		
26.37	816523	4.5	S	4A		7			0.05	B		7	1.0T	N	1	Kanai,K		
26.376	816524	3.6	M	4A	1	7	0.10	50	0.10	N	10	55	3.0T	N	1	Kato,T		
26.38	816525	4		4A		8			0.08	B		11	3	MT	N	1	Mitsuma,S	
26.385	816526	3.9	M	4A	1.5				0.030	B		8	3.0T	N	1	Kato,T		
26.70	816527	3.5:	B	4A	4	7			0.05	B		7	3.0	Y	4	Granslo,B.H		
26.7083	816528	4.3	B	4A	2.5	6	0.07	30	0.05	B		10	3.0MT	Y	2	Franciosi,C	F	
26.715	816529	4.3	B	4A					0.05	B		7	2.5T	Y	1	Dal Santo,M	G	
26.72	816530	3.4	S	DCS 8	10	7			0.060	B		12	3	T	Y	1	van de Weg,R.L.W	H
26.72	816531	4.2	S	DCS 8	6	9	0.10	45	0.050	B		10	1	MT	N	1	van Loo,F.R	
26.725	816532	3.7	S	99	3.0	8	0.87	55	0.08	B		15	3.0T	Y	3	Haver,R		
26.725	816533	3.7	S	4A	4	7	0.40	50	0.080	B		20	3.2	Y	1	Meozzi,D		
26.73	816534	3.5	B	4A	3	7			0.080	R	5	22		CMT	Y	1	Jannink,D.W	I
26.736	816535	3.8	S	99	2	8			0.065	B		12	3.5	N	1	Foulkes,M	J	
26.737	816536							60	0.080	B		20			5	Zanotta,M.V		

NOTE A Twilight and full moon. Extinction correction applied.

NOTE B Observation affected by moonlight (full moon), twilight, and low altitude. The comet could not be seen with the naked eye. No extinction corrections have been applied to the magnitude estimate.

NOTE C Differential extinction correction = -0.8 mag. was applied.

NOTE D 100% moon 160 degrees away.

NOTE E PA = E.

NOTE F Tail length approximate.

NOTE G Comet near horizon.

NOTE H Comet in reality may be 0.5-1 magnitude brighter.

NOTE I Telescopic limit is 4.5.

NOTE J Twilight.

DATE: 27 JAN 1986

DATE: 27 JAN 1986

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	816537	3.8	B	4A	2	8	0.7	60	0.040	B		8	4.0	Y	1	Keen,R	A	
27.0833	816538	4.0	S	4A		7			0.08	B		11	2	N	1	Cook,A.J	B	
27.09	816539	3.8:	M	4A		9			0.080	B		20	2.0T	Y	9	Morris,C.S	C	
27.0903	816540				1	7			0.30	R	16.4	179	3	N	1	Cook,A.J	B	
27.0903	816541				1	7			0.024	R	15.8	95	3	N	1	Cook,A.J	B	
27.372	816542	4.0	S		1	8			0.10	N	10	55	3.0T	N	1	Kato,T	B	
27.375	816543	4		4A		8			0.08	B		11	3	T	N	1	Mitsuma,S	
27.377	816544	4.0	S		2	8	0.05	45	0.10	N	10	111	3.5T	N	1	Kato,T	D	
27.38	816545	4.7	S	AAVSO	2	8			0.13	N	6.3	24	2.0T	Y	1	Hayashi,A		
27.381	816546	3.7	M	4A					0.030	B		8	3.5T	N	1	Kato,T		
27.401	816547	4.5		4A	2	8			0.07	B		10	4.5	N	1	Kobayashi,J	E	
27.707	816548	4.0:	B	4A			0.17		0.07	B		20	T	N	2	Filimon,E	F	
27.714	816549	4.0	B	4A					0.080	B		20	2.5	Y	1	Koch,B.O		
27.715	816550	3.5:	B	4A		7			0.10	B		14	2.5	Y	1	Hasubick,W		
27.7208	816551	4.3	B	4A		6			0.05	B		10	3.0T		2	Franciosi,C		
27.722	816552	3.5	M	4A	12	8	1.67	72	0.08	B		11	0.5	N	1	Gubo,E		
27.722	816553	4.0	B	4A		6			0.080	B		20	2.0	Y	1	Koch,V		
27.722	816554	5	:	4A					0.080	B		10			1	Mikuz,H		
27.724	816555							60	0.080	B		20			5	Zanotta,M.V		
27.725	816556	3.5	B	IHW		7			0.125	R	6	17		N	2	Guthier,O		
27.7291	816557			4A	2	6			0.12	R	15	53	3.0T		2	Franciosi,C		
27.770	816558	3.4	S	4A	2.5	4			0.08	B		20	2.5	Y	2	Milani,G	G	
27.938	816559	4.3	M	AAVSO					0.050	B		10				O'Meara,S.J		

NOTE A Twilight. Extinction correction applied.

NOTE B Bright twilight.

NOTE C Differential extinction correction = -0.9 mag. was applied.

NOTE D 5.5. Coma diameter 1-2'. Tail not seen.

NOTE E Magnitude estimation method = F.

NOTE F Able to observe comet for only 15 minutes. Tail length approximate. (Translated by IHW staff. Ed.)

NOTE G Twilight haze.

DATE: 28 JAN 1986

DATE: 28 JAN 1986

## 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
28.05	816560	3.5	B	4A	2	8	0.5	60	0.040	B		8	3.5	Y	1	Keen,R	A
28.09	816561	3.8:	M	4A		9			0.080	B		20	1.5T	Y	9	Morris,C.S	B
28.09	816562	4.7:	S	4A	4.0	6	0.5	50	0.080	B		11	4.0	Y	1	Spratt,C.E	C
28.10	816563	3.8	M	4A					0.05	B		10	3.5T	Y	20	Hale,A	D
28.368	816564	5.5	M	4A	1.1				0.1	N	10	83	3.5	N	1	Ichikawa,K	
28.701	816565	3.7:		CZ					0.10	B		25	TM	N	1	Silhan,J	E
28.720	816566	3.6	S	4A	4	7			0.080	B		20	2.5T	Y	1	Meozzi,D	
28.96	816567	4.2:	S	AA	1.5	7			0.120	B		20				Bortle,J.E	F

NOTE A Twilight. Extinction correction applied.

NOTE B Differential extinction correction was applied.

NOTE C In very strong twilight. DC and PA approximate.

NOTE D Comet very low, observation affected by low altitude and bright twilight. No extinction corrections have been applied to the magnitude estimate. No tail was visible in either the 10x50 binoculars or 20 cm reflector.

NOTE E Both the star Beta Aqr and the comet looked like small nebulae. Horizon in the field of view.

NOTE F Coma diameter approximate.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
28.708	850912	0.300	1.5	0.200	6.9 x 4.6	0.17	Kodak 2415		N		105/P		Jager,M	A

NOTE A Magnitude 3.5; elongated sun - comet 15 deg.

DATE: 6 FEB 1986

DATE: 6 FEB 1986

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
6.5	816568															O'Meara, S.J	A

NOTE A Unsuccessful attempt to find Halley in daylight. (Time unspecified by observer; roughly estimated by the Editor.)

DATE: 8 FEB 1986

DATE: 8 FEB 1986

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
8.5	816569															O'Meara,S.J	A

NOTE A Unsuccessful attempt to find Halley in daylight. (Time unspecified by observer; roughly estimated by the Editor.)

DATE: 9 FEB 1986

DATE: 9 FEB 1986

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
9.5	816570															O'Meara, S.J	A

NOTE A Unsuccessful attempt to find Halley in daylight. (Time unspecified by observer; roughly estimated by the Editor.)

DATE: 10 FEB 1986

DATE: 10 FEB 1986

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
10.5	816571															O'Meara, S.J	A

NOTE A Unsuccessful attempt to find Halley in daylight. (Time unspecified by observer; roughly estimated by the Editor.)



DATE: 11 FEB 1986

DATE: 11 FEB 1986

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
11.5	816572															O'Meara, S.J	A

NOTE A Unsuccessful attempt to find Halley in daylight. (Time unspecified by observer, roughly estimated by the Editor.)

DATE: 15 FEB 1986

DATE: 15 FEB 1986

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
15.128	816573	3.8	M	4B	4.5 2.5	7			0.08	B		11	6 T	Y	1	Fleet,R.W	A
15.437	816574	4.3	B	122					0.12	B		20	4	Y	3	Ferrin,I	B
15.784	816575	3.0:	S	4B	2	8	0.08		0.08	B		15	1.0T	N	1	Lovejoy,T	C
15.8403	816576				4	4			0.14	SN	3.6	20	3	Y	7	Cook,A.J	D
15.8472	816577	3.3	M	4B	4	4			0.05	B		7	3	Y	7	Cook,A.J	D
15.864	816578	4.5	S	4B	1.6	7		300	0.08	B		15	1 T	N	1	Kanai,K	
15.868	816579					9			0.08	B		11	T	N	1	Mitsuma,S	E
15.884	816580	4	S	4B	5	8			0.10	R	8	25	4.5	Y	1	Kobayashi,J	F

NOTE A Comparison star Epsilon Aquarii.

NOTE B Magnitude by method of Bo. approx. = 4.3. Correction for twilight about -2.4 mag. gives mag. approximately 1.9.

NOTE C Coma diameter approximate.

NOTE D In twilight.

NOTE E m2 = 4.

NOTE F Telescope is fluorite refractor. Zenith limit mag. 5.5.

DATE: 16 FEB 1986

DATE: 16 FEB 1986

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
16.125	816581	3.6	M	4B	8.0 2.5	7		280	0.08	B		11	6 T	Y	1	Fleet,R.W	A
16.130	816582	3.8	M	4B					0.075	R	16	50	6 T	Y	1	Fleet,R.W	B
16.437	816583	4.3	B	122					0.12	B		20	3.5	Y	3	Ferrin,I	C
16.78	816584	3.0	S	4B	3.0	8			0.08	B		15	2.5T	N	1	Lovejoy,T	D
16.78	816585	3.0	S	4B		8			0.08	B		15		N	1	Seargent,D	E
16.859	816586	4.2	S	4B	3.2	6			0.05	B		7	T	N	1	Kanai,K	
16.86	816587	> 4.5	S	AAVSO	2	7	0.17		0.08	B		15	2.0T	Y	1	Bayashi,A	
16.861	816588					8			0.08	B		11	T	N	1	Mitsuma,S	F
16.865	816589	4.7	S	4B	1.9	6	0.2	315	0.08	B		15	T	N	1	Kanai,K	
16.868	816590	4	M			7			0.16	N	6.3	31	T	N	1	Mitsuma,S	G

NOTE A Coma fan from PA 250-310. Comparison star Epsilon Aquarii.

NOTE B Comparison star Epsilon Aquarii.

NOTE C Magnitude by method of Bo. approx. = 4.3. Correction for twilight about -2.4 mag. gives mag. approximately 1.9.

NOTE D Tail length = trace.

NOTE E V. bright twilight.

NOTE F ml 3.5 to 4, coma diameter 1 to 2 arc min. m2 = 4.5.

NOTE G Coma diameter 2 to 3 arc min. m2 = 6.5.

DATE: 17 FEB 1986

DATE: 17 FEB 1986

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)
17.77	816591	2.4	S	4B	3		0.3		0.03	R	6	8	3.0T	N	1	Lovejoy,T

DATE: 18 FEB 1986

DATE: 18 FEB 1986

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
18.120	816592	3.5	B	4B	30	7	0.50	280	0.065	B		20	3.1	Y	1	McBain,J	A
18.129	816593	3.9	M	4B		8			0.04	B		12		N	1	Henshaw,C	B
18.413	816594	2.9	B	122	4	4	0.50	270	0.05	B		7	5.0	Y	1	Lairret,R	
18.78	816595	2.5	S	4B			1.0			EY			3.0T	N	1	Lovejoy,T	C
18.78	816596	3.6	S	4B		9			0.08	B		15		N	1	Seargent,D	D
18.881	816597	4.5	S	4B	5	8			0.08	B		11	4.5	N	1	Kobayashi,J	

NOTE A In twilight.

NOTE B Twilight.

NOTE C Tail naked eye.

NOTE D Estimate mainly cent. condensation.

DATE: 19 FEB 1986

DATE: 19 FEB 1986

## 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	
19.112	816598	4.5	M	4B					0.08	B		11	6	Y	1	Fleet,R.W	A	
19.113	816599	3.1	M	4B	4.8		0.5	287	0.08	B		11	6	Y	1	Fleet,R.W	B	
19.121	816600						0.7	285	0.08	B		11	6	Y	1	Fleet,R.W	C	
19.125	816601	3.5	B	4B	15 10	5	1	280	0.04	B		8		Y	1	Morrisby,A	D	
19.127	816602	3.7	M	4B		8	0.23		0.04	B		12		N	1	Henshaw,C	E	
19.129	816603	3.9	M	4B		7				EY		6		Y	1	Fleet,R.W	F	
19.132	816604	2.8	M	4B					0.08	B		11	6	T	Y	1	Fleet,R.W	B
19.135	816605	3.3	M	4B					0.08	B		11	6	T	Y	1	Fleet,R.W	B
19.417	816606			122			0.8		0.12	B		20	4.0	Y	3	Ferrin,I		
19.420	816607	3.5	B	122			1.0		0.12	B		20	4.5	Y	3	Ferrin,I		
19.6944	816608	2.7	S	4B	30	6	5.00	280		EY		5		Y	8	Cook,A.J	G	
19.76	816609	2.5	S	4B			2.0		0.08	B		15	4.5T	Y	1	Lovejoy,T		
19.77	816610	2.7		4B		9	0.25			EY				N	1	Seargent,D	H	
19.77	816611						0.25		0.08	B		15				Seargent,D	H	
19.770	816612	3.8	S	122	6	9	0.4		0.05	B		10	4.0	Y	1	Williams,P.F		
19.851	816613	3.8	M	4B	4.8 3.5		0.5		0.1	N	10	25	4.8	Y	1	Ichikawa,K	I	
19.856	816614	4.2	S	4B	1.3	7			0.08	B		15		T	N	1	Kanai,K	
19.858	816615	3.5		4B		8			0.08	B		11		T	N		Mitsuma,S	J
19.86	816616	3.7	S		3	6	0.25	270	0.08	B		11	5.7	Y	1	Akita,I		
19.86	816617	4.1	S	AAVSO	2	7	0.17	270	0.08	B		15	2.5T	Y	1	Hayashi,A		
19.86	816618	4.0	M	SAO	4	7			0.06	R	12	22	2.5T	Y	7	Nakamura,A	K	
19.86	816619	4			5	7	0.5		0.08	B		11	5.0	Y	2	Washi,S		
19.861	816620	3.4	S	4B	3.2	7			0.05	B		7		T	N	1	Kanai,K	
19.87	816621	4.5	M	4B	1.0	7			0.21	N	5.0	33	4.0T	Y	1	Suzuki,K		
19.873	816622	3.0	S		1.5	8			0.10	N	10	55	3.0T	Y	1	Kato,T		
19.875	816623	3.9	S	4B	7	7	0.25	260	0.10	R	8	25	5.0	Y	1	Kobayashi,J	L	

NOTE A Comparison star Rho Capricorni.

NOTE B Comparison star Epsilon Aquarii.

NOTE C Tail 8' wide.

NOTE D Thin, high cirrus.

NOTE E Twilight.

NOTE F Comparison star Alpha 2 Capricorni.

NOTE G On airliner.

NOTE H Tail length approximate.

NOTE I Tail length is lower limit.

NOTE J m2 = 4.5. Coma diameter 1 to 2 arc min. Tail length = 1 deg. &gt;. [sic]

NOTE K Tail length = yes.

NOTE L Telescope is fluorite refractor.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
19.121	830846	4	0.08	B		11			1	Fleet,R.W	A
19.772	830847	0.05	0.20	N	6.3	250			5	Lovejoy,T	B

NOTE A Leading edge at PA 250. Main tail at PA 285. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
19.417	850913	0.05	2.8		39.6 x27.0	2.00	Kodak Tri-X	400/	N		17/P	4	Ferrin,I

DATE: 20 FEB 1986

DATE: 20 FEB 1986

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
20.103	816624	3.4	B	4B					0.050	B		7	5.3	N	1	Lavarack,N	A
20.104	816625	3.0	S	4B	7.0 3.0	7	0.5	280	0.13	R	4	21	5.8	Y	2	Campos,J	B
20.110	816626	3.9	M	4B	5.0	7	0.5	281	0.08	B		11	4.8	Y	1	Fleet,R.W	C
20.111	816627	3.4	B	4B		5	0.8		0.06	B		15	5.8	Y	2	Vincent,J	D
20.113	816628	3.0	M	4B					0.035	B		9	5.0T	Y	1	Begbie,M.J.R	
20.113	816629	4.1	M	4B		7				EY			4.8	Y	1	Fleet,R.W	E
20.115	816630	3.0		4B		8				EY			5.8	Y	2	Campos,J	
20.118	816631				4.5	8		268	0.30	N	8.5	102	5.0T	Y	1	Begbie,M.J.R	F
20.118	816632	2.6	M	4B					0.08	B		11	4.8	Y	1	Fleet,R.W	G
20.118	816633	3.0	B	4B	30	7	1.5	285	0.065	B		20	3.3	Y	1	McBain,J	H
20.124	816634	3.6	M	4B	3	8			0.04	B		12		N	1	Henshaw,C	I
20.125	816635	3.5	B	4B	15	5	1.5	280	0.04	B		8		Y	1	Morrisby,A	
20.135	816636	3.0	M	4B					0.08	B		11	6 T	Y	1	Fleet,R.W	G
20.37	816637	3.0	B	AAVSO			1		0.04	B		7				Kiselev,N	
20.412	816638	2.9	B	122	6	4	0.60	265	0.05	B		7	5.3	Y	1	Laird,R	
20.56	816639	2.3:	M	4B		8	1.5		0.080	B		20	2.0TC	Y	6	Morris,C.S	J
20.57	816640	3.0:	M	4B			0.3	275	0.05	B		10	4 T	Y	2	Hale,A	K
20.77	816641	2.3	S	4B			1.0			EY			3.0T		1	Lovejoy,T	L
20.77	816642	2.8		4B						EY				N	1	Seargent,D	
20.77	816643						0.5		0.08	B		15				Seargent,D	M
20.847	816644	4.0	M	4B	5.0		0.5		0.1	N	10	25	4.5	Y	1	Ichikawa,K	N
20.851	816645	3.8	S	4B	1.9	8	0.2	285	0.05	B		7	1 T	Y	1	Kanai,K	
20.851	816646	3.8	B	4B	1.9	8	0.2	285	0.05	B		7	1 T	Y	1	Kanai,K	
20.86	816647	4.0	S	AAVSO	2	8	0.25	275	0.08	B		15	3.0T	Y	1	Hayashi,A	
20.872	816648	3.0	S		2	7	0.17	270	0.10	N	10	55	4.0T	Y	1	Kato,T	
20.873	816649	2.7	M	4B	6	6	0.5	270	0.030	B		8	4.0T	Y	1	Kato,T	

NOTE A Not fully dark adapted.

NOTE B Elongated coma; tail 10' at widest.

NOTE C Tail 11' wide at 0.3 deg. Comparison star Alpha 2 Capricorni.

NOTE D Coma fuzzy. Definite step in tail. 0.8 deg. tail 280/290; 0.6 deg. tail PA 290/320.

NOTE E Comparison star Alpha 2 Capricorni.

NOTE F Tail measurement refers to dust tail only.

NOTE G Comparison star Epsilon Aquarii.

NOTE H Central condensation seen easily in binoculars.

NOTE I Twilight. Comet seen naked eye.

NOTE J Differential extinction correction = -1.1 mag. was applied.

NOTE K Observation affected by low altitude, twilight, and cirrus. No extinction corrections have been applied to the magnitude estimate. The comet was not seen with the naked eye.

NOTE L Tail estimated with naked eye.

NOTE M Tail length approximate.

NOTE N Tail length is lower limit.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
20.110	830848	4	0.08	B		11		4.8	1	Fleet,R.W	A

NOTE A Leading edge at PA 255. Main tail at PA 281. Fan at PA 310. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 21 FEB 1986

DATE: 21 FEB 1986

## 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	
21.108	816650	3.5	B	4B		6	0.6		0.06	B		15	5.8	Y	2	Vincent,J	A	
21.111	816651				4.0	7	0.8	282	0.08	B		11	4.8	Y	1	Fleet,R.W	B	
21.115	816652	3.9	M	4B		7				EY			4.8	Y	1	Fleet,R.W	C	
21.115	816653	2.5	B	4B	30	7	1.58	285	0.065	B		20	6.2	Y	1	McBain,J	D	
21.117	816654	2.7	M	4B					0.08	B		11	4.8	Y	1	Fleet,R.W	E	
21.118	816655	3.7	M	4B					0.08	B		11	4.8	Y	1	Fleet,R.W	C	
21.125	816656	3.3	B	4B	8	5	2.5	270	0.04	B		8		Y	1	Morrisby,A	F	
21.126	816657	3.6	M	4B	4	8	0.40	280	0.04	B		12	3.6	N	1	Henshaw,C	G	
21.138	816658	3.4	M	4B					0.08	B		11		T	Y	1	Fleet,R.W	E
21.549	816659	3.6	M		18	3	11	113	0.08	B		11	4	N	1	Glassett,W	H	
21.549	816660	3.6	M		19	3	11	114	0.444	N	4.4	221	5	N	1	Glassett,W	I	
21.56	816661	2.3:	M	4B	7	8	2	285	0.080	B		20	3.0TC	Y	6	Morris,C.S	J	
21.56	816662	2.3:	M	4B	9	7			0.050	B		10	3.0TC	Y	6	Morris,C.S	J	
21.561	816663	3.6		4B		9				EY				Y	3	Edberg,S.J	K	
21.564	816664	4.2	S	4B		6			0.05	B		10		Y	3	Edberg,S.J	L	
21.77	816665	2.6	S	4B	5		4.5		0.03	R	6	8	5.3T	Y	1	Lovejoy,T	M	
21.77	816666	2.8		4B						EY				N	1	Seargent,D	N	
21.855	816667	3.5	M	4B	2	8	1	285	0.08	B		11	3.5T	N	1	Mitsuma,S	O	
21.860	816668	3.8	S	4B	1.9	8			0.05	B		7	T	Y	1	Kanai,K		
21.860	816669	3.8	B	4B	1.9	8			0.05	B		7	1 T	Y	1	Kanai,K		
21.884	816670	3.3	S	4B	10	6	2	270	0.08	B		11	5.0	Y	1	Kobayashi,J		

NOTE A Coma fuzzy. Tail triangular. PA 275/300.

NOTE B Fan to 0.3 deg. in PA 320.

NOTE C Comparison star Alpha 2 Capricorni.

NOTE D Mag. 9 star seen in tail.

NOTE E Comparison star Epsilon Aquarii.

NOTE F Low mist near horizon.

NOTE G Twilight. PA uncertain.

NOTE H Broad tail. Comet still close to sun.

NOTE I Broad tail. Comet still close to sun. Visible almost to daylight!

NOTE J Differential extinction correction = -1.3 mag. was applied.

NOTE K Comet stellar with tail. No extinction correction.

NOTE L No extinction correction.

NOTE M Broad glow north tail.

NOTE N Haze.

NOTE O m2 = 5.5.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
21.111	830849	4	0.08	B		11		4.8	1	Fleet,R.W	A
21.77	830850	0.05	0.20	N	6.3	250			5	Lovejoy,T	B

NOTE A Leading edge at PA 265. Main tail at PA 282. Fan at PA 320. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
21.767	850914	0.180	2.8		11.4 x 7.6	3.00	Kodak 2415		Y	O	3/S	1	Garradd,G
21.771	850915	0.180	2.8		11.4 x 7.6	2.50	Kodak 2415		Y	O	4/S	1	Garradd,G



DATE: 22 FEB 1986

DATE: 22 FEB 1986

## 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	
22.108	816671	3.2	B	4B			1.2	270	0.050	B		7	5.3	N	1	Lavarack,N	A	
22.130	816672	3.9	M	4B		7	0.5	277	0.08	B		11		Y	1	Fleet,R.W	B	
22.136	816673	3.3	M	4B					0.08	B		11	T	Y	1	Fleet,R.W	C	
22.464	816674	4	S	4B					0.035	B		7	3	T	N	3	Morrison,W	D
22.53	816675	3.0	B	4B	4	6	1.2	280	0.040	B		8	3.0	Y	1	Keen,R	E	
22.545	816676	3.5	M		19	3	11	114	0.444	N	4.4	221	5	Y	1	Glassett,W	F	
22.56	816677	3.0:	M	4B			0.5	275	0.05	B		10	4	T	Y	2	Hale,A	G
22.56	816678	3.0:	B	4B						EY			4	T	Y	2	Hale,A	G
22.649	816679	3.4	B	4B		6	1.5	280	0.050	B		7	5	Y	3	Krisciunas,K	H	
22.771	816680	2.5	S	4B			3		0.05	B		7	5.5T	Y	10	Garradd,G		
22.774	816681					8			0.31	N	5.4	129	5.5T	Y	10	Garradd,G		
22.85833	816682	4	B	4B		7	1.5	270	0.12	B		20	3		2	Okumura,S		
22.860	816683	3.8	S	4B	1.6	8			0.05	B		7	1	T	Y	1	Kanai,K	
22.86	816684	3.8	M	SAO		8			0.065	R	8	16	2.5T	Y	8	Nakamura,A	I	
22.86	816685	4.2	M	4B	2.0	7	0.3		0.21	N	5.0	33	4.0T	Y	1	Suzuki,K		
22.863	816686				4	7	0.17	290	0.10	N	10	55	3.5TM	Y	1	Kato,T	J	
22.864	816687	2.8	M	4B	6	7	0.4	280	0.030	B		8	3.5TM	Y	1	Kato,T		

NOTE A Not fully dark adapted.

NOTE B Between clouds. Comparison star Alpha 2 Capricorni.

NOTE C Comparison star Epsilon Aquarii.

NOTE D 0.15 f/5 refr., 3lx shows coma 2' dia., DC = 8, altitude 5 deg. in twilight.

NOTE E Twilight. Extinction correction applied.

NOTE F Broad tail.

NOTE G Observation affected by low altitude, twilight and cirrus. No extinction corrections have been applied to the magnitude estimate.

NOTE H Easy naked eye object.

NOTE I Tail length = yes.

NOTE J Haze.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
22.750	830851	0.18	0.20	N	7	155			1	Thompson,G	A

NOTE A Note the spine directly behind the nucleus. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
22.765	850916	0.180	2.8		11.4 x 7.6	2.50	Kodak 2415		Y	0	5/S	10	Garradd,G	
22.769	850917	0.180	2.8		11.4 x 7.6	5.00	Kodak 2415		Y	0	6/S	10	Garradd,G	
22.775	850918	0.180	2.8		11.4 x 7.6	5.25	Kodak 2415		Y	0	7/S	10	Garradd,G	
22.781	850919	0.180	2.8		11.4 x 7.6	2.17	Kodak 2415		Y	0	8/S	10	Garradd,G	A
22.782	850920	0.180	2.8		11.4 x 7.6	1.58	Kodak 2415		Y	0	9/S	10	Garradd,G	
22.783	850921	0.180	2.8		11.4 x 7.6	1.00	Kodak 2415		Y	0	10/S	10	Garradd,G	

NOTE A Start time uncertain.

DATE: 23 FEB 1986

DATE: 23 FEB 1986

## 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	
23.113	816688	3.5	M	4B	4.0	7	1.2	280	0.08	B		11	4.8	Y	1	Fleet,R.W	A	
23.117	816689	3.4	M	4B		7				EY			4.8	Y	1	Fleet,R.W	B	
23.128	816690	3.0	M	4B					0.08	B		11	4.8	Y	1	Fleet,R.W	C	
23.131	816691	3.4	M	4B		9	0.5	280	0.04	B		12	4.2	N	1	Henshaw,C	D	
23.139	816692	3.3	M	4B					0.08	B		11		T	Y	1	Fleet,R.W	C
23.39	816693	2.6	B	INW BAA						EY						Green,D.W.E		
23.40	816694	2.7	B	INW BAA	6	8	3		0.035	B		7				Green,D.W.E	E	
23.56	816695	2.4	M	4B, BSC	3.5	8	1		0.080	B		20	3.0MTC	Y	6	Morris,C.S	F	
23.5660	816696	2.7	M	4B	6	6	1.00	260	0.032	B		8	4.5	Y	9	Cook,A.J	G	
23.57	816697	2.3	M	4B, BSC					0.050	B		10	3.0MTC	Y	6	Morris,C.S	H	
23.57	816698								0.256	N	4.5	67	3.0MTC	Y	6	Morris,C.S	I	
23.5743	816699	3.0	S	DCS	3	7	0.67	260	0.080	B		20	3.8		1	Machholz,D	J	
23.5778	816700	2.9	S	DCS	4	8	0.42	260	0.130	R	7.1	27	3.8		1	Machholz,D	K	
23.5792	816701	2.7	S	DCS	10	5				EY			3.8		1	Machholz,D	L	
23.764	816702	4.0	S	4B	4		0.25	290	0.05	B		7	4.2M	N	1	Bryant,K	M	
23.793	816703		B	4B	20		1	260	0.05	B		10			1	Tregaskis,T.B	N	
23.85	816704	3.8	M	4B					0.05	B		7	4.0TM	Y	1	Suzuki,K		
23.85	816705		4B		1.6	6	0.2		0.21	N	5.0	88	4.0TM	Y	1	Suzuki,K	O	
23.855	816706	3.3	M	4B	3	8	1	285	0.08	B		11	4	T	N	1	Mitsuma,S	P
23.856	816707	3.6	S	4B	2.2	8	0.7	285	0.05	B		7	1.5T	Y	1	Kanai,K		
23.856	816708	3.8	B	4B	2.2	8	0.7	285	0.05	B		7	1.5T	Y	1	Kanai,K		
23.86	816709	3.5		4B						EY			4.1	N		Clark,M.L		
23.86	816710	3.6	M	SAO	4	8	0.4	270	0.065	R	8	16	2.5TM	Y	7	Nakamura,A		
23.87	816711	3.6	S	4B	2	8	2	287	0.125	R	5	32	4.1	N		Clark,M.L		
23.875	816712	4.0	S	4B	5	6	0.33	260	0.07	B		10	4.0	Y	1	Kobayashi,J		

NOTE A Fan to 0.4 deg. in PA 323. Comparison star Alpha 2 Capricorni.

NOTE B Hint of tail. Comparison star Alpha 2 Capricorni.

NOTE C Comparison star Epsilon Aquarii.

NOTE D Twilight. PA uncertain.

NOTE E Coma diameter approximate. Tail length is lower limit.

NOTE F Differential extinction correction = -0.6 mag. was applied. Fan-shaped tail with material between PA 270-290. Northernmost tail slightly curved toward the north.

NOTE G In twilight.

NOTE H Differential extinction correction = -0.6 mag. was applied.

NOTE I Central condensation was elongated down the dust tail. Southern side of coma had a bulge of material hooking back into the tail.

NOTE J At the time of observation the comet's altitude was +6 deg. and the sun's altitude was -13 deg. 98% moon 164 degrees away.

NOTE K Last obs. when comet alt. = 11 deg., sun = -6 deg.

NOTE L At the time of observation the comet's altitude was +6 deg. and the sun's altitude was -12 deg. 98% moon 164 degrees away.

NOTE M Last obs. when comet alt. = 12 deg., sun = -5 deg.

NOTE N At the time of observation the comet's altitude was +7 deg. and the sun's altitude was -11 deg. 98% moon 164 degrees away.

NOTE O Last obs. when comet alt. = 9 deg., sun = -7 deg.

NOTE P DC = strong.

NOTE N Coma mag. approx. 4 or brighter. Coma diameter approximate; tail broad, length and PA approximate. Brief sighting. Not seen by naked eye. Low, clear, bright moon. (Observer gave limit as approximately 8. Ed.)

NOTE O Coma dia. use meter.

NOTE P m2 = 5.3.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
23.113	830852	4	0.08	B		11		4.8	1	Fleet,R.W	A
23.306	830853	2.4	0.03	R	10	30	240	5	1	Vargas B.,A.G	B
23.566	830854	3	0.032	B		8	20	4.5	9	Cook,A.J	C

NOTE A Leading edge at PA 260. Main tail at PA 280. Fan tail at PA 323. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B The tail length is about 2.5 deg. approx. at about PA 300 approx.; DC 8 approx.; coma diameter: 3' approx. estimate magnitude: 4 approx. [sic]

NOTE C Drawn in twilight.

DATE: 24 FEB 1986

DATE: 24 FEB 1986

## 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
24.118	816713				4.0	8	0.8	278	0.08	B		11	3.8M	Y	1	Fleet,R.W	
24.120	816714	3.6	M	4B		7				EY			3.8M	Y	1	Fleet,R.W	A
24.141	816715	3.5	M	4B					0.08	B		11	MT	Y	1	Fleet,R.W	B
24.38	816716	2.5:	B	IFW BAA					0.035	B						Green,D.W.E	
24.5750	816717	3.2	S	DCS	3	7	0.37	263	0.080	B		20	3.0		3	Machholz,D	C
24.79	816718	2.8	S	4B			2.5			EY			4.5M	N	1	Lovejoy,T	D
24.845	816719	3.5	M	4B	2.7	8	1	275	0.08	B		11	4	Y	1	Mitsuma,S	E
24.847	816720	3.5	B	4B	7	6	0.75		0.05	B		7	4.5	Y	1	Hayashi,H	F
24.85	816721	3.4		4B						EY			4.0	N		Clark,M.L	
24.852	816722	3.6	B	4B	3.5	7	1.5	280	0.05	B		7	1.5T	Y	1	Kanai,K	
24.852	816723	3.5	S	4B	3.5	7	1.5	280	0.05	B		7	1.5T	Y	1	Kanai,K	
24.86	816724	3.6	S	4B	2.5	8	1.75	287	0.125	R	5	32	4.0	N		Clark,M.L	
24.86	816725	3.6	S	AAVSO	3	7	0.33	270	0.07	B		10	3.0TM	Y	1	Hayashi,A	
24.868	816726	3.6	S	4B	6	6	1.50	250	0.07	B		10	5.5	Y	1	Kobayashi,J	

NOTE A Comparison star Alpha 2 Capricorni.

NOTE B Comparison star Epsilon Aquarii.

NOTE C At the time of observation the comet's altitude was +7 deg. and the sun's altitude was -12 deg. 99% moon 153 degrees away.

NOTE D Moonlight.

NOTE E m2 = 5.8.

NOTE F Moon.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
24.79	830855	0.05	0.20	N	6.3	250			5	Lovejoy,T	A
24.790	830856		0.120	B		20			1	McNaught,R.H	B

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Two drawings supplied. (Duration not indicated. Time of observations assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Fyp	Gdng	Id/Typ	Site	Observer(s)
24.355	850922	1.710	5.7		1.2 x 0.8	2.00	3M 1000	1000/	N		19/P		Pizzi,R
24.562	850923	1.830	6	0.305	1.1 x 0.8	0.75	Fujichrome	1600/	N		002/P	3	Royer,R

DATE: 25 FEB 1986

DATE: 25 FEB 1986

## 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	
25.112	816727	3.0	S	4B	4.0	8	1.25	278	0.13	R	4	21	5.5	Y	1	Campos,J	A	
25.194	816728	3.6	M	4B		8			0.07	B		20		Y	1	Tanti,T	B	
25.30	816729	5.2	S	4B					0.08	B		20	2.0		5	Shanklin,J.D		
25.39	816730	2.9	B	IHW BAA	6	8			0.035	B		7				Green,D.W.E	C	
25.39	816731	3.0	B	IHW BAA	6	8	2		0.080	B		20				Green,D.W.E	D	
25.40	816732	2.8	B	IHW BAA						EY						Green,D.W.E		
25.408	816733	3.0	B	122	6	4	4	1.67	240	0.05	B	7	5.3	Y	1	Lairret,R		
25.458	816734	3.2	S	4B					0.035	B		7	3	MT	N	3	Morrison,W	E
25.52	816735	3.0	B	4B				1.3	270	0.040	B	8	3.5	Y	1	Keen,R	F	
25.53	816736	3.0	V	4B						EY			3.5	Y	1	Keen,R	F	
25.56	816737	2.9:	B	4B				0.5	275		EY		4	TM	Y	2	Hale,A	G
25.56	816738	3.0:	M	4B				1	275	0.05	B	10	4	TM	Y	2	Hale,A	G
25.56	816739	2.6	M	4B, BSC	4.7	8	3	275	0.050	B		10	3.5MTC	Y	6	Morris,C.S	H	
25.57	816740								0.200	SC	10.0	160	3.5MTC	Y	6	Morris,C.S	I	
25.70	816741	3.6	S	4B					0.023	B		3	4	Y		Jones,A	J	
25.70	816742							0.5	280	0.080	B	11				Jones,A	K	
25.70	816743				2.5	7			0.317	N	5	86				Jones,A	L	
25.760	816744	3.9	S	4B	5			0.42	290	0.05	B	7	4.2M	N	1	Bryant,K	M	
25.76	816745	2.9	S	4B				2.0			EY		4.5M	N	1	Lovejoy,T		
25.782	816746	3.1	B	4B	1			1.8	265	0.05	B	10		Y	1	Tregaskis,T.B	N	
25.787	816747			4B	1.9	6			0.152	N	8	120		Y	1	Tregaskis,T.B	O	
25.833	816748	3.4	M	4B	5.8	3.3		1.3		N	10	25	5.0	Y	1	Ichikawa,K	P	
25.844	816749	3.5	M	4B	3	8	1.5	275	0.08	B		11	4	T	Y	1	Mitsuma,S	Q
25.85	816750	3.5	S	AAVSO	3	7	0.5	270	0.08	B		15	2.5TM	Y	1	Hayashi,A		
25.85	816751	3.6	M	SAO		8			0.065	R	8	16	3.0TM	Y	7	Nakamura,A	R	
25.851	816752	3.5	S	4B	3.5	8	1.5	285	0.05	B		7	1.5T	Y	1	Kasai,K		
25.851	816753	3.5	B	4B	3.5	8	1.5	285	0.05	B		7	1.5T	Y	1	Kasai,K		
25.851	816754	4.0	B	4B					0.035	B		7		Y	1	Okada,M		
25.86	816755	4.0	S		3	6	0.33	260	0.080	B		11	4.0	Y	1	Akita,I	S	

NOTE A Tail 12' at widest; central cond. coma approx. 1.0'.

NOTE B Moon. Clouds. Twilight.

NOTE C Coma diameter approximate.

NOTE D Coma diameter approximate. Tail length is lower limit.

NOTE E Comet altitude 5 deg., comparison stars' altitudes 10 deg., comet's uncorrected magnitude is 3.9.

NOTE F Twilight. Extinction correction applied.

NOTE G Observation affected by twilight and full moon. Despite this, comet was clearly visible to the naked eye.

NOTE H Differential extinction correction = -0.5 mag. was applied. Yale BSC also used. Dust tail in PA 290 was significantly curved

toward the north about two degrees from the head. PA for the last two degrees was 310.

NOTE I Central condensation offset toward the north. There was a bulge of material on the south side of the coma wrapping into the

tail. This feature was very faint.

NOTE J Fairly clear. Comet altitude 9 degree-10 degree.

NOTE K Striations in tail. Moon 16.7d.

NOTE L Comet visible to unaided eye.

NOTE M DC = strong.

NOTE N PA approximate. Just visible to naked eye but low and hazy cloud in dawn, bright moon. [sic] (Observer gave limit as

approximately 7.5. Ed.)

NOTE O 15 arc sec. nucleus. Just visible to naked eye but low and hazy cloud in bright moon. [sic]

NOTE P PA = N.

NOTE Q m2 = 5.5.

NOTE R Tail length = yes.

NOTE S Moon age 16.7. (Translated by IHW staff. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
25.760	830857	0.2	0.20	N	6.3	50			5	Lovejoy,T	A
25.767	830858									McNaught,R.H	B
25.787	830859	0.09	0.152	N	8	120	1		1	Tregaskis,T.B	C

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Nucleus in center of envelope's latus rectum. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C Central condensation approximately 15" diam. No tail. DC 6. Limit approximately mag. 11.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
25.559	850924	1.830	6	0.305	1.1 x 0.8	1.00	Kodak 2415		Y		003/P		Royer,R
25.561	850925	1.830	6	0.305	1.1 x 0.8	2.00	Kodak 2415		Y		004/P		Royer,R

DATE: 26 FEB 1986

DATE: 26 FEB 1986

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
26.04	816756	4.3	B	M	2				0.05	B		7					Konstantinov,S
26.115	816757	3.4	B	4B	10	5	2	270	0.04	B		8		Y	1	Morrisby,A	A
26.188	816758	4.1	M	4B	8	8		275	0.089	R	5.5	18		N	1	Ventura,F	B
26.198	816759	3.8	M	4B		8			0.07	B		20		Y	1	Tanti,T	C
26.205	816760	3.4	S	122	3.0	8	0.77	265	0.08	B		15	2.5MT	Y	2	Haver,R	D
26.333	816761	3.2	B	122		8	0.8	262	0.05	B		20	3.0	Y	8	da Silva,L.A.L	E
26.337	816762	3.3	B	122	3	4	0.33	255	0.05	B		7	4.5C	Y	2	Martinez,C	F
26.340	816763	3.6	S	122	3	4	0.33	255	0.05	B		7	4.5C	Y	2	Martinez,C	G
26.365	816764	3.3	B	122	3	4	0.50	260	0.05	B		7	4.0TC	Y	2	Martinez,C	
26.368	816765	3.6	S	122	3	4	0.50	260	0.05	B		7	4.0TC	Y	2	Martinez,C	
26.39	816766	2.5	B	12W BAA		8	2			BY		7				Green,D.W.E	H
26.40	816767	2.8	B	12W BAA	6	8	3		0.050	B		20				Green,D.W.E	I
26.40	816768	3.0	B	12W BAA		8	2		0.080	B		10				Green,D.W.E	J
26.417	816769	3.4		AAVSO		5	1		0.050	B		10				O'Heara,S.J	
26.44	816770	3.2	B	4B	5	8	1.0	280	0.050	B		10	5.5	Y	1	Bortle,J.E	K
26.44	816771				3.5	8			0.120	B		20				Bortle,J.E	L
26.453	816772	3.2	S	4B					0.035	B		7	3.5MT	N	3	Morrison,W	M
26.53	816773	3.2	B	4B					0.040	B		8	4.0	Y	1	Keen,R	N
26.53	816774	2.9	V	4B						BY		4	4.0	Y	1	Keen,R	O
26.5757	816775	3.1	S	DCS	3	7	0.33	256	0.080	B		20	3.0		3	Machholz,D	
26.760	816776	3.0	S	4B			1.2		0.05	B		7	5.0M	Y	17	Garradd,G	
26.76	816777	2.7	S	4B			3.0			BY		5	5.0M	Y	1	Lovejoy,T	
26.76	816778	3.2		4B						BY		4		Y	1	Seargent,D	
26.76	816779					8	1	280	0.08	B		15				Seargent,D	P
26.765	816780		B	4B					0.05	B		10		N	1	Tregaskis,T.B	Q
26.767	816781	3.9	S	4B	5		0.42	290	0.05	B		7	4.2M	N	1	Bryant,K	R
26.767	816782					8			0.31	N	5.4	129	5.0M	Y	17	Garradd,G	
26.789	816783	3.1	B	4B			1.5	265	0.05	B		10		Y	1	Tregaskis,T.B	S

NOTE A Some low mist.

NOTE B Coma diameter approximate. Strong moonlight.

NOTE C Moon. Clouds. Twilight.

NOTE D 0.77 deg. tail type I (?). 0.15 deg. second tail fan-shaped.

NOTE E Full moon.

NOTE F Cirrus.

NOTE G Cloudy.

NOTE H Tail length approximate.

NOTE I Coma diameter approximate. Tail length is lower limit.

NOTE J Tail length is lower limit.

NOTE K Extinction correction applied.

NOTE L Brilliant, sharply condensed center surrounded by a very diffuse, faint outer envelope. Coma condenses steadily to a central, stellar point. At 1046 UT this stellar feature is estimated at about 6.2 magnitude. Comet is last glimpsed at 1107 UT with sunrise at 1135 UT (20x120 B).

NOTE M Comet altitude 4 deg., comparison stars' altitudes 9 deg., comet's uncorrected magnitude is 4.0.

NOTE N Twilight. Extinction correction applied.

NOTE O At the time of observation, the comet's altitude was +8 deg. and the sun's altitude was -12 deg. 95% moon 125 degrees away.

NOTE P Bright sector on sunward side of nucleus. Observation also made with 0.152 f/5 Newtonian at 76x. Moonlight.

NOTE Q Broad single tail of about 1 deg. Clear, bright moon. Occasionally glimpsed with naked eye.

NOTE R DC = strong.

NOTE S Single tail of about 1.5 deg., PA approximate. Clear, bright moon. Seen as definite faint streak in naked eye. (Observer gave limit as approximately 7. Ed.)

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
26.782	830860	0.2	0.20	N	6.3	140			5	Lovejoy,T	A
26.782	830861					76	43			McNaught,R.H	B

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B (Drawings at 1825, 1835, and 1908 UT submitted. Durations not indicated. Time of observations are assumed to be start times. Ed.)

DATE: 27 FEB 1986

DATE: 27 FEB 1986

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
27.125	816784	3.3	B	4B	10	5	3	270	0.04	B		8		Y	1	Morrisby,A	A
27.192	816785	2.5	B	4B	15	7			0.07	B		20	6.5MT	N	1	Fillimon,E	B
27.351	816786	3.3	B	122	3	4	0.50	265	0.05	B		7	4.5C	Y	2	Martinez,C	C
27.354	816787	3.3		122						EY			4.5C	Y	2	Martinez,C	
27.451	816788	3.3	S	4B	3		0.30	270	0.035	B		7	3.5MT	N	3	Morrison,W	D
27.5701	816789	3.4	S	DCS	3	8	0.33	267	0.080	B		20	3.0		3	Machholz,D	E
27.70	816790	3.5	S	4B					0.023	B		3	4			Jones,A	F
27.70	816791						0.6	275	0.080	B		11				Jones,A	G
27.70	816792					7			0.317	N	5	80				Jones,A	H
27.76	816793	2.9	S	4B	4.5		3.0			EY			5.0M	Y	1	Lovejoy,T	
27.771	816794	2.8	S	4B			1		0.05	B		7	5.0M	Y	8	Garradd,G	
27.774	816795								0.31	N	5.4	129	5.0M	Y	8	Garradd,G	I
27.847	816796	3.1	M	4B	6	6	1.2	260	0.030	B		8	4.0M	Y	1	Kato,T	
27.85	816797	3.5	S		4	6	2.0	260	0.080	B		11	4.5	Y	1	Akita,I	J
27.851	816798				7	6	0.5	260	0.10	N	10	8	4.0M	Y	1	Kato,T	
27.86	816799	3.2		4B						EY			4.3	N		Clark,M.L	
27.86	816800	3.4	S	4B	3	7	2	286	0.076	N	8	15	4.3	N		Clark,M.L	
27.86	816801	3.0	S	4B		8	1.7	270	0.030	B		8	6.2	Y		Pearce,A	
27.86	816802	2.8	S			6				EY			6.2	Y		Pearce,A	
27.86	816803	3.4	B		5	8	0.33	260	0.05	B		10	3.6	Y	1	Uda,K	

NOTE A The tail was a long thin spike (plasma tail) with perhaps 1 deg. or 2 deg. of a dust tail, possibly curving slightly towards the north.

NOTE B Extremely good horizon view. (Translated by INW staff. Ed.)

NOTE C With refractor 6 cm aperture, F/D = 15 at 60x, DC = 7.

NOTE D Comet altitude 5 deg., comparison stars' altitudes 10 deg., comet's uncorrected magnitude is 4.0.

NOTE E At the time of observation, the comet's altitude was +8 deg. and the sun's altitude was -13 deg. 89% moon 110 degrees away.

NOTE F Moon 18.7 d.

NOTE G PA 275 brighter than rest of paraboloid coma/tail bounded by PAs given.

NOTE H Bright non-stellar nucleus in paraboloid coma/tail.

NOTE I Elongated central condensation 8"x6", 2 broad jets 5" long in PA 100 and PA 285.

NOTE J Moon age 18.7. (Translated by INW staff. Ed.)

SUB-NETWORK: DRAWING

Date(UT)	ACON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
27.763	830862		0.120	B		20				McNaught,R.H	A
27.788	830863		0.20	N	6.3	50,250			5	Lovejoy,T	B

NOTE A No jets. At 1752 UT, 3/4 deg. tail in 20x120 B. (Two drawings submitted. Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B (Duration not indicated. Time of observation is assumed to be start time. Two drawings supplied, one each at magnification of 50 and scale 0.2 arc min./mm and magnification of 250 and scale 0.05 arc min./mm. Ed.)

DATE: 28 FEB 1986

DATE: 28 FEB 1986

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
28.03	816804	4.1	B	M	1				0.05	B		7				Konstantinov,S	
28.122	816805	3.0	B	4B	30		7	2	0.065	B		20	6.0M	Y	1	McBain,J	A
28.427	816806	4.3	M	4B			7	0.5	0.05	B		12	4.5MT	Y	3	Knight,S	B
28.427	816807	3.5		AAVSO				5	0.050	B		10				O'Meara,S.J	
28.434	816808	3.1	B	4B			7	2	0.035	B		7	4.2	Y	1	Stephan,C	C
28.438	816809	2.9	M	4B	4		6	2.0	0.063	B		9	3.1MT	Y		DeYoung,J.A	
28.44	816810	2.8	B	4B	3		8	1.5	0.050	B		10	5.5	Y	1	Bortle,J.E	D
28.52	816811	2.8	B	4B	5		8	1.8	0.040	B		8	5.0	Y	1	Keen,R	E
28.52	816812	2.8	V	4B						EY			5.0	Y	1	Keen,R	E
28.70	816813							1	0.080	B		11	4.8	Y		Jones,A	F
28.70	816814	3.4	S	4B					0.023	B		3	4.8	Y		Jones,A	G
28.70	816815						7		0.317	N	5	86				Jones,A	H
28.76	816816	2.6		4B					EY					Y	1	Seargent,D	
28.77	816817	3.0	S	4B	5.0			3.5	EY				5.0M	Y	1	Lovejoy,T	
28.771	816818	2.7	S	4B				2.0	0.05	B		7	5.0M	Y	8	Garradd,G	
28.774	816819						8		0.31	N	5.4	129	5.0M	Y	8	Garradd,G	
28.844	816820	3.5	B	4B	5		7	1.5	0.05	B				Y	1	Hayashi,H	I
28.85	816821	3.3	S		5		6	2.0	0.080	B		11	5.0	Y	1	Akita,I	J
28.85	816822	3.6	M	SAO	4		7		0.065	R	8	16	3.0TM	Y	7	Nakamura,A	K
28.85	816823	3.5	M	4B			6	2.0	0.05	B		7	4.5TM	Y	2	Suzuki,K	
28.854	816824	3.7	B	4B				1	0.035	B				Y	1	Okada,M	
28.856	816825	3.2	M	4B	6		7	1.2	0.030	B		8	4.0M	Y	1	Kato,T	
28.875	816826	3.8	S	4B	12		6	0.50	0.07	B		10	3.0	Y	1	Kobayashi,J	

NOTE A Moonlight interfering; mag. 6 star in coma.

NOTE B Bright moon. Tail length approximate.

NOTE C Bright moon in west. Ground fog. Clouds approaching from west. The mag. is reduced for atmospheric extinction.

NOTE D Extinction correction applied. With 20x120 binoculars: very sharply condensed coma with diffuse edges; center almost stellar in appearance. Outline of coma parabolic. Coma's edges unusually vague for so bright an object. With 20 cm Schmidt-Cassegrain at 71x: dense central condensation occupies about 1/4 of coma's full diameter and is clearly separated from surrounding coma. As twilight advances condensation shrinks and becomes steadily more stellar. Comet last glimpsed with 20 cm S-C at 1105 UT, sunrise 1132 UT.

NOTE E Extinction correction applied.

NOTE F Broad tail bounded by PAs 260, 275.

NOTE G Moon 19.7 d.

NOTE H Bright nucleus paraboloid coma/tail.

NOTE I Moon, twilight.

NOTE J Moon age 19.7. (Translated by IHW staff. Ed.)

NOTE K Tail length = yes.

SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
28.424	830864	1	0.156	N	8	52	10	5	3	Cuthill,D.D	A
28.441	830865	0.83	0.152	N	8	38		5	2	Cuthill,L	B
28.753	830866		0.120	B		20				McNaught,R.H	C
28.770	830867						27			McNaught,R.H	D
28.788	830868	0.2	0.20	N	6.3	140,250			5	Lovejoy,T	C

NOTE A A prominent bow-shock is brighter and longer on the N side of the coma. [sic] The leading edge of the bow is very well defined. A vertex distance was estimated to be 20" from the central condensation. Inner coma is large and round, &gt;15". Fine streams in the wide tail were too difficult to draw accurately. Semi-latus rectums are about 2.5'.

NOTE B Tail at PA 250-290. Gas tail at PA 270. Coma DC = 9. Parabolic hood axis of hood PA 90 deg. A parabolic hood is clearly evident. The inner coma is large and stellar. Most of tail is visible between 250 deg. and 290 deg. PA. A prominent gas tail is at PA 270 deg. Semi latus rectum 2.5'. Vertex distance - 1.5'. Magnitude estimated to be 3.3 using 10x50 binoculars (Morris method).

NOTE C (Duration not indicated. Time of observation is assumed to be start time Ed.)

NOTE D 1836 UT, almost (illegible, Ed.) stellar. (Drawings at 26x and unspecified magnification submitted. Ed.)

DATE: 1 MAR 1986

DATE: 1 MAR 1986

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	
1.05	816827	3.9	B	M	2				0.05	B		7				Konstantinov,S		
1.083	816828	3.8	M	4B	4.3	7	2.3	269	0.08	B		11	3.8M	Y	1	Fleet,R.W		
1.111	816829	3.4	M	4B		6	1.1	268		EY			4.0M	Y	1	Fleet,R.W		
1.118	816830	3.0	B	4B	30	7	2.33	275	0.065	B		20	4.8	Y	1	McBain,J	A	
1.129	816831	3.6	M	4B	2	8	2.33	270	0.04	B		12	4.1	N	1	Henshaw,C	B	
1.26	816832	3.9	S	4B					0.08	B		20	5.0		5	Shanklin,J.D		
1.28	816833	3.7	S	4B						EY			5.0		5	Shanklin,J.D		
1.35	816834	2.9	M	4B, BSC	4.7	8	5	270	0.050	B		10	4.5M	Y	19	Morris,C.S	C	
1.35	816835	2.9	M	4B, BSC	4.7	8			0.070	B		16	4.5M	Y	19	Morris,C.S	D	
1.352	816836	3.0	B	122		6	1.0	269	0.05	B		20	2.5	Y	8	da Silva,L.A.L	E	
1.36	816837	2.8	B	4B, BSC		4	5	270		EY			4.5M	Y	19	Morris,C.S		
1.424	816838	3.3	B	122		4	2.5	247	0.05	B		10	3.1	Y	2	Harris,L.A	F	
1.43	816839	2.9	B	IHW BAA	4	8			0.035	B		7				Green,D.W.E	G	
1.43	816840	3.1	B	IHW BAA	4	8			0.080	B		20				Green,D.W.E	G	
1.43	816841	3.2	B	4B	4	7	1.7	270	0.050	B		10	5.5	Y	1	Bortle,J.E	H	
1.43	816842				4.0	7			0.120	B		20				Bortle,J.E	I	
1.435	816843	2.8	M	4B	5	6	2.5	278	0.063	B		9	3.1M	Y		DeYoung,J.A		
1.438	816844	4.2							0.050	B		7				Minton,R.B	J	
1.469	816845	4.0	B	4B	2.7	1	0.7	277	0.05	B		7	3.1MTC	Y	1	Dodd,W.J	K	
1.542	816846	2.8	S	4B	38	8	2	256	0.035	B		7	3.5CTM	N	1	Gronck,J.D	L	
1.740	816847	3.3	B	4B	3	8	1	275	0.05	B		7	3.1	Y	3	Bembrick,C	M	
1.76	816848	2.7		4B						EY						Seargent,D		
1.76	816849					8	3	280	0.08	B		15		Y	1	Seargent,D	N	
1.761	816850	2.9	S	4B			3.2		0.05	B		7	5.5M	Y	8	Garradd,G		
1.77	816851	2.8	S	4B			6.0			EY			5.3M	Y	1	Lovejoy,T		
1.83	816852	4.2	M	4B	3	8	0.17	315	0.080	B		11	3	MT	N	1	Watanabe,N	O
1.84	816853	3.6	M	SAO	5.5	8	1.0	275	0.065	R	8	16	4.0M	Y	1	Nakamura,A		
1.84	816854	3.5	M	4B			3.0		0.05	B		7	4.5M	Y	1	Suzuki,K		
1.84	816855			4B	2.6	6			0.21	N	5.0	88	4.5M	Y	1	Suzuki,K	P	
1.86	816856	3.0	S	4B		8	3.0	268	0.030	B		8	5.8	Y		Pearce,A		
1.86	816857	2.8	B	4B		6	2.8			EY			5.8	Y		Pearce,A		
1.865	816858	3.4	M	4B					0.10	B		8	3.0TM	N	1	Kato,T		

NOTE A Comet brighter than Beta Cap, moonlight.

NOTE B Moon, twilight. PA uncertain.

NOTE C Coma was parabolic and had a bright stellar condensation (m2 = 4.0).

NOTE D Coma was distinctly unsymmetrical with more coma on south side. A bright swath of material, perhaps 10' in length, came out of the north side of the condensation and was directed back into the tail. Comet was pearl white.

NOTE E Moonlight and twilight.

NOTE F Comparison stars: Beta Capricorni (3.1) and Rho Capricorni (3.8 [sic]). Estimate 3.1 (1) 3.27 (9) 4.8. Moon in (observer's notes difficult to translate, Ed.) and smooth clouds around the comet. (Translated by IHW staff. Ed.)

NOTE G Coma diameter approximate.

NOTE H Extinction correction applied.

NOTE I Parabolic coma consisting of a bright, dense condensation surrounded by a fairly faint, parabolic envelope which lacks well defined edges. As dawn advances coma's center begins to show a star-like nucleus at the center of the condensation. Condensation is at the focus of the parabolic envelope with little material sunward of it. Tail's southern side (edge) is probably a little brighter than the northern.

NOTE J Out-of-focus method. Comet was about 1 mag. fainter than Beta Cap (Beta Cap = 3.2).

NOTE K Only used 2 comparison stars for magnitude estimate. Tail length and PA measured from sketch on star chart.

NOTE L First naked eye sighting &amp; obvious tail - exc. see.

NOTE M South edge of tail sharp and distinct; north edge diffuse and concave to north.

NOTE N m2 = 5. Tail length approximate.

NOTE O Tail length is lower limit.

NOTE P Meter. (Coma diameter. Ed.)

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
1.428	830869	0.8	0.152	N	8	52	30	5.5	3	Cuthill,D.D	A
1.448	830870	0.83	0.152	N	8	38		5.5	2	Cuthill,L	B
1.766	830871						25			McNaught,R.H	C
1.782	830872	0.15	0.20	N	6.3	140,250			5	Lovejoy,T	D

NOTE A The parabolic hood or bow shock is brightest on the NE side of the nucleus (PA 55). The bow also seems to have narrowed since Feb. 28.

NOTE B Tail at PA 250-290. Gas tail at PA 270. Coma DC = 9. Axis of parabolic hood at PA 90. The parabolic hood is considerably brighter on the north edge and is extending farther west as opposed to the south edge. Also the outer coma is brighter on the northern side. Magnitude estimated to be 3.3 using 10x50 binoculars (Morris method). Semi latus rectum - 2.5'. Vertex distance - 1.5'.

NOTE C Inner blue/green with "nucleus" quite sharp and similar color. Perhaps a trace of yellow. Previous night it was yellow.

NOTE D (Duration not indicated. Time of observation is assumed to be start time. Ed.)



DATE: 2 MAR 1986

DATE: 2 MAR 1986

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
2.04	816859	4.0	B	M	2		0.2		0.05	B		7				Konstantinov,S	
2.104	816860	3.8	M	4B	4.0	7	2.7	267	0.08	B		11	4.2M	Y	1	Fleet,R.W	
2.108	816861	3.6	M	4B	2	8	2.33	270	0.04	B		12	4.1	N	1	Henshaw,C	A
2.110	816862	3.2	M	4B		6	1.9	273		EY			4.2M	Y	1	Fleet,R.W	
2.243	816863	4		4B			1		0.08	B		11			3	Kemble,L.J	B
2.27	816864	4.1	S	4B					0.08	B		20	2.0		5	Shanklin,J.D	C
2.319	816865	3.3	B	4B	5	3	1	280	0.06	R	12	56	5.3	Y	1	Onofre D.,D	
2.37	816866	3.5	B	M			5		0.04	B		7				Kiselev,N	
2.41	816867	3.5	S	4B	30	7	2	250	0.108	N	4	17	4.0	N	1	Harrington,P	D
2.43	816868				2.5	7			0.120	B		20				Bortle,J.E	E
2.43	816869	2.7	B	IHW BAA		8			0.035	B		7				Green,D.W.E	
2.43	816870	3.1	B	4B	3	7	1.5	273	0.050	B		10	5.5	Y	1	Bortle,J.E	F
2.442	816871	2.7	M	4B	5	6	1.0	284	0.05	B		7	3.1	Y	1	DeYoung,J.A	G
2.458	816872	3.8	M	4B			4.0	270	0.050	B		10	3.1	Y	1	Smith,A	H
2.464	816873	3.4	M	4B		9		270	0.076	R	15	63	3.1	Y	1	Smith,A	H
2.51	816874	2.8	B	4B	5	8	1.8	270	0.040	B		8	5.5	Y	1	Keen,R	F
2.51	816875	2.8	V	4B			1.3	270		EY		5.5	Y	1	Keen,R	F	
2.55	816876	2.9	B	4B			2	270		EY		5.5M	Y	2	Hale,A	I	
2.56	816877	3.0	M	4B			2	270	0.05	B		10	5.5M	Y	2	Hale,A	I
2.5743	816878	3.4	S	DCS	3	8	0.82	262	0.080	B		20	3.2		3	Machholz,D	J
2.5743	816879	3.8	B	DCS	3	8	0.82	262	0.080	B		20	3.2		3	Machholz,D	J
2.753	816880	2.8	S	4B			4		0.05	B		7	5.5M	Y	17	Garradd,G	K
2.757	816881		S			8			0.31	N	5.4	129				Garradd,G	
2.76	816882	2.7	S	4B	5.0		5.5			EY		5.3M	Y	1	Lovejoy,T		
2.764	816883	3.9	B	4B			2.5			EY						Parkinson,M	L
2.771	816884	3.8	S	4B	5		1.3	270	0.05	B		7	5.3M	N	1	Bryant,K	M
2.781	816885	3.1	B	4B		8	2.5	265	0.05	B		10			1	Tregaskis,T.B	N
2.83	816886	3.4	S	4B		7	1		0.08	B		11	2.0	N	1	Momose,M	O
2.837	816887	3.4	M	4B	3.0	8	3	275	0.08	B		11	4	T	Y	Mitsuma,S	P
2.84	816888	3.6	S	AAVSO	3	7	1.5		0.08	B		15	4.0M	Y	1	Hayashi,A	Q
2.840	816889	3.4	B	4B	5	7	2		0.05	B		7	4.5	Y	1	Hayashi,H	R
2.844	816890	3.3	B	4B	4.1	8	2.2	265	0.05	B		7	2.5T	Y	1	Kanai,K	
2.847	816891	3.3	M	4B	10.2	6	1.5	188	0.1	N	10	40	4.5	Y	1	Ichikawa,K	
2.85	816892	3.1	B		12	7	0.42	260	0.05	B		10	3.1	Y	1	Uda,K	

NOTE A Moon.

NOTE B Comet seen one and one half hours and followed for half hour before sunrise; tail very faint and disappeared rapidly with twilight. My 54th observation, my first post-perihelion. My last pre-perihelion observation was with binocs. at sunset twilight, 26 Jan. 1986.

NOTE C Cloud.

NOTE D Heavy twilight.

NOTE E With 20x120 binoculars: parabolic coma with faint, diffuse edges, containing an intense, bright condensation. Condensation continues to be far more brilliant than surrounding coma. Tail has equally bright edges, center of tail slightly brighter than either but no distinct tail spine.

NOTE F Extinction correction applied.

NOTE G Haze interference.

NOTE H Moonlight low altitude.

NOTE I Probably some interference from 3rd quarter moon 50 deg. away. There was also some cirrus in the sky, which probably had a negligible effect on the observation. In 10x50 binoculars the tail split halfway down its length, with the southern fork being straighter and brighter.

NOTE J At the time of observation, the comet's altitude was +11 deg. and the sun's altitude was -11 deg. 63% moon 66 degrees away.

NOTE K 4 deg. tail is straight gas; 1.5 deg. tail is curved dust.

NOTE L Difficult to make magnitude estimate. Tail length approximate.

NOTE M DC = strong.

NOTE N PA approximate. Clear, third quarter moon. Tail slightly shorter to naked eye.

NOTE O Saw moon. (Translated by IHW staff. Ed.)

NOTE P m2 = 5.6.

NOTE Q PA 255 to 275.

NOTE R Moon.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
2.104	830873	4	0.08	B		11		4.2	1	Fleet,R.W	A
2.396	830874	1.1	0.127	SC	10		10	6	1	Cuthill,D.D	B
2.485	830875		0.050	B		10		4.0		Williams,D.J	C
2.755	830876						5			McNaught,R.E	D
2.767	830877	0.15	0.20	N	6.3	250			5	Lovejoy,T	E
2.778	830878		0.120	B		20				McNaught,R.E	

NOTE A Main tail at PA 267. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B This is a drawing of a photo taken on the 5" Schm.-Cass. for 8 min. (Fujichrome 1600) and a telecompressor giving overall f/5 and yielding a field of 100' at prime focus. The SE boundary of the outer hood is very clean and well defined.

NOTE C I recovered Halley! It was bright, even though it was hanging in the morning twilight. I couldn't see a tail because of the approaching sunrise. The nucleus is like a fuzzy star. I was suprised to find Halley this morning because I overslept. I figured the sky would be too bright. (Duration not indicated. Time of observation is start time. Ed.)

NOTE D Nucleus more diffuse.

NOTE E (Duration not indicated. Time of observation is assumed to be start time. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
2.777	850926	0.055	1.2		36.2 x24.6	0.50	Fujichrome	400/	N	X	3/S	1	Tregaskis,T.B	
2.843	850927	1.760	5.8	0.303	1.2 x 0.8	3.00	Kodak 2415		Y		6/P	1	Nijima,T	A

NOTE A (Observer's image identifier is 860302-11. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
2.451	870127	600G-O	CL	0.135	2.8		10.00	Kodak 2415		Y	C	915/S	2	Buchanan,W.T	AB
2.457	870128	600G-O	CL	0.135	2.8		6.00	Kodak 2415		Y	C	916/S	2	Buchanan,W.T	BC

NOTE A Moonlight interfered with the observation. Reference marks included. Halley and Alpha and Beta Capricorni barely visible to naked eye. (Observer's image identifier is E-119-15. Ed.)

NOTE B Window on front of instrument to correspond with aperture [sic]: for f/1.9, window is 75 mm; for f/2.8, window is 54 mm.

NOTE C Moonlight interfered with the observation. Reference marks not included. Halley and Alpha and Beta Capricorni barely visible to naked eye. (Observer's image identifier is E-119-16. Ed.)

DATE: 3 MAR 1986

DATE: 3 MAR 1986

## 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
3.092	816893	3.4	M	4B		7	1.5	274		EY			4.2M	Y	1	Fleet,R.W	
3.099	816894	3.2	M	4B					0.035	B		9	5.0M	Y	1	Begbie,M.J.R	
3.103	816895	3.7	M	4B	4.3	7	3.3	261	0.08	B		11	4.2M	Y	1	Fleet,R.W	A
3.110	816896	3.3	M	4B	1	8	2.57	265	0.04	B		12	4.1	N	1	Henshaw,C	B
3.115	816897				4.5	8		268	0.30	N	8.5	102	5.0M	Y	1	Begbie,M.J.R	C
3.253	816898	3.6	S	4B		7	2.5		0.08	B		20	5.0	Y	3	Storey,D	D
3.326	816899	2.9	B	122		6	0.9	272	0.05	B		20	4.5	Y	8	da Silva,L.A.L	E
3.330	816900	3.3	B	122	5	3	1	275	0.06	R	12	56	5.3	Y	1	Onofre D.,D	
3.34	816901	2.7	M	4B, BSC	4.7	8	5		0.050	B		10	5.5M	Y	20	Morris,C.S	
3.36	816902	2.8	M	4B, BSC	4.4	8	5		0.070	B		16	5.5M	Y	20	Morris,C.S	
3.42	816903	2.8	B	IHW BAA		8			0.035	B		7				Green,D.W.E	
3.43	816904	3.5	B	4B	4	6	2.8	270	0.050	B		10	6	Y	1	Bortle,J.E	F
3.48	816905	3.6	B	4B	6	5	0.67	270	0.080	B		20		Y		Kronk,G	G
3.5674	816906	3.3	S	DCS	4	8	0.85	263	0.080	B		20	3.0		3	Machholz,D	H
3.670	816907	3.6	S	4B	3	8	1	250	0.050	B		12	8.0	Y	1	Batza,H	I
3.736	816908	2.8		4B		2			0.05	B		7	5.0M	Y	8	Garradd,D	J
3.75	816909	2.8		4B						EY						Seargent,G	
3.75	816910						2.5	280	0.025	B		3		Y	1	Seargent,D	
3.752	816911	2.7	S	4B			6.5			EY			5.5M	Y	1	Lovejoy,T	
3.803	816912	3.3	S	4B	10	6	3.5	260	0.035	B		8	5.5	Y	2	Kobayashi,J	
3.83	816913	3.6	S	AAVSO	3	7	2		0.08	B		15	4.5M	Y	1	Hayashi,A	K
3.83	816914	3.7	M	SAO	5	8	0.7	270	0.065	R	8	16	3.5M	Y	7	Nakamura,A	
3.837	816915	3.4	M	4B	3.0	8	3.5	280	0.08	B		11	4	Y	1	Mitsuma,S	L
3.84	816916	3.5	S	AAVSO	3.5	6	1.5		0.13	N	6.3	24	4.5M	Y	1	Hayashi,A	K
3.84	816917	3.0	M	4B			3.0		0.05	B		7	4.5M	Y	1	Suzuki,K	
3.84	816918			4B	3.3 1.3	6			0.21	N	5.0	88	4.5M	Y	1	Suzuki,K	M
3.844	816919	3.2	B	4B	4.4	8	2.6	260	0.05	B		7	3.0T	Y	1	Kanai,K	
3.85	816920	3.8	S	4B	5	8	0.5	270	0.08	B		20	2.0M	N	1	Oka,A	

NOTE A 3.3 deg. tail is gas. 1.5 deg. tail is curved dust tail.

NOTE B Moon.

NOTE C Tail measurement refers to dust tail only.

NOTE D Tail PA 263-281, mean 270. [sic] Moonlight slight problem wind vibration also. Seeing III-IV. Transparency = very good.

NOTE E Moonlight.

NOTE F Extinction correction applied. With 20x120 binoculars: coma noticeably less sharply condensed than yesterday although still rather strongly condensed. Coma is comprised of a vague, faint, outer parabolic envelope containing a dense, very bright condensation at its focus.

NOTE G Some twilight and moonlight. Tail PA approximate.

NOTE H At the time of observation, the comet's altitude was +10 deg. and the sun's altitude was -13 deg. 51st moon 52 degrees away.

NOTE I Moonlight. (Binocular limit? Ed.)

NOTE J Tail is curved dust.

NOTE K PA 245 to 270.

NOTE L m2 = 5.7.

NOTE M Meter. (Coma diameter. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
3.103	830879	4	0.08	B		11		4.2	1	Fleet,R.W	A
3.59	830880	1.38	0.15	N	6	23	14	4	5	Tanikawa,M	
3.752	830881	0.15	0.20	N	6.3	50,250			5	Lovejoy,T	B
3.786	830882						25			McNaught,R.H	C

NOTE A Gas tail at PA 261. Dust tail at PA 275. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C 1840 mag. 3.0. NE tail split into gas and dust. (Drawings at 76x and unspecified magnification submitted. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
3.552	850928	1.250	10	0.125	1.7 x 1.1	0.75	Ilford HP 5	500/	N	O	70/C	18	Edberg,S.J
3.553	850929	1.250	10	0.125	1.7 x 1.1	0.75	Ilford HP 5	500/	N	O	71/C	18	Edberg,S.J
3.554	850930	1.250	10	0.125	1.7 x 1.1	1.08	Ilford HP 5	500/	N	O	72/C	18	Edberg,S.J
3.555	850931	1.250	10	0.125	1.7 x 1.1	0.58	Ilford HP 5	500/	N	O	73/C	18	Edberg,S.J

DATE: 4 MAR 1986

DATE: 4 MAR 1986

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
4.104	816921	3.3	B	4B	10	5	3	270	0.04	B		8		Y	1	Morrisby,A	A
4.123	816922	3.6	M	4B			2.0	269		EY			4.2M	Y	1	Fleet,R.W	
4.126	816923	3.8	M	4B	4.0	7	2.3	258	0.08	B		11	4.2M	Y	1	Fleet,R.W	B
4.31	816924	2.7	M	4B, BSC			2	270	0.050	B		10	5.0M	Y	21	Morris,C.S	C
4.32	816925	2.9	B	4B, BSC					0.050	B		10	5.0M	Y	21	Morris,C.S	
4.411	816926	3.0	B	122	6	4	2.37	241	0.05	B		7	3.6	Y	1	Lairret,R	
4.427	816927	3.4	B	122			4	247	0.05	B		10	3.1	Y	2	Harris,L.A	D
4.52	816928	2.9	B	4B	5	8	1.5	270	0.040	B		8	4.0	Y	1	Keen,R	E
4.552	816929	4.8	M	USNO,AA					0.05	B		7			1	Edberg,S.J	F
4.5528	816930	3.1	S	DCS	5	8	1.08	278	0.130	R	7.1	27	4.0		1	Machholz,D	G
4.5556	816931	2.8	S	DCS	10	5	1.47	278		EY			4.0		1	Machholz,D	H
4.5590	816932	3.1	S	DCS	5	8	1.37	278	0.080	B		20	4.0		1	Machholz,D	I
4.68	816933	4.3	S	SAO	10	7	3	270	0.05	B		7	5.5	Y	2	Ashdown,M	J
4.70	816934	3.7		4B						EY			4.8			Jones,A	K
4.70	816935						1.2		0.080	B		11				Jones,A	L
4.70	816936				5	8			0.317	N	5	86				Jones,A	M
4.70	816937	3.5	S	4B					0.023	B		3				Jones,A	
4.70	816938	3.5	S	4B					0.023	B		3				Jones,A	
4.760	816939	3.0	S	4B			2		0.05	B		7	6.0M	Y	8	Garradd,G	N
4.76	816940					8	3	280	0.08	B		15	5	Y	1	Seargent,D	O
4.76	816941	3.0		4B						EY						Seargent,D	
4.764	816942	2.8	S	4B	5.0		4.0			EY			5.5M	Y	1	Lovejoy,T	
4.770	816943	3.6	S	4B	3	8	1.5	250	0.050	B		12	8.0	Y	1	Batza,H	P
4.792	816944	3.0	B	4B		8	1.7	265	0.05	B		10			1	Tregaskis,T.B	Q
4.82	816945	3.7	S	4B		5	2		0.08	B		11	3.5	N	3	Momose,M	R
4.83	816946	3.2		4B			2.2			EY			5.4	Y		Clark,M.L	
4.837	816947	4.0	B	4B			1		0.035	B		7		Y	2	Okada,M	
4.84	816948	3.5	S	4B	5	6	2.4	278	0.076	N	8	15	5.4	Y		Clark,M.L	
4.84	816949	3.3	S		5	5	2.5	260	0.080	B		11	5.2	Y	1	Akita,I	S
4.84	816950	3.0			10	7	0.3		0.12	B		20	6.0	Y	1	Washi,S	T
4.85	816951	3.8	S	4B	5	8	0.5	270	0.08	B		20	2.5M	N	1	Oka,A	
4.85	816952	3.3	B		10	7	0.58	260	0.05	B		10	3.1	Y	1	Uda,K	
4.85	816953	3.9	S	4B	5	7			0.07	B		10	3.5T	Y	1	Yasuki,M	
4.858	816954				5	6			0.10	N	10	55		Y	1	Kato,T	U

NOTE A Quite clearly a long thin spike and a curved dust tail, curving towards the north. [sic]

NOTE B 2.3 deg. tail is gas. 1.7 deg. tail is curved dust tail.

NOTE C Dust tail in PA 280 was curved toward north. PA of end of tail = 300.

NOTE D Sky completely clear.

NOTE E Extinction correction applied. Twilight.

NOTE F No extinction correction. Estimate made through window.

NOTE G At the time of observation, the comet's altitude was +7 deg. and the sun's altitude was -16 deg. 39% moon 38 degrees away.

NOTE H At the time of observation, the comet's altitude was +8 deg. and the sun's altitude was -16 deg. 39% moon 38 degrees away.

NOTE I At the time of observation, the comet's altitude was +9 deg. and the sun's altitude was -15 deg. 39% moon 38 degrees away.

NOTE J Some moonlight.

NOTE K Clear moon 23.7 d.

NOTE L Paraboloid coma/tail. Tail PA 255-270.

NOTE M Coma stronger south side.

NOTE N 2 deg. tail is straight gas; 3 deg. tail is curved dust.

NOTE O Tail length approximate.

NOTE P Moonlight. (Binocular limit? Ed.)

NOTE Q PA approximate. Hazy cloud. Crescent moon. Doubtful in naked eye.

NOTE R Saw moon. (Translated by IHN staff. Ed.)

NOTE S Moon age 23.7. (Translated by IHN staff. Ed.)

NOTE T Type II. (Observer indicated "Y" method. Ed.)

NOTE U Thick cloud.

SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
4.126	830883	4	0.08	B		11		4.2	1	Fleet,R.W	A
4.759	830884						5			McNaught,R.H	B
4.778	830885	0.20	N	8	67			6.2	1	Thompson,G	C

NOTE A Gas tail at PA 258. Dust tail at PA 274. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Sharp eastern edge to inner envelope. V. faint outer envelope at about 2x distance of inner. 2 jets? (Drawings at 2 unspecified magnifications included. Ed.)

NOTE C (Duration not indicated. Time of observation is assumed to be start time. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
4.521	850932	0.200	3.5		10.3 x 6.9	20.00	Kodak Tri-X	400/	N	O	15/N	1	Haagh,N	
4.543	850933	0.711	2.8	0.254	2.9 x 1.9	6.00	Kodak Plus-X	125/	N	S	37/P	1	Young,J.W	A
4.760	850934	0.200	3.5		10.3 x 6.9	10.00	Kodak Tri-X	400/	N	O	16/N	1	Haagh,N	
4.768	850935	0.200	3.5		10.3 x 6.9	5.00	Kodak Tri-X	400/	N	O	17/N	1	Haagh,N	
4.775	850936	0.200	5.6		10.3 x 6.9	5.00	Kodak Tri-X	400/	N	O	23/N	1	Haagh,N	

NOTE A Instrument is Schmidt camera. (Observer's image identifier is followed suffix -HS. Ed.)

DATE: 5 MAR 1986

DATE: 5 MAR 1986

## 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	
5.111	816955	3.0	B	4B	30	7	2.42	275	0.065	B		20	4.0	Y	1	McBain,J	A	
5.185	816956	3.5	S	122	4.5	7	2.1	260	0.08	B		15	4.2MT	Y	2	Haver,R		
5.185	816957	3.2	S	122						EY			4.2MT	Y	2	Haver,R		
5.190	816958	3.4	S	122	4.5	7	1.9	260	0.05	B		7	4.0MT	Y	2	Haver,R		
5.2388	816959	5		4B			0.75		0.08	B					2	Kemble,L.J	B	
5.33	816960	2.6	M	4B, BSC		8	5		0.050	B		10	5.0M	Y	22	Morris,C.S		
5.33	816961	2.5		4B, BSC						EY			5.0M	Y	22	Morris,C.S		
5.458	816962	4.0	B	122					0.080	B		20	4.5M	Y		Smith,D	C	
5.465	816963	4.0	B	4B					0.08	B		11	3.1	Y	4	Goraki,L		
5.55	816964	2.9	B	4B						EY			5.5	Y	2	Hale,A		
5.55	816965						1.5	270							2	Hale,A		
5.5528	816966	3.0	S	DCS	6	8	1.05	266	0.130	R	7.1	10	5.5	Y	2	Hale,A		
5.5576	816967	2.8	S	DCS	10	3	2.18	266		EY		27	4.2		1	Machholz,D	D	
5.5590	816968	3.6	M	4B	6	7	3.13	269	0.05	B		7	5.5	Y	10	Cook,A.J	E	
5.5590	816969	3.0	S	DCS	7	7	2.15	266	0.080	B		20	4.2		1	Machholz,D	F	
5.70	816970	3.4	S	4B					0.023	B		3	4.8			Jones,A	G	
5.70	816971						1.5		0.078	R	7.5	30				Jones,A	H	
5.70	816972					8			0.317	N	5	86				Jones,A	G	
5.72	816973	6.3	S	SAO					0.317	N	5	86				Jones,A	I	
5.740	816974	2.8	S	4B			3		0.05	B		7	6.0M	Y	8	Garradd,G	J	
5.75	816975	2.7	S	4B			8			EY			5.3M	Y	1	Lovejoy,T	K	
5.76	816976	2.9		4B						EY			5	Y	1	Seargent,D		
5.76	816977				3.5	8	3.5	270	0.08	B		15				Seargent,D	L	
5.771	816978	3.8	S	4B	4		1.7	270	0.05	B		7	4.2M	N	1	Bryant,K	M	
5.792	816979	3.1	B	4B	10		1.7		0.05	B		10		N	3	Tregaskis,T.B	N	
5.82	816980	3.3	M	4B			5.0		0.05	B		7	5.0M	Y	1	Suzuki,K		
5.82	816981			4B	3.6	1.3	6		0.21	N	5.0	88	5.0M	Y	1	Suzuki,K	O	
5.83	816982	4.0	M	4B	2	7			0.080	B		11	2	MT	Y	1	Watanabe,N	P
5.831	816983	3.3	B	4B	5	6	2		0.05	B		7	4.5	Y	1	Hayashi,H		
5.837	816984	3.3	M	4B	3.5	8	3.5	270	0.08	B		11	4	T	Y	1	Mitsuma,S	Q
5.84	816985	3.4	S	AAVSO	3	7	0.7		0.13	N	6.3	24	4.5M	Y	1	Hayashi,A	R	
5.84	816986	3.6	M	SAO	5	8			0.065	R	8	16	3.0M	Y	7	Nakamura,A	S	
5.843	816987	3.4	B	4B	3.2	8	2.9	275	0.05	B		7	2.5T	Y	1	Kanai,K		
5.847	816988	3.8	B	4B					0.07	B		10	3.6M	Y	1	Date,M		

NOTE A Moonlight.

NOTE B Comet seen one and one half hours before sunrise in dark sky. Comet was only 45' above horizon when first spotted and it disappeared in twilight half an hour later. 45' tail rapidly disappeared with twilight. Contrary to usual adverse predictions the comet appears well at my 51 deg. plus latitude and should improve in days ahead. Still not naked eye however.

NOTE C Comet elevation 15 deg.

NOTE D At the time of observation, the comet's altitude was +8 deg. and the sun's altitude was -16 deg. 28% moon 24 degrees away.

NOTE E At the time of observation, the comet's altitude was +9 deg. and the sun's altitude was -15 deg. 28% moon 24 degrees away.

NOTE F Point on southern tail boundary 3.08 deg. at PA 260. Greatest tail length (PA 269, 3.13 deg.). Point on northern tail boundary 2.75 deg. at PA 279.

NOTE G Clear moon 24.7 d.

NOTE H Paraboloid coma/tail. Tail PA 257-270.

NOTE I Nucleus (stars slightly defocused). Observed in twilight to reduce effect of light of condensation.

NOTE J First tail is straight gas; second tail is curved dust.

NOTE K Tail 5.0 deg. certain. Tail length = 8.0 deg. uncertain.

NOTE L Tail length approximate.

NOTE M DC = strong.

NOTE N Clear, crescent moon. Site 3 is about 45 km north of site 1 and is only about 12 km E of the centre of Melbourne, with bright lights and a bright sky in the area. The comet was nevertheless seen easily with naked eye on this occasion. (Observer gave limit as approximately 7. Ed.)

NOTE O Meter. (Coma diameter. Ed.)

NOTE P Coma diameter is upper limit.

NOTE Q m2 = 5.7.

NOTE R PA 240 to 280. "

NOTE S Tail length = yes.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
5.550	830886	3	0.050	B		7	25	5.5	10	Cook,A.J	
5.780	830887						13			McNaught,R.H	A
5.791	830888	0.10	0.20	N	6.3	250			5	Lovejoy,T	B

NOTE A Nucleus less stellar than several days ago. (Drawings at 76x and unspecified magnification included. Ed.)

NOTE B Scale is approximate. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
5.533	850937	0.500	3.6	0.140	4.1 x 2.7	5.00	Ektachrome	400/	N	O	37/N	8	Edberg,S.J	
5.533	850938	0.260	5.2	0.050	7.9 x 5.3	5.00	Kodak Tri-X	400/	N		18/C	8	Edberg,S.J	
5.536	850939	0.500	3.6	0.140	4.1 x 2.7	1.00	Ektachrome	400/	N	O	38/N	8	Edberg,S.J	
5.538	850940	0.711	2.8	0.254	2.9 x 1.9	10.00	Kodak Plus-X	125/	N	S	38/P	1	Young,J.W	A
5.539	850941	0.260	5.2	0.050	7.9 x 5.3	1.00	Kodak Tri-X	400/	N		19/C	8	Edberg,S.J	
5.541	850942	0.260	5.2	0.050	7.9 x 5.3	2.12	Kodak Tri-X	400/	N		20/C	8	Edberg,S.J	
5.547	850943	0.260	5.2	0.050	7.9 x 5.3	10.00	Kodak Tri-X	400/	N		21/C	8	Edberg,S.J	
5.557	850944	1.524	6	0.254	1.4 x 0.9	10.00	Kodak 2415		Y	X	99/P	3	Snyder,L.F	
5.557	850945	0.200	8		10.3 x 6.9	10.00	Kodak 2415		Y	X	100/P	3	Snyder,L.F	
5.833	850946	1.760	5.8	0.303	1.2 x 0.8	6.42	Kodak 2415		Y		7/P	1	Niijima,T	B

NOTE A Instrument is Schmidt camera. (Observer's image identifier is followed suffix -HS. Ed.)

NOTE B (Observer's image identifier is 860305-3. Ed.) Large format (70 mm) film used. City lights interfered with the observation.

DATE: 6 MAR 1986

DATE: 6 MAR 1986

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
6.03	816989	2.5	B	AAVSO	8	7	3	259	0.05	R	4	7				Chernis,K	
6.090	816990	3.6	M	4B					0.035	B		9	5.5M	Y	1	Begbie,M.J.R	
6.097	816991				5.5	8		265	0.30	N	8.5	102	5.5M	Y	1	Begbie,M.J.R	A
6.115	816992	3.8	M	4B	4.3	7	3.3	264	0.08	B		11	4.8M	Y	1	Fleet,R.W	B
6.118	816993	3.5	M	4B			2.3	272		EY			4.8M	Y	1	Fleet,R.W	
6.198	816994	3.8	S	122		7			0.050	B		7	T		1	Mikuz,H	C
6.33	816995	2.7	M	4B, BSC	7	8	4	270	0.050	B		10	5.0M	Y	23	Morris,C.S	
6.33	816996	2.6		4B, BSC		8	2			EY			5.0M	Y	23	Morris,C.S	
6.333	816997	4.3	B	122	0.0	3	0.52		0.050	B		20	5.5	Y	1	Castrillon,M.E	D
6.368	816998	4.3	B	122	4.2	3	0.67		0.050	B		20	5.5	Y	1	Siccardi,L	E
6.396	816999		V	AAVSO			1.7			EY			5.0	Y	2	Ferrin,I	
6.43	817000	3.6	B	IHW BAA		8			0.035	B		7				Green,D.W.E	
6.458	817001		4B			6	1.5		0.050	B		10	6.0	Y	1	Williams,D.J	F
6.535	817002	2.7	S	4B	38	8	2	261	0.035	B		7	3.5CTM	Y	1	Gronek,J.D	G
6.5382	817003	3.0	M	4B	6	7	3.00	270		EY			6.0	Y	10	Cook,A.J	H
6.646	817004	3.2	B	4B		6	3.4	270	0.050	B		7	5	Y	3	Krisciunas,K	I
6.70	817005	3.5	S	4B					0.023	B		3				Jones,A	J
6.729	817006	3.0	S	4B	6.0		3.0		0.03	R	6	8	5.5M	Y	1	Lovejoy,T	
6.736	817007	2.8	S	4B						EY			6.0M	Y	11	Garradd,G	
6.74	817008	2.9		4B			4			EY						Seargent,D	
6.743	817009						5		0.05	B		7				Garradd,G	K
6.750	817010	3.2	B	4B	4	9	1	275	0.05	B		7	3.6	Y	3	Bembrick,C	L
6.750	817011					8			0.31	N	5.4	129				Garradd,G	
6.764	817012	3.1	B	4B		8	2.5		0.05	B		10		Y	1	Tregaskis,T.B	M
6.766	817013		4B		3.6				0.152	N	8	64		Y	1	Tregaskis,T.B	N
6.767	817014	3.8	S	4B	4		1.9	270	0.05	B		7	4.2M	N	1	Bryant,K	O
6.768	817015	2.8		4B				270		EY			5	Y	1	Tregaskis,T.B	N
6.795	817016	3.6	S	4B	3	8	1.5	260	0.050	B		12	8.0	Y	1	Batza,H	P
6.830	817017	3.9	B	4B			1.5		0.035	B		7		Y	2	Okada,M	
6.83	817018	3.4	S	4B			3		0.08	B		11	3.5	Y	3	Momose,M	Q
6.837	817019	3.8	B	4B					0.07	B		10	3.1M	Y	1	Date,M	
6.84	817020	3.0	S		6	6	4	260	0.080	B		11	6.0	Y	1	Akita,I	R
6.84	817021	3.6	M	4B	5	7	2	270	0.08	B		20	4.5	Y	1	Oka,A	
6.84	817022	3.2	S		10	7	2	260	0.05	B		10	5.0	Y	1	Uda,K	
6.84	817023	3.0			8	7			0.08	B		11	5.0	Y	2	Washi,S	S
6.849	817024	3.3	M	4B	6	6	2.5	275	0.030	B		8	4.5M	Y	1	Kato,T	
6.85	817025	3.5	S	4B	4.5	8			0.07	B		10	3.5T	Y	1	Yasuki,M	

NOTE A Tail measurement refers to dust tail only.

NOTE B 3.3 deg. tail is gas. 1.8 deg. tail is dust, fan to 1.4 deg. PA 281.

NOTE C Excellent conditions. Estimated in strong twilight.

NOTE D Coma diameter 0.04. Light cloud. (Translated by IHW staff. Ed.)

NOTE E Coma diameter and tail length approximate.

NOTE F Very clear, moon.

NOTE G Good see. Waning moon.

NOTE H Crescent moon, scattered high clouds.

NOTE I Moon 8 deg. W.

NOTE J Brief gap in clouds.

NOTE K 5 deg. tail is straight gas; 4 deg. tail is curved dust.

NOTE L South edge of tail sharp and distinct, north edge diffuse and concave to north.

NOTE M Tail length is lower limit. Crescent moon, clear.

NOTE N Crescent moon, clear. Stellar-like nucleus.

NOTE O DC = strong

NOTE P Moonlight. (Binocular limit? Ed.)

NOTE Q Saw moon. (Translated by IHW staff. Ed.)

NOTE R Moon age 25.7. (Translated by IHW staff. Ed.)

NOTE S Type II. Tail length = 1 deg. &lt;. [sic] (Observer indicated "Y" method. Ed.)

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
6.115	830889	4	0.08	B		11		4.8	1	Fleet,R.W	A
6.458	830890		0.050	B		10		6.0		Williams,D.J	B
6.768	830891						1	5	1	Tregaskis,T.B	C
6.771	830892						20			McNaught,R.H	D
6.771	830893	0.2	0.152	N	8	64	1		1	Tregaskis,T.B	E

NOTE A Gas tail at PA 264. Dust tail at PA 269. Fan at PA 281. Moonlight (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B I could see a tail with the 10x50 binoculars, about 1 1/2 degrees in length. The center is compact and bright and fuzzy around it. (Duration not indicated. Time of observation is start time. Ed.)

NOTE C Naked eye observation.

NOTE D Gas tail 5 deg. in 9x63; dust tail 2 1/2 in 9x63. Almost circular coma, v. tenuous tails. Inner envelope blue/green 1830 UT. (Drawings at two unspecified magnifications included. Ed.)

NOTE E Scale approximate. Stellar like nucleus; tail at PA 270.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
6.538	850947	0.050	4		39.6 x27.0	0.08	Kodacolor VR 1000/		N		9/N	1	Gronek,J.D	A
6.541	850948	1.830	6	0.305	1.1 x 0.8	2.00	Kodak 2415		Y		006/P	6	Royer,R	
6.545	850949	1.830	6	0.305	1.1 x 0.8	5.00	Kodak 2415		Y		008/P	6	Royer,R	
6.548	850950	1.830	6	0.305	1.1 x 0.8	3.00	Kodak 2415		Y		007/P	6	Royer,R	
6.550	850951	1.830	6	0.305	1.1 x 0.8	1.00	Kodak 2415		Y		005/P	6	Royer,R	
6.732	850952	0.180	2.8		11.4 x 7.6	5.00	Kodak 2415		Y	0	11/S	11	Garradd,G	
6.736	850953	0.200	3.5		10.3 x 6.9	5.00	Kodak Tri-X	400/	N	0	18/N	1	Haagh,N	
6.745	850954	0.200	3.5		10.3 x 6.9	10.00	Kodak Tri-X	400/	N	0	19/N	1	Haagh,N	
6.753	850955	0.200	5.6		10.3 x 6.9	10.00	Kodak Tri-X	400/	N	0	24/N	1	Haagh,N	
6.769	850956	0.300	4.5		6.9 x 4.6	3.50	Kodak 2415		Y	0	12/S	11	Garradd,G	
6.778	850957	0.055	1.2		36.2 x24.6	0.17	Fujichrome	400/	N	X	5/S	1	Tregaskis,T.B	
6.778	850958	0.055	1.2		36.2 x24.6	0.50	Fujichrome	400/	N	X	6/S	1	Tregaskis,T.B	
6.781	850959	0.180	2.8		11.4 x 7.6	2.00	Kodak 2415		Y	0	13/S	11	Garradd,G	

NOTE A City lights, twilight, and moonlight interfered with the observation.

DATE: 7 MAR 1986

DATE: 7 MAR 1986

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
7.02	817026	2.7	B	AAVSO	8	7	4.5	260	0.05	R	4	7				Chernis,K	
7.03	817027	3.9	B	M	2		0.8		0.05	B		7				Konstantinov,S	
7.120	817028	3.2	S	4B	6.0	7	2.50	283	0.13	R	4	21	5.5	Y	1	Campos,J	A
7.122	817029	3.0		4B			1.50	280		EY			5.5	Y	1	Campos,J	
7.124	817030	3.1	S	4B	5.0	7	3.50	282	0.08	B		30	5.5	Y	1	Campos,J	
7.28	817031	3.6	S	4B					0.05	B		7	3.5		6	Shanklin,J.D	B
7.28	817032	3.6	S	4B						EY			3.5		6	Shanklin,J.D	B
7.315	817033	4.2	B	122	0.0	3	0.70		0.050	B		20	6.4	Y	1	Castrillon,M.E	C
7.322	817034	4.2	B	13		3			0.05	B		20	6.4	Y	1	Girardo,M.M	D
7.322	817035	4.1	B	122		3	0.35		0.050	B		20	6.4	Y	1	Lovers,A	E
7.324	817036	2.9	B	122		5	0.9	264	0.05	B		20	4.0	Y	8	da Silva,L.A.L	F
7.333	817037	3.4	B	122	5	3	1.5	270	0.06	R	12	56	5.5	Y	1	Onofre D.,D	
7.333	817038	4.2	B	122	5.2	3	1.4		0.050	B		20	6.2	Y	1	Siccardi,L	G
7.35	817039	3.5	B	AAVSO			5		0.04	B		7				Kiselev,N	
7.38	817040	2.3	B	4B	9	6	2.9	290	0.06	R	13.3	35	6.0	Y	2	Jacobson,E	H
7.38	817041				52	6	8.1	290		EY			6.0	Y	2	Jacobson,E	I
7.397	817042		V	AAVSO			1.4			EY			6.0	Y	2	Ferrin,I	
7.397	817043			AAVSO			1.5		0.12	B		20	6.0	Y	2	Ferrin,I	
7.410	817044	3.0	B	122	6	4	2.90	256	0.05	B		7	5.3	Y	1	Lairet,R	
7.451	817045	3.3	B	122					0.080	B		20	5.2	Y		Smith,D	J
7.459	817046	3.1	B	4B	35	7	3	318	0.20	SC	10	77	5.0	Y	1	Hodonsky,K	
7.54	817047	2.8	B	4B			4	270		EY			5.5	Y	23	Hale,A	
7.542	817048	3.3	M	4B		3	16	130	0.080	B		11	5.5	Y		Glassett,W	K
7.68	817049	3.6	S	SAO	10	7	3.5	270	0.05	B		7	5.2	Y	2	Ashdown,M	L
7.694	817050	2.7	S	4B			5.0			EY			5.8M	Y		Lovejoy,T	
7.740	817051			4B	6	5	3.5		0.114	N	8	45	5.8C	Y	1	Parkinson,M	M
7.74	817052				5	8	3.5	270	0.08	B		15		Y	1	Seargent,D	
7.74	817053	2.8		4B						EY				Y	1	Seargent,D	
7.745	817054			122		9	3.0	285	0.05	B		10	5.0	Y	1	Williams,P.F	
7.750	817055	3.9	S	122						EY			5.0	Y	1	Williams,P.F	
7.753	817056	2.6	S	4B			7		0.05	B		7	6.0	Y	9	Garradd,G	N
7.82	817057	3.6	S	AAVSO	5	6	3		0.08	B		15	5.5	Y	1	Hayashi,A	O
7.82	817058	3.4	M	SAO	9	8	2.0	265	0.065	R	8	16	4.5	Y	5	Nakamura,A	
7.82	817059	3.5	M	4B			5.0		0.05	B		7	5.0	Y	1	Suzuki,K	
7.82	817060			4B	3.3	6			0.21	N	5.0	88	5.0	Y	1	Suzuki,K	P
7.830	817061	3.3	M	4B	3.9	8			0.08	B		11	4.5T	Y	1	Mitsuma,S	Q
7.830	817062								0.16	N	6.3	31	4.5T	Y	1	Mitsuma,S	R
7.830	817063						5	270	0.05	B		7	4.5T	Y	1	Mitsuma,S	
7.831	817064	3.5	B	4B	3.8	7	3.7	270	0.05	B		7	3.5T	Y	1	Kenai,K	
7.836	817065	3.3	M	4B	6	6	5	265	0.030	B		8	5.0M	Y	1	Kato,T	
7.837	817066	4.0	B	4B					0.035	B		7		N	1	Okada,A	
7.84	817067	3.5	S	AAVSO	5	6	2		0.13	N	6.3	24	5.0M	Y	1	Hayashi,A	S
7.84	817068	3.6	M	4B	5	8	3	270	0.08	B		20	5.0	Y	1	Oka,A	
7.84	817069	3.5	M	4B	4.5	6			0.080	B		11	3	T	6	Watanabe,N	
7.84	817070	3.5	S	4B	4.5	8			0.07	B		10	4.0	Y	1	Yasuki,M	
7.844	817071	3.4	B	4B					0.07	B		10	3.6	Y	1	Date,M	

NOTE A Tail 14' of arc at its widest point.

NOTE B Fog.

NOTE C Coma diameter 0.04. Partial covering of clouds. (Translated by INW staff. Ed.)

NOTE D Partly cloudy. (Translated by INW staff. Ed.)

NOTE E Light (swift? Ed.) clouds. (Translated by INW staff. Ed.)

NOTE F Moon near to the comet.

NOTE G Coma diameter and tail length approximate.

NOTE H Condensation. 2.9 deg. tail is gas. 0.8 deg. tail is dust.

NOTE I 8.1 deg. tail is gas. 3.2 deg. tail is dust.

NOTE J Comet elevation 15 deg.

NOTE K Morning twilight. Spectacular nucleus, coma and tail clearly visible at this time from desert site, even with the naked eye.

(PA value appears incorrect. Ed.)

NOTE L Crescent moon 16 deg. away.

NOTE M Assume coma diameter is for inner coma. Tail length approximate.

NOTE N 7 deg. tail is straight gas, 3.5 deg. tail is curved dust.

NOTE O PA 245 to 275.

NOTE P Meter. (Coma diameter. Ed.)

NOTE Q m2 = 5.6.

NOTE R m2 = 7.2.

NOTE S PA 240 to 275.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
7.792	830894									McNaught,R.H	A

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
7.443	850960	0.050	1.4		39.6 x27.0	0.50	Kodak VR	1000/	N	T	10/C	2	Priester,D.C	
7.444	850961	0.050			39.6 x27.0	1.00	Kodak VR	1000/	N	T	11/C	2	Priester,D.C	
7.447	850962	0.050	1.4		39.6 x27.0	5.00	Kodak VR	1000/	N	T	12/C	2	Priester,D.C	
7.453	850963	0.629	5.1	0.123	3.3 x 2.2	0.47	Fujicolor	HR 1600/	N	X	6/P	3	Wallace,B.G	A
7.544	850964	0.135	3.5		15.2 x10.2	5.00	3M 1000	1000/	N	O	2/N	8	Edberg,S.J	
7.738	850965	0.180	2.8		11.4 x 7.6	7.00	Kodak 2415		Y	O	14/S	9	Garradd,G	
7.747	850966	0.180	2.8		11.4 x 7.6	4.00	Kodak 2415		Y	O	15/S	9	Garradd,G	
7.750	850967	0.180	2.8		11.4 x 7.6	3.00	Kodak 2415		Y	O	16/S	9	Garradd,G	
7.759	850968	0.180	2.8		11.4 x 7.6	13.33	Kodak 2415		Y	O	17/S	9	Garradd,G	
7.772	850969	0.085	2		23.9 x16.1	10.00	Kodak 2415		Y	O	18/S	9	Garradd,G	

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

DATE: 8 MAR 1986

DATE: 8 MAR 1986

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	
8.03	817072	3.8	B	M			1.8		0.05	B		7				Konstantinov,S		
8.03	817073	2.9	B	AAVSO	10	7	4	260	0.11	B		20				Chernis,K		
8.087	817074	2.5	B	4B	30	15	7	3	275	0.065	B	20	5.3	Y	1	McBain,J		
8.093	817075	4.4	M	4B					0.035	B		9	5.5M	Y	1	Begbie,M.J.R		
8.099	817076	3.3	M	4B			7	2.5	275	EY		102	5.5M	Y	1	Fleet,R.W		
8.101	817077				5.5	8			0.30	N	8.5					Begbie,M.J.R	A	
8.111	817078	3.0	S	4B	5.0	7	4.00	270	0.08	B		30	5.6	Y	1	Campos,J		
8.118	817079	3.0		4B		8	1.50			EY			5.6	Y	1	Campos,J		
8.119	817080	3.5	M	4B	4.3	7	3.8	261	0.08	B		11	5.2	Y	1	Fleet,R.W	B	
8.124	817081	3.6	M	4B	2	8	4.2	260	0.04	B		12	5.3	N	1	Henshaw,C	C	
8.26	817082	3.0	S	4B					0.05	B		7	5.0		7	Shanklin,J.D		
8.320	817083	4.2	B	122	0.0	3	0.78		0.050	B		20	6.0	Y	1	Castrillon,M.E	D	
8.320	817084	4	B	122		3	0.7		0.05	B		20	6.1	Y	1	Carello,S		
8.320	817085	4.0	B	122		3	0.7		0.050	B			6.0	Y	1	Lovera,A		
8.336	817086	4.2	B	122	5.2	3	1.57		0.050	B		20	6	Y	1	Siccardi,L	E	
8.337	817087	3.4	B	122	5	3	1.5	270	0.06	R	12	56	5.5	Y	1	Onofre D.,D		
8.365	817088	2.6	M	4B		9	7		0.05	B		20	4.8	Y	1	Diaz P.,E		
8.39	817089	2.3	B	4B	9	6	2.5	290	0.06	R	13.3	35	6.0	Y	2	Jacobson,E	F	
8.39	817090				46	6	7.6	290		EY			6.0	Y	2	Jacobson,E	G	
8.401	817091	3.1	B	AAVSO					0.12	B		20	6.0	Y	2	Ferrin,I		
8.408	817092	3.0	B	122	8	4	2.20	255	0.05	B		7		Y	1	Lalret,R		
8.425	817093	3.3	M	4B	7	6	6.0	259	0.05	B		7	4.2	Y	1	DeYoung,J.A	H	
8.43	817094	3.6	B	IHW BAA		8			0.050	B		7				Green,D.W.E		
8.440	817095	3.5	S	4B	5		2.4	265	0.05	B		7	5	Y	2	Hause,R.R	I	
8.448	817096	4.6	M	4B					0.050	B		10	3.1	Y	1	Smith,A	J	
8.451	817097	4.0	B	4B					0.08	B		11	4.2	Y	4	Gorski,L		
8.458	817098	3.0	S	4B	6	6	5	330	0.035	B		7	6	N	1	Levis,D.E	K	
8.461	817099	4.3	B	4B	3.2	5	1.0	284	0.05	B		7	4.8TC	Y	1	Dodd,W.J	L	
8.688	817100	2.7	S	4B			11.0			EY			6.5Z	Y	1	Lovejoy,T		
8.69	817101	3.4	S	4B					0.023	B		3	5.3			Jones,A		
8.69	817102						2.4		0.080	B		11				Jones,A	M	
8.69	817103				5	8			0.317	N	5	86				Jones,A	N	
8.72	817104	8.2	S	SAO					0.317	N	5	86				Jones,A		
8.76	817105	3.1		4B		6			0.050	B		7	4.8C	Y	1	Matchett,V		
8.806	817106	3.0	S	4B	13	5	4	270	0.035	B		8	3.5	Y	2	Kobayashi,J		
8.82	817107	3					1	250	0.05	B		7	3	Y	6	Tanikawa,M	O	
8.823	817108	4.0	B	4B			2.2		0.035	B		7		Y	2	Okada,M		
8.83	817109	2.8	S		10	6	5	260	0.08	B		11	5.7	Y	2	Akita,I		
8.83	817110	3.6	M	SAO	9	8	1.5	265	0.065	R	8	16	4.5	Y	1	Nakamura,A		
8.83	817111	3.0		4B	8	6	5		0.080	B		11		T	Y	1	Okuda,M	P
8.83	817112	3.5	S	4B		5	5		0.08	B		11	4.0	Y	3	Momose,M	Q	
8.83	817113	3.8	M	4B	6	6	3	270	0.080	B		11	4	T	Y	6	Watanabe,N	R
8.833	817114	3.4	S	4B	20	6	2		0.153	N	8.6	33	3.0	Y	1	Iwakai,Y	S	
8.833	817115	3.8	B	4B					0.07	B		10	3.1	Y	1	Date,M		
8.838	817116	3.8	S	4B	4.4	7	1.1		0.05	B		7	1.5T	Y	1	Kanai,K		
8.840	817117	3.6	M	4B	4	7			0.08	B		11	3	T	Y	1	Mitsuma,S	
8.844	817118	3.0	M	4B			1.0	190		EY			3.0	N	6	Ichikawa,K		
8.844	817119	3.4	M	4B	6	6			0.030	B		8	3.0C	Y	1	Kato,T	T	

NOTE A Tail measurement refers to dust tail only.

NOTE B Gas tail at PA 261. Curved dust tail at PA 266. 1.7 deg. tail is fan from main tail to PA 285.

NOTE C Moon.

NOTE D Coma diameter 0.04.

NOTE E Coma diameter and tail length approximate.

NOTE F Condensation. 2.5 deg. tail is gas. 0.5 deg. tail is dust.

NOTE G 7.6 deg. tail is gas. 3.1 deg. tail is dust.

NOTE H Ion tail at PA 259, center of dust tail at PA 267.

NOTE I Naked eye coma only.

NOTE J Low altitude.

NOTE K The best visual sighting.

NOTE L Only used 2 comparison stars for magnitude estimate. Tail length and PA measured from sketch on star chart.

NOTE M Paraboloid symmetrical coma/tail. 2.4 deg. tail PA 260-280. 1.3 deg. tail is shorter ray. Tail brightness at 0.5 degrees from head = Scutum cloud in Milky Way to naked eye.

NOTE N Nucleus (stars slightly defocused - twilight).

NOTE O Tail length approximate.

NOTE P (Observer indicated "Y" method. Ed.) PA I 260 deg., PA II 250-290 deg.

NOTE Q Saw moon with eye. 1 deg. [sic] (Translated by IHW staff. Ed.)

NOTE R Tail length is lower limit.

NOTE S Not real dark (dusk). (Translated by IHW staff. Ed.)

NOTE T Cloud.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
8.101	830895	0.17	0.30	N	8.5	102,212	20	5.5	1	Begbie,M.J.R	A
8.119	830896	4	0.08	B		11		5.2	1	Fleet,R.W	B
8.20	830897		0.356	SC	11	200				Soc. Astro. de France	C
8.797	830898					304				McNaught,R.H	D
8.82	830899	4.28	0.050	B		7	14	3	6	Tanikawa,M	E

NOTE A Fan centred at PA 55; gas tail centred at PA 260. Vertex distance 3 arc min.; semi latus rectums 2 arc min. and 3 arc min.; nuclear jet approx. 1 arc min. long. Near nuclear tail in PA 260 appeared distinctly bright than in the rest of the tail. Observation made in moonlight.

NOTE B Gas tail at PA 261. Dust tail at PA 266. Fan at PA 285. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C Drawing made by M. Verdenet. (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)

NOTE D Details not certain due to speed and cloud. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E Feature at PA 250.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
8.415	850970	0.210	3.5		9.8 x 6.5	15.00	Kodak 2415		Y	S	29/C	3	Chester,G.R
8.784	850971	0.200	3.5		10.3 x 6.9	5.00	Kodak Tri-X	400/	N	O	20/N	1	Haagh,N

DATE: 8 MAR 1986

DATE: 8 MAR 1986

SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
8.443	870129	600G-O	CL	0.135	1.9		16.00	Kodak 2415		Y	C	920/S	2	Buchanan,W.T	AB
8.459	870130	600G-O	CL	0.135	2.8		5.00	Kodak 2415		Y	C	922/S	2	Buchanan,W.T	BC

NOTE A Some thin cirrus. (Observer's image identifier is E-119-20. Ed.)

NOTE B Window on front of instrument to correspond with aperture [sic]: for f/1.9, window is 75 mm; for f/2.8, window is 54 mm.

NOTE C Some thin cirrus. (Observer's image identifier is E-119-22. Ed.)



DATE: 9 MAR 1986

DATE: 9 MAR 1986

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
9.101	817120	3.7	M	4B	2	8	6.5	250	0.04	B		12	5.3	Y	1	Henshaw,C	A
9.174	817121	4.3	M	4B	11.5	7	3.3	263	0.07	B		20	5.5	Y	1	Tanti,T	B
9.229	817122	2.5		4B	20	8	5	270	0.205	N	6.3	144	5.5	Y	1	Gomez,T.L	C
9.313	817123	3.5	B	AAVSO		3	14.00	265	0.115	N	7.8	45	5	Y	1	Alves,A.A	D
9.324	817124	2.9	B	122		4	0.9	264	0.05	B		20	6.0	Y	8	da Silva,L.A.L	
9.406	817125	3.0	B	122	8	3	2.60	255	0.05	B		7	3.5	Y	1	Lairret,R	
9.407	817126			122		4	4	210	0.05	B		7	6.2	Y	1	Ludwig O.,F.L	E
9.42	817127	2.6	B	4B	8	4	0.9	290	0.06	R	13.3	35	6.0	Y	2	Jacobson,E	F
9.42	817128				41	4	4.2	290		EY			6.0	Y	2	Jacobson,E	G
9.4208	817129	3.5	B	AAVSO			2.75		0.12	B		20			2	Ferrin,I	
9.451	817130	4.2	M	4B					0.050	B		10	3.1	Y	1	Smith,A	H
9.455	817131			4B		6	3		0.050	B		10	6.0	Y	1	Williams,D.J	I
9.51	817132	3.2	B	4B	5	8	3.3	265	0.040	B		8	6.0	Y	1	Keen,R	J
9.51	817133	3.2	V	4B						EY			6.0	Y	1	Keen,R	J
9.5243	817134	2.5	M	4B	10	6			0.05	B		7	6.3	Y	11	Cook,A.J	
9.5243	817135	2.5	M	4B	10	6	9.00	270		EY			6.3	Y	11	Cook,A.J	
9.538	817136	3.2	M	4B		3	17	134	0.080	B		11	5.8	Y	1	Glassett,W	K
9.55	817137	2.9	B	4B						EY			3.5C	Y	21	Hale,A	L
9.5562	817138	3.5	S	DCS	10	8	1.50	251	0.080	B		20	3.5		3	Machholz,D	M
9.69	817139	3.2	S	4B					0.023	B		3	5.3	Y		Jones,A	N
9.69	817140						2.8		0.080	B		11				Jones,A	O
9.69	817141					8			0.317	N	5	86				Jones,A	
9.73	817142	3.1	B	4B					0.05	B		10	6	Y	11	Bouma,R.J	
9.743	817143	2.7	S	4B						EY			6.0	Y	4	Garradd,G	
9.75	817144	2.9	S	4B		8	6.5	270	0.05	B		10	6	Y	11	Bouma,R.J	P
9.750	817145						7.5		0.05	B		7				Garradd,G	Q
9.796	817146	3.0	B	4B		8	4.5		0.05	B		10		Y	1	Tregaskis,T.B	R
9.796	817147			4B			3			EY				Y		Tregaskis,T.B	S
9.800	817148			4B	2.8	9		260	0.10	N	6	24		Y		Tregaskis,T.B	T
9.82	817149	2.8	B	4B			5			EY			5.8	Y		Pearce,A	
9.82	817150	3.1	S	4B			7		0.030	B		8	5.8	Y		Pearce,A	
9.85	817151	3.0	S	4B			3.3			EY			6.0	Y		Clark,M.L	
9.87	817152	3.4	S	4B	5.5	7	3.75	261	0.25	N	5	62	6.0	Y		Clark,M.L	

NOTE A Gas tail 6.5 deg. at PA 250; dust tail 2.5 deg. at PA 270.

NOTE B Artificial light. Haze. Clouds.

NOTE C Tail length exceeds 5 deg.

NOTE D Intermittent visibility did not permit coma diameter measurement.

NOTE E Sky clear, achieving a very good observation of the celestial arch. (Roughly translated by IHW staff. Ed.)

NOTE F Condensation/haze. 0.9 deg. tail is gas. 0.4 deg. tail is dust.

NOTE G 4.2 deg. tail is gas. 1.4 deg. tail is dust.

NOTE H Low altitude.

NOTE I Very clear.

NOTE J Extinction correction applied.

NOTE K Morning twilight. Spectacular nucleus, coma and tail clearly visible at this time from desert site, even with the naked eye.

(PA value appears incorrect. Ed.)

NOTE L Observed from within Los Angeles city limits. Some interference from light pollution. The comet was visible with the naked

eye without much difficulty, but the tail could not be positively seen. Observation hurried because of fast-moving clouds.

NOTE M At the time of observation, the comet's altitude was +12 deg. and the sun's altitude was -14 deg.

NOTE N Clear.

NOTE O Paraboloid symmetrical. Tail PA 255-273. Tail brightness at 0.5 degrees from head, midway in brightness between Sgr and Sct

clouds.

NOTE P Gas tail at PA 270. Dust tail at PA approximately 276.

NOTE Q 7.5 deg. tail is straight gas; 4 deg. tail is curved dust.

NOTE R Clear, breaking dawn.

NOTE S Tail length approximate. Clear, breaking dawn.

NOTE T PA approximate. Almost stellar-like nucleus. No jets. Magnification of 68 also used.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
9.359	830900		0.203	SC	5	32, 48	45		4	Arpin,P	A
9.359	830901		0.080	B		20	45		4	Arpin,P	B
9.455	830902		0.050	B				6.0		Williams,D.J	C
9.790	830903									McNaught,R.H	D
9.796	830904	4.5	0.050	B		10			1	Tregaskis,T.B	E

NOTE A Fountain, jet, coma, tail indicated. Auxilliary lens used to reduce focal length by 0.5.

NOTE B Tail, coma indicated.

NOTE C Halley was clearly visible. The tail is brighter this morning, about 2.5 to 3 degrees in length. The comet is about

magnitude 2.0. (Duration not indicated. Time of observation is start time. Ed.)

NOTE D (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E Dawn breaking - no moon. No jets or other features noticed in 4", 24x or 4", 68x Newtonian. Tail about 4.5 deg. long in

binoculars. (3 deg. to naked eye.) Almost stellar-like nucleus. Tail at PA 260.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gang	Id/Typ	Site	Observer(s)	Notes
9.367	850972	0.200	2.8		10.3 x 6.9	4.50	Kodak 2415		Y	S	1/P	4	Dilsizian,R	A
9.500	850973	0.050	2		39.6 x27.0	0.25	Konica 1600		N		1/P	1	Pacholka,W	B
9.504	850974	0.210	4		9.8 x 6.5	11.00	Konica 1600		N		2/P	1	Pacholka,W	B
9.521	850975	0.210	4		9.8 x 6.5	11.00	Konica	1600/	Y	S	2/S	1	Pacholka,W	
9.528	850976	0.260	5.2	0.050	7.9 x 5.3	1.00	3M 1000	1000/	N	O	3/N	9	Edberg,S.J	C
9.530	850977	0.050	1.8		39.6 x27.0	2.00	Agfachrome	1000/	N		11/P	11	Cook,A.J	
9.531	850978	0.050	2		39.6 x27.0	0.25	Konica	1600/	Y	S	10/S	1	Pacholka,W	
9.532	850979	0.050	1.8		39.6 x27.0	1.00	Agfachrome	1000/	N		12/P	11	Cook,A.J	
9.534	850980	0.050	1.8		39.6 x27.0	3.00	Agfachrome	1000/	N		13/P	11	Cook,A.J	D
9.540	850981	0.085	3.8		23.9 x16.1	10.00	Ektachrome	400/	N	O	1/N	9	Edberg,S.J	E
9.544	850982	1.830	6	0.305	1.1 x 0.8	2.00	Kodak 2415		Y		010/P	3	Royer,R	
9.549	850983	1.830	6	0.305	1.1 x 0.8	5.00	Kodak 2415		Y		011/P	3	Royer,R	
9.553	850984	1.830	6	0.305	1.1 x 0.8	7.00	Kodak 2415		Y		012/P	3	Royer,R	
9.556	850985	1.830	6	0.305	1.1 x 0.8	1.00	Kodak 2415		Y		009/P	3	Royer,R	
9.717	850986	0.180	2.8		11.4 x 7.6	5.00	Kodak 2415		Y	O	19/S	4	Garradd,G	
9.736	850987	0.180	2.8		11.4 x 7.6	3.50	Kodak 2415		Y	O	20/S	4	Garradd,G	
9.736	850988	0.200	3.5		10.3 x 6.9	20.00	Kodak Tri-X	400/	N	O	21/N	1	Haagh,N	
9.742	850989	0.180	2.8		11.4 x 7.6	7.83	Kodak 2415		Y	O	21/S	4	Garradd,G	
9.752	850990	0.200	5.6		10.3 x 6.9	20.00	Kodak Tri-X	400/	N	O	25/N	1	Haagh,N	
9.764	850991	0.200	3.5		10.3 x 6.9	5.00	Kodak Tri-X	400/	N	O	22/N	1	Haagh,N	
9.771	850992	0.050	2.8		39.6 x27.0	5.00	Kodak Tri-X	400/	N	O	26/N	1	Haagh,N	F

DATE: 9 MAR 1986

DATE: 9 MAR 1986

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
9.778	850993	0.050	2.8		39.6 x27.0	10.00	Kodak Tri-X	400/	N	O	27/N	1	Haagh,N	F
9.797	850994	0.055	1.2		36.2 x24.6	0.08	Ektachr.400		N		7/S	1	Tregaskis,T.B	G
9.797	850995	0.055	1.2		36.2 x24.6	0.17	Ektachr.400		N		8/S	1	Tregaskis,T.B	G
9.797	850996	0.055	1.2		36.2 x24.6	0.33	Ektachr.400		N		9/S	1	Tregaskis,T.B	G

NOTE A Filter for 200 mm photo was a Minus Violet Filter (cutoff below approximately 440 nm) supplied by Lumicon. Some declination drift. Stellar guiding used because long focal lengths not used. Film was hypersensitized before leaving New York and remained frozen until used.

NOTE B Push processed to 4000 ASA. (Start time appears to be approximate. Ed.)

NOTE C Start time uncertain.

NOTE D Exposure duration uncertain.

NOTE E 120 size film used (6x6 cm). Start time and exposure uncertain.

NOTE F UV #1A filter used.

NOTE G Push processed to 800 ASA.

DATE: 10 MAR 1986

DATE: 10 MAR 1986

## 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	
10.122	817153	3.7	M	4B	2	8	6	250	0.04	B		12	5.3	Y	1	Henshaw,C	A	
10.31	817154	2.7	M	4B, BSC	7	8	6	280	0.050	B		10	5.0C	Y	24	Morris,C.S		
10.313	817155						3			EY			6.0		3	Martinez,C		
10.32	817156	2.8	M	4B, BSC		7			0.070	B		16	5.0C	Y	24	Morris,C.S	B	
10.32	817157	2.7		4B, BSC		7	9.5	280		EY			5.0C	Y	24	Morris,C.S		
10.375	817158	2.6	B	AAVSO			1.8		0.12	B		20	5.8		2	Ferrin,I		
10.403	817159		B	122	4	2	4	2.00	0.05	B		7	5.0	Y	1	Lairret,R		
10.442	817160	3.2:	M	4B	7				0.063	B		9	3.1	Y	1	DeYoung,J.A		
10.447	817161	3.4	B	122		4	3	247	0.05	B		10	3.1	Y	1	Harris,L.A	C	
10.69	817162	2.9	S	4B					0.023	B		3	5.3	Y		Jones,A	D	
10.69	817163						3.5		0.080	B		11				Jones,A		
10.69	817164				7				0.317	N	5	86				Jones,A		
10.73	817165	2.8	S	4B		7	6.0	260	0.05	B		10	6	Y	11	Bouma,R.J	E	
10.73	817166	3.0	B	4B					0.05	B		10	6	Y	11	Bouma,R.J		
10.74	817167	2.8		4B		8				EY			6	Y	11	Bouma,R.J		
10.74	817168	2.7		4B			5	274		EY			6	2	Y	1	Seargent,D	
10.745	817169	3.0	S	122		9	3.0		0.05	B		10	5.0	Y	1	Williams,P.F		
10.750	817170	3.0	B	4B	4.5	9	2.5	275	0.05	B		7	4.8	Y	3	Bembrick,C	F	
10.750	817171	2.6	S	4B			5		0.05	B		7	6.0	Y	15	Garradd,G	G	
10.750	817172			4B	6		6		0.114	N	8	45	6.5	Y	4	Parkinson,M	H	
10.771	817173	2.5	S	4B			13.0			EY			6.3	Y	1	Lovejoy,T		
10.777	817174	3.4	S	4B	5	8	3.5	270	0.050	B		12		Y	1	Batza,H	I	
10.778	817175	3.0		4B			3	260		EY				Y	1	Tregaskis,T.B	J	
10.778	817176	3.0	B	4B		8	5	260	0.05	B		10		Y	1	Tregaskis,T.B		
10.79	817177	2.8	B	4B			3.5			EY			6.2	Y		Clark,M.L		
10.80	817178	3.4	S	4B	8	7	2.4	268	0.25	N	5	38	6.2	Y		Clark,M.L		
10.84	817179	2.8	B	4B			4			EY			5.8	Y		Pearce,A		
10.84	817180	3.1	S	4B			10		0.030	B		8	5.8	Y		Pearce,A		

NOTE A Gas tail 6 deg. at PA 250; dust tail 2.5 deg. at PA 270.

NOTE B Condensation had a hook shaped feature from north side back into the tail.

NOTE C This estimate was made with the light of dawn (5:43 am local time).

NOTE D Cloud curtailed observing.

NOTE E DE at 3 deg. from nucleus? Brighter spot seen, just separated from dust tail. Tail, very faintly, seen out to 6 deg. from nucleus, or 3 deg. from DE. Dust tail at PA approximately 275.

NOTE F South edge of tail sharp and distinct, north edge diffuse and concave to north.

NOTE G First tail is gas; second tail is dust.

NOTE H Tail length approximate.

NOTE I (Observer gave limit as 9.0. Ed.)

NOTE J PA approximate. Clear and calm.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
10.12	830905	4	0.08	B		11			1	Fleet,R.W	A
10.365	830906		0.203	SC	5	113	30		4	Arpin,P	B
10.397	830907	0.25	0.20	N	8	120	13	6	1	Vargas B.,A.G	C
10.494	830908		0.203	SC	10	81			1	Lohvinenko,T.W	D
10.656	830909		0.050	B		7	30	6	1	Notley,M	E
10.748	830910						64			McNaught,R.B	
10.766	830911		0.254	N	6	61	75			Pawlutschenko,B	F

NOTE A Gas tail at PA 260. Dust tail at PA 272. Between clouds, observation incomplete. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Coma is circular and blue; nucleus is stellar. Jet, front coma [sic], coma, tail indicated.

NOTE C Central oblique tail at PA 270 approx. Tail side at PA 230 approx. The tail was very remarkable in their extremities a central and oblique little tail was observed during good seeing moments. [sic] The brighter is the southeast side. This date the comet appear with a very bright central condensation; sometimes during the observations a diffuse filament is visible. The tail is more bright in its round however. [sic] DC 8; coma diameter: 3' approx.

NOTE D The comet is seen here with difficulty, but it is seen as a yellowish blue coma and the nucleus is seen as a yellow colour. This may be due to the sky conditions however instead of the dust from the comet. A tail can be seen at PA 228 deg. E of N. [sic] The tail is just visible however and is quickly hidden by the poor contrast between it and the sky. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E Detail of tail at PA 30 NE. [sic]

NOTE F Extraordinary bright semicircular plume, clear distinctive nucleus, 2.5 deg. fan tail; comet head. Between the hours of 4:45 am and 6:00 am DST on 11th March, 1986, the comet was noticed to exude a beautiful semicircular plume. This plume was easily discernible and reminded me of the volcanic plume discovered on Io. Focus of the head of the comet was incredibly clear and the nucleus produced an image comparable to neighbouring stars. A most exquisite view of the comet was gone the next morning, to reveal a nucleus surrounded by a ball of bright glowing dust, making the whole head appear unfocusable. (Drawing data inferred from written description. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
10.245	850997	0.055	2.8		36.2 x24.6	5.00	Agfachr. Pro	1000/	N		18/P	3	Conrad,R	A
10.245	850998	0.135	1.8		15.2 x10.2	5.00	Kodak 2415		Y		20/P	3	Conrad,R	B
10.247	850999	0.135	1.8		15.2 x10.2	20.00	Kodak 2415		Y		21/P	3	Conrad,R	C
10.328	851000	0.700	5	0.140	2.9 x 2.0	25.00	Tri-X Pro	320/	N	X	1/T	1	Travnik,N.A.S	D
10.406	851001	0.050	2.8		39.6 x27.0	2.00	Kodak Tri-X	400/	N	O	28/N	1	Haagh,N	E
10.444	851002	0.058	1.4		34.5 x23.4	0.67	Kodak Tri-X		N	T	2/C	2	Priester,D.C	F
10.445	851003	0.058	1.4		34.5 x23.4	0.33	Kodak Tri-X		N	T	3/C	2	Priester,D.C	F
10.445	851004	0.058	1.4		34.5 x23.4	0.17	Kodak Tri-X		N	T	4/C	2	Priester,D.C	F
10.587	851005	0.200	3.5		10.3 x 6.9	20.00	Kodak 2415		N	O	47/N		Haagh,N	
10.730	851006	0.200	3.5		10.3 x 6.9	25.00	Kodak 2415		N	O	29/N	1	Haagh,N	G
10.737	851007	0.180	2.8		11.4 x 7.6	4.17	Kodak 2415		Y	O	22/S	15	Garradd,G	
10.744	851008	0.180	2.8		11.4 x 7.6	10.00	Kodak 2415		Y	O	23/S	15	Garradd,G	
10.748	851009	0.200	3.5		10.3 x 6.9	15.00	Kodak 2415		N	O	30/N	1	Haagh,N	
10.760	851010	0.200	3.5		10.3 x 6.9	10.00	Kodak 2415		N	O	31/N	1	Haagh,N	
10.761	851011	0.180	2.8		11.4 x 7.6	25.00	Kodak 2415		Y	O	24/S	15	Garradd,G	
10.766	851012	0.200	3.5		10.3 x 6.9	5.00	Kodak 2415		N	O	32/N	1	Haagh,N	
10.776	851013	0.200	5.6		10.3 x 6.9	15.00	Kodak 2415		N	O	33/N	1	Haagh,N	
10.780	851014	0.300	4.5		6.9 x 4.6	11.17	Kodak 2415		Y	O	25/S	15	Garradd,G	
10.785	851015	0.055	1.2		36.2 x24.6	0.17	Ektachr.400		N		10/S	1	Tregaskis,T.B	F
10.785	851016	0.055	1.2		36.2 x24.6	0.33	Ektachr.400		N		11/S	1	Tregaskis,T.B	F
10.785	851017	0.055	1.2		36.2 x24.6	0.67	Ektachr.400		N		12/S	1	Tregaskis,T.B	F

NOTE A Zodiacal light interfered with the observation. Film "pushed" to 4000 ISO/37 DIN.

NOTE B Zodiacal light interfered with the observation. UV filter used. (This probably means a UV blocking, clear glass filter. Ed.)

NOTE C Zodiacal light interfered with the observation. Composite of 3 neg. (Individual negative details not specified on original)

DATE: 10 MAR 1986

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report form. Ed.)  
NOTE D Instrument is Zeiss Tessar. Format size 88 mm x 128 mm.  
NOTE E UV #1A filter used.  
NOTE F Push processed to 800 ASA.  
NOTE G Red #29 filter used.

DATE: 11 MAR 1986

DATE: 11 MAR 1986

## 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
11.073	817181	2.5	B	4B	30 25	7	4	270	0.065	B		20	6.4	Y	1	McBain,J	A
11.096	817182	3.4	M	4B	4	8	5	265	0.04	B		12	5.3	Y	1	Henshaw,C	
11.111	817183	3.0	B	4B		7	6.5	265	0.06	B		15	5.6	Y	2	Vincent,J	B
11.115	817184	3.2	S	4B	4.0	7	3.00	279	0.13	R	4	21	5.7	Y	1	Campos,J	
11.156	817185	4.3	M	4B	11.5	7	5.1		0.07	B		20	5.5	Y	1	Tanti,T	C
11.201	817186	3.7	B	4B	20	8	6		0.05	B		7	5.5	Y	6	Gomez,A	D
11.250	817187	2.8	M	4B	60	6	6.0			EY		5.5	Y	3	Gallego,J	E	
11.260	817188	3.5	M	4B	45	4			0.05	B		20	5.5	Y	3	Gallego,J	F
11.328	817189	3.9	B	122	6.3	3	2.45		0.050	B		20	5.9	Y	1	Siccardi,L	G
11.39	817190	2.7	M	4B, BSC					0.050	B		10	5.0	Y	25	Morris,C.S	
11.39	817191	2.6		4B, BSC			11.5	265		EY		5.0	Y	25	Morris,C.S	H	
11.395	817192	2.6		AAVSO			2.4			EY		6.0			2	Ferrin,I	
11.395	817193			AAVSO			2.0		0.100			6	6.0		2	Ferrin,I	
11.418	817194			122		3	1.5	207	0.05	B		20	4.5C	Y	2	Ludewig O.,F.L	I
11.67	817195	2.8	B	AA	10	0	5.5	130	0.05	B		10		Y	1	Campbell,R.N	J
11.733	817196	3.0	B	4B		9	3.5	275	0.05	B		7	4.8	Y	3	Bembrick,C	K
11.736	817197	2.8		4B			3	260		EY				Y	1	Tregaskis,T.B	L
11.74	817198	2.9	S	4B		7	5.0	270	0.05	B		10	6	Y	11	Bouma,R.J	M
11.74	817199	3.1	B	4B					0.05	B		10				Bouma,R.J	
11.75	817200	2.9		4B			5.0	270		EY		6		Y	11	Bouma,R.J	N
11.75	817201	2.7		4B			12	264		EY		6.1Z		Y	1	Seargent,D	O
11.750	817202	3.0	B	4B		8	5	260	0.05	B		10		Y	1	Tregaskis,T.B	P
11.750	817203	3.0	S	122		9	1.5			EY		5.0		Y	1	Williams,P.F	
11.755	817204					9	3.5		0.05	B		10	5.0	Y	1	Williams,P.F	
11.767	817205	3.4	S	4B	5	8	4.0	270	0.050	B		12		Y	1	Batza,H	Q
11.767	817206	3.8	S	4B	4		2.2	270	0.05	B		7	5.1	Y	1	Bryant,K	R
11.779	817207	2.7	S	4B						EY		6.0		Y	15	Garradd,G	
11.785	817208					6			0.05	B		7				Garradd,G	S
11.788	817209			4B					0.10	N	6	24		Y		Tregaskis,T.B	T
11.799	817210	3.0	B	4B			10		0.05	B		7	6.0	Y	5	Hayashi,H	
11.819	817211	3.6	M	4B	4.5	7			0.08	B		11	5	Y	1	Mitsuma,S	U
11.819	817212						5	275	0.05	B		7	5	Y	1	Mitsuma,S	
11.819	817213						7			EY		5		Y	1	Mitsuma,S	
11.82	817214	3.9	M	SAO	9	7	2.1	270	0.065	R	8	16	4.5	Y	6	Nakamura,A	
11.826	817215					5		310	0.05	R	7.6	19		Y	2	Kitamura,K	
11.83	817216	2.9	S		8	6	4	255	0.08	B		11	5.5	Y	1	Akita,I	
11.837	817217	3.1		4B	12	5	3	270	0.07	B		10	3.0	Y	1	Kobayashi,J	V
11.851	817218	3.1	M	4B	6	6	1	270	0.030	B		8	4.0T	Y	1	Kato,T	

NOTE A Some skyglow.

NOTE B Centre line of tails 280 deg. 6.5 deg. tail is gas, 3.5 deg. tail is dust. I got the impression that the dust tail was spiralling around the gas tail, which of course is impossible, all very strange.

NOTE C Seeing good, transparency excellent. Artificial light. PA 268 to 281.

NOTE D Stellar nucleus. Coma diameter approximate; tail length exceeds 6 deg.

NOTE E Gas &amp; dust tails. Tail longer than 6 deg.

NOTE F Bluish. Tail length approximate.

NOTE G Coma diameter and tail length approximate.

NOTE H PAs define fan tail.

NOTE I Sky of Barquisimeto has much light interference. (Roughly translated by IHW staff. Ed.)

NOTE J Clear. PA uncertain.

NOTE K South edge of tail sharp and distinct; north edge diffuse and concave to north.

NOTE L Tail length and PA approximate.

NOTE M Dust tail, PA approximate.

NOTE N PA 270 listed as approximate position. Gas tail only (very faintly) visible to naked eye, possibly even longer than 11 deg.

NOTE O Gas tail approximately 12 deg. at PA 264, dust tail approximately 5 deg. at PA 270.

NOTE P PA approximate.

NOTE Q (Observer gave limit as 9.0. Ed.)

NOTE R DC = strong.

NOTE S First tail is gas; second tail is dust.

NOTE T No stellar-like nucleus but bright, diffuse central condensation. Dark line in middle behind head. Magnification of 68 also used.

NOTE U m2 = 7.1.

NOTE V Magnitude estimation method = F.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
11.20	830912	0.356	SC	11	200					Soc. Astro. de France A	
11.260	830913	0.050	B		20				3	Gallego,J	B
11.356	830914					5			1	Zanette,D	C
11.365	830915	0.203	SC	5	113	30			4	Arpin,P	D
11.377	830916	0.25	0.20	N	8	120	65	6	1	Vargas B.,A.G	E
11.418	830917	0.39	0.65	R	16.5	105	5	6.0	1	Ferrin,I	F
11.792	830918									McNaught,R.H	G
11.984	830919	0.41	0.317	N	6	95	13	5.3	1	Soc. Astro. de France H	

NOTE A Drawing made by M. Verdenet. (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)

NOTE B Bluish colour. The coma and tail have a conspicuous degrees of luminosity. [sic] False nucleus very visible. (Spines in the tail, (?)) (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

NOTE C Drawing made from a negative exposed 5 minutes on Agfapan 400 ASA, 50 mm lens. The large number of stars seen on the negative are depicted as they appear in the Atlas Coeli. The maximum magnitude estimated on the negative is approximately 8. (Translated by IHW staff. Ed.) Tail I diffuse and wide. Tail II narrow and very faint. Scale = 12.0"/mm.

NOTE D Two jets, tail indicated. Tail very broad and brighter at the edges. Coma uniform and circular. The nucleus is stellar.

NOTE E Remarkable tail at approx. PA 295. The northeast side of the tail was very bright. The coma appear very hazy. [sic] The drawing show some relative bright stars; there is no a bright central region like was in March 10. [sic] A very diffuse and wider tail was observed. The coma appear regular and diffuse. DC 3; coma diameter 3.5' approx.

NOTE F There was a fan-shaped region in the solar direction.

NOTE G Mag. about same as last night. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE H A lot of clouds (intermittent). Central nebulosity 6.7"x4.7". Estimated visual magnitude 2.3 (Bobrovnikoff method).

Streamers at PA 177, 3.53' long; tail at PA 262, 40.78' long; tail at PA 283, 25.49' long; streamer at PA 340, 6.87' long.

Drawing made by J. Claude Thorel.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
11.185	851018	0.050	1.7		39.6 x27.0	3.00	Agfachrome	1000/	N		002/P	2	Brandli,W	A
11.524	851019	0.500	3.6	0.140	4.1 x 2.7	1.00	3M 1000	1000/	N	O	5/N	8	Edberg,S.J	

DATE: 11 MAR 1986

DATE: 11 MAR 1986

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
11.533	851020	0.508	5	0.102	4.1 x 2.7	10.00	Kodak IIA-O		N		02/P	1	Padilla,S	B
11.546	851021	1.830	6	0.305	1.1 x 0.8	3.00	Kodak EES	1600/	N		013/P		Royer,R	
11.737	851022	0.085	2.4		23.9 x16.1	15.00	Kodak 2415		Y	O	26/S	15	Garradd,G	C
11.752	851023	0.180	2.8		11.4 x 7.6	10.17	Kodak 2415		Y	O	27/S	15	Garradd,G	
11.770	851024	0.180	2.8		11.4 x 7.6	25.33	Kodak 2415		Y	O	28/S	15	Garradd,G	
11.784	851025	0.055	1.2		36.2 x24.6	1.00	Ektachr.400		N		13/S	1	Tregaskis,T.B	D
11.785	851026	0.055	1.2		36.2 x24.6	0.50	Ektachr.400		N		14/S	1	Tregaskis,T.B	D
11.785	851027	0.055	1.2		36.2 x24.6	0.25	Ektachr.400		N		15/S	1	Tregaskis,T.B	D

NOTE A Photo equipment mounted parallel to telescope, hand drive. (Translated by IHW staff. Ed.)

NOTE B (Observer gave emulsion as IIAO + 0. "0" may refer to a UV absorbing filter. Ed.)

NOTE C Lens aperture stopped down from f/2.0 to 2.4.

NOTE D Push processed to 800 ASA.

DATE: 12 MAR 1986

DATE: 12 MAR 1986

## 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	
12.095	817219	3.1	M	4B					0.035	B		9	5.4	Y	1	Begbie, M.J.R		
12.10	817220	4.2	B	AAVSO	60		5.5		0.08	B		8				Korneev, V		
12.10	817221	2.8	B	E	20		2.5	270	0.05	B		7				Mormil, V		
12.104	817222				5.1		8	265	0.30	N	8.5	102	5.4	Y	1	Begbie, M.J.R	A	
12.104	817223	3.4	M	4B			6	2.7	270		EY		5.1	Y	1	Fleet, R.W		
12.104	817224	3.0	B	4B			7	6	270	0.06	B	15	5.4	Y	2	Vincent, J	B	
12.115	817225	3.8	M	4B	5.5		7	4.0	265	0.08	B	11	5.1	Y	1	Fleet, R.W	C	
12.177	817226	4.0	S	4B	3		8	0.4	0.050	B		10	3.0T	N	6	Vanin, G		
12.219	817227	3.5	M	4B	7		8	3.5	263	0.114	N	3.7	47	5.0	Y	2	Gomez, T.L	D
12.317	817228	4.2	B	122			4	1.05	0.050	B		20	6.1	Y	1	Castrillon, M.E	E	
12.317	817229	4.6	B	122	0.0		4	2.1	0.05	B		20	6.0	Y	1	Carello, S		
12.317	817230	4.5	B	13			4		0.05	B		20	6.1	Y	1	Girardo, M.M		
12.317	817231	4	B	122	6.3		3	2.97	0.050	B		20	5.8	Y	1	Siccardi, L	F	
12.340	817232	3.5	B	122	5		2	3	0.06	R	12	56	5.3	Y	1	Onofre D., D	G	
12.40	817233	3.4	B	IHW BAA			7	3		EY						Green, D.W.E	H	
12.41	817234				3.5		7		0.317	N	6	55				Bortle, J.E	I	
12.41	817235	3.6	B	4B	5		7	4.5	0.050	B		10	6	Y	1	Bortle, J.E	J	
12.41	817236	3.3	4B				3	267		EY		6		Y	1	Bortle, J.E	J	
12.42	817237	3.5	B	IHW BAA	6		8	5	0.035	B		7				Green, D.W.E	K	
12.435	817238	4.5	S	4B	5		1	1.6	275	0.05	B	7	3.5	Y	5	House, R.R	L	
12.521	817239	2.6	S	4B	38		8	2	265	0.035	B	7	4.5C	Y	1	Gronek, J.D	M	
12.54	817240	2.9	B	4B				3.8	270		EY		5.5	Y	2	Hale, A	N	
12.719	817241	3.0	B	4B			9	4.0	275	0.05	B	7	4.6	Y	3	Bembrick, C	O	
12.743	817242	2.8	S	4B			5			EY			6.0	Y	15	Garradd, G		
12.747	817243						5		0.05	B		7				Garradd, G	P	
12.756	817244	2.6	S	4B	7.5		13.0			EY			6.3	Y	1	Lovejoy, T		
12.764	817245	2.8	4B				3	260		EY				Y	1	Tregaskis, T.B	Q	
12.764	817246	3.0	B	4B	8		8	5	260	0.05	B	10		Y	1	Tregaskis, T.B	R	
12.767	817247		4B				8		260	0.10	N	6	24	Y	1	Tregaskis, T.B	S	
12.77	817248	2.8	4B				12.0	262		EY		6	Z	Y	11	Bouma, R.J	T	
12.77	817249	2.9	S	4B	6.5		7	4.5	275	0.05	B	10	6	Z	Y	11	Bouma, R.J	U
12.77	817250	3.1	B	4B					0.05	B		10	6	Z	Y	11	Bouma, R.J	
12.77	817251	2.8	4B				8.5	267		EY			6.1Z	Y	1	Seargent, D		
12.77	817252				7		8		0.08	B		15				Seargent, D		
12.777	817253	3.4	S	4B	5		8	4.0	270	0.050	B	12		Y	1	Batza, H	V	
12.778	817254	3.8	S	4B	4		6	2.5	270	0.05	B	7	5.1	N	1	Bryant, K	W	
12.82	817255	3.9	S	AAVSO	4		6	2	0.07	B		10	5.0	Y	1	Hayashi, A	X	
12.82	817256	3.9	M	SAO	9		7	2.0	265	0.065	R	8	16	4.5	Y	6	Nakamura, A	
12.823	817257	3.8	M	4B	4.5		7		0.08	B		11	4	CT	Y	1	Mitsuma, S	Y
12.823	817258						3	275	0.05	B		7	4	CT	Y	1	Mitsuma, S	
12.826	817259				5.7		5		0.05	R	7.6	19		Y	2	Kitamura, K		
12.826	817260	3.6	M	4B	7.2		6	2	250	0.1	N	10	40	5.0	Y	1	Ichikawa, K	
12.826	817261	3.9	B	4B					0.07	B		10	3.1	Y	1	Date, M		
12.830	817262	3.5	M	4B	6		6		0.030	B		8	4.0CT	Y	1	Kato, T	Z	
12.83	817263	3.5	M	4B			6	6.0	0.05	B		7	5.0	Y	1	Suzuki, K		
12.83	817264		4B		3.3		6		0.25			88		Y	1	Suzuki, K	a	
12.831	817265				4		6	0.3	270	0.10	N	10	55	4.0CT	Y	1	Kato, T	Z
12.833	817266	4.0	B	4B	4.1		7	3.3	270	0.05	B	7	3.0T	N	1	Kanai, K		
12.833	817267	3.0	B	4B			7	5	0.070	B		10	4.0	Y	1	Nakamura, Y		
12.837	817268				5.3		7		0.12	N	6	60	2.0T	Y	1	Kishi, A		
12.838	817269	3.8	S	4B	4.1		7	3.3	270	0.05	B	7	3.0T	N	1	Kanai, K		
12.84	817270	3.6	M	4B	5		7	3	270	0.08	B	20	4.0	Y	1	Oka, A		
12.84	817271	3			6		5		0.12	B		20	3.5	Y	1	Washi, S	b	
12.84	817272	3.5	S	4B	4.5		7		0.07	B		10	3.5	Y	1	Yasuki, M		
12.979	817273				2.3		7	4	0.254	N	6	61	4.7CT	Y	1	Bhadriah, L.H.E	c	

NOTE A Tail measurement refers to dust tail only.

NOTE B Tail centred on 270 deg. I got the impression that the dust tail was spiralling around the gas tail, which of course is impossible, all very strange.

NOTE C Gas tail at PA 265. Dust tail at PA 267.

NOTE D See drawing 1.

NOTE E Coma diameter 0.04.

NOTE F Coma diameter and tail length approximate.

NOTE G Cirrus.

NOTE H Tail length approximate.

NOTE I Bright, parabolic coma with sharply condensed center. Coma's boundaries diffuse. As twilight advances a sharp, almost stellar nucleus appears at the heart of the condensation. No particular structure evident within coma; object rather disappointing overall.

NOTE J Extinction correction applied.

NOTE K Coma diameter approximate. Tail length is lower limit.

NOTE L Comet 7 deg. lower than comparison stars.

NOTE M Exc. see

NOTE N Comet observed through breaks in cloud cover.

NOTE O South edge of tail sharp and distinct; north edge diffuse and concave to north. Mag. 7 star within southern edge of tail appears to be dimmed to 7.5 mag. Star is 1/2 deg. from central condensation.

NOTE P First tail is gas; second tail is dust.

NOTE Q PA approximate. Tail broader now?

NOTE R PA approximate. Sky slightly hazy. Calm.

NOTE S No stellar-like nucleus. No dark patch behind head in tail.

NOTE T Gas tail at PA 262.

NOTE U Dust tail at approximately PA 275.

NOTE V (Observer gave limit as 9.0. Ed.)

NOTE W DC = strong.

NOTE X PA 250 to 270.

NOTE Y m2 = 6.7.

NOTE Z Haze.

NOTE a Coma dia. Meter. Instrument type is Wright-Schmidt.

NOTE b Coma diameter uncertain and DC uncertain. (Observer indicated "Y" method. Ed.)

NOTE c First time saw immediately with naked eye.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
12.115	830920	4	0.08	B		11		5.1	1	Fleet, R.W	A
12.219	830921	0.45	0.114	N	3.7	13, 47	30	5.0	2	Gomez, T.L	B
12.434	830922	0.83	0.152	N	8	38		5.4	1	Cuthill, L	C
12.458	830923	0.55	0.065	R	15	50	19	5.5	2	Moreno, G	D
12.635	830924	0.17	0.30	N	5	60		5.8	2	Thompson, G	E
12.767	830925		0.102	N	6	24			1	Tregaskis, T.B	F
12.793	830926						5			McNaught, R.H	G

DATE: 12 MAR 1986

DATE: 12 MAR 1986

NOTE A Gas tail at PA 265. Dust tail at PA 267. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE B The coma have a densest zone to the east. [sic] With a 15 cm f/5, at 83x, the nucleus appears stellar.  
 NOTE C Coma DC = 9. Axis of head at PA 82. Tail at PA 230-290. The coma has become rather diffuse but still strong at the center. There is no evidence of a parabolic hood. The tail between PA 230 and 290 has widened since last observed on Mar. 1. Semi latus rectum = 2.5'. Vertex distance = 1.5'. Magnitude estimated to be 3.4 using 10x50 binoculars (Morris method).  
 NOTE D Twilight. Nucleus easy to see. Coma faint. Tail at PA 240, very faint.  
 NOTE E (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE F No stellar-like nucleus but good central condensation. Tail at PA 260. No dark lane visible in middle of tail immediately behind head as seen vaguely the previous morning at 1855 UT in the same telescope. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE G No inner envelope. 1820 UT inner coma blue/green as on previous few nights. Stellar nucleus. (Two unspecified magnifications used. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.037	851028	1.200	6	0.200	1.7 x 1.1	17.00	Kodak 2415		Y		7/P	1	Martinez,P	
12.048	851029	0.200	2.8		10.3 x 6.9	7.00	Fujichrome	400/	N		00/P	1	Association M31	
12.056	851030	0.135	2.5		15.2 x10.2	7.00	Fujichrome	400/	N	C	1/P	1	Martinez,P	
12.058	851031	1.200	6	0.200	1.7 x 1.1	1.67	Kodak 2415		Y		8/P	1	Martinez,P	
12.363	851032	0.230	4.5		8.9 x 6.0	15.00	3M 400	400/	N		22/P		Pizzi,R	
12.403	851033	3.00		1.00	0.7 x 0.5	3.00	IIa-O		N		10/P	1	Ferrin,I	A
12.415	851034	0.629	5.1	0.123		0.47	Fujicolor HR 1600/		N	X	3/P	4	Wallace,B.G	B
12.418	851035	0.135	2.8		15.2 x10.2	5.00	Ektachrome	400/	N		401/P		Gianforte,J.S	C
12.430	851036	0.629	5.1	0.123		4.80	Fujicolor HR 1600/		N	X	4/P	4	Wallace,B.G	D
12.435	851037	0.629	5.1	0.123		0.47	Fujicolor HR 1600/		N	X	5/P	4	Wallace,B.G	E
12.709	851038	0.050	2.8		39.6 x27.0	25.00	Agfachrome	1000/	N	O	1/S	1	Haagh,N	F
12.711	851039	0.024	1.8		73.7 x53.1	5.00	Kodak 2415		Y		01/P	1	McNaught,R.H	
12.729	851040	0.200	3.5		10.3 x 6.9	20.00	Agfachrome	1000/	N	O	3/S	1	Haagh,N	
12.756	851041	0.200	3.5		10.3 x 6.9	30.00	Kodak 2415		N	O	34/N	1	Haagh,N	
12.765	851042	0.055	1.2		36.2 x24.6	0.33	Ektachr.400		N		17/S	1	Tregaskis,T.B	G
12.766	851043	0.055	1.2		36.2 x24.6	0.67	Ektachr.400		N		16/S	1	Tregaskis,T.B	G
12.766	851044	0.055	1.2		36.2 x24.6	0.17	Ektachr.400		N		18/S	1	Tregaskis,T.B	G
12.777	851045	0.300	2.8		6.9 x 4.6	6.33	Sakura SR	1600/	N		11/P	2	Kojima,T	
12.800	851046	0.300	2.8		6.9 x 4.6	14.75	Kodak 6415		Y	C	12/P	2	Kojima,T	H
12.804	851047	0.675	2.7	0.25	3.1 x 2.0	6.00	Kodak 6415		Y	C	13/P	2	Kojima,T	I

NOTE A Instrument is Schmidt camera.  
 NOTE B (Observer's image identifier is G. Ed.)  
 NOTE C (Observer's image identifier is 114-1. Ed.) UT start time approximate.  
 NOTE D (Observer's image identifier is B. Ed.)  
 NOTE E (Observer's image identifier is H. Ed.)  
 NOTE F Wratten 1A UV filter used.  
 NOTE G Push processed to 800 ASA.  
 NOTE H Large format (120 size) film used.  
 NOTE I Instrument is Schmidt camera. Large format (120 size) film used.



DATE: 13 MAR 1986

DATE: 13 MAR 1986

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	
13.085	817274	3.8	M	4B	4.3	7	5.5	264	0.08	B		11	5.5	Y	1	Fleet,R.W		
13.090	817275	3.2	S	4B	4.5	7	4.25	270	0.08	B		30	5.6	Y	1	Campos,J	A	
13.090	817276	3.4	M	4B	4	8	5	260	0.04	B		12	5.3	Y	1	Renshaw,C		
13.097	817277	3.0		4B			5.00	275		EY			5.6	Y	1	Campos,J		
13.104	817278	3.1	S	4B	5.0	7	4.00	272	0.13	R	4	21	5.6	Y	1	Campos,J		
13.104	817279	3.0	B	4B		7	6	270	0.06	B		15	5.4	Y	2	Vincent,J	B	
13.108	817280	3.4	M	4B		6	4.0	271		EY			5.3	Y	1	Fleet,R.W		
13.156	817281	4.3	M	4B	13	7	4.2	275	0.07	B		20	6	Y	2	Tanti,T	C	
13.167	817282	4.2	M	4B	12	7	2	265	0.089	R	5.5	18	5.0	N	1	Ventura,F	D	
13.174	817283						1.8			EY			6	Y	2	Tanti,T	C	
13.227	817284	3.0		AAVSO			1.8		0.12	B		20	4.0		1	Ferrin,I		
13.354	817285	2.5	M	4B		9	8.5		0.05	B		20	4.8	Y	5	Diaz P.,E		
13.406	817286			122		3	1.5	210	0.05	B		20	4.6	Y	2	Ludewig O.,F.L	E	
13.432	817287									EY			4.5	Y	1	Stephan,C	F	
13.50	817288	3.0	B	4B	5	8	4	270	0.040	B		8	6.0	Y	1	Keen,R	G	
13.50	817289	3.0	V	4B			5	270		EY			6.0	Y	1	Keen,R	G	
13.535	817290	3.1	M	4B		3	18	138	0.080	B		11	5.6	Y	1	Glassett,W	H	
13.70	817291	3.3	S	4B					0.023	B		3	5.7			Jones,A		
13.70	817292					8	3.5		0.080	B		11				Jones,A	I	
13.70	817293				6.5				0.317	N	5	86				Jones,A		
13.73	817294	7.3	S	SAO					0.317	N	5	86				Jones,A	J	
13.743	817295	2.7		4C						EY			6.2	Y	1	Seargent,D		
13.75	817296	2.8		4B			10	261		EY			6	Y	11	Bouma,R.J	K	
13.75	817297	3.1	B	4B	8	7	4	270	0.05	B		10	6	Y	11	Bouma,R.J	L	
13.767	817298	3.0	B	4B		9	4.5	270	0.05	B		7	4.8	Y	3	Bembrick,C	M	
13.770	817299	3.4	S	4B	5	8	3	275	0.050	B		12		Y	1	Batza,H	N	
13.774	817300	3.6	S	4B	5		2.5	270	0.05	B		7	5.1	Y	1	Bryant,K	O	
13.781	817301	2.8		4B			3	260		EY				Y	1	Tregaskis,T.B	P	
13.781	817302	2.8	B	4B			5	260	0.05	B		10		Y	1	Tregaskis,T.B	P	
13.781	817303			4B	5	8		260	0.15	N	8	64		Y	1	Tregaskis,T.B	Q	
13.79	817304	2.8	B	4B			3.1			EY			6.0	Y		Clark,M.L	R	
13.82	817305	3.5	S	4B	10	7	3.1	271	0.25	N	5	38	6.0	Y		Clark,M.L		
13.82	817306	2.7	B	4B			5			EY			5.8	Y		Pearce,A		
13.82	817307	3.1	S	4B		5			0.030	B		8	5.8	Y		Pearce,A		
13.83	817308	3.7	S	AAVSO	5	6	1		0.13	N	6.3	24	5.0	Y	1	Hayashi,A	S	
13.997	817309				2.3	6			0.254	N	6	61	3	CT	Y	1	Bhadriah,L.H.E	T

NOTE A Gas tail at PA 264. Curved dust tail at PA 268. 2.2 deg. tail is fan from main tail to PA 287.

NOTE B General fuzziness suggesting violent motion in nucleus and central condensation. I got the impression that the dust tail was spiralling around the gas tail, which of course is impossible, all very strange.

NOTE C Seeing good, transparency excellent.

NOTE D Coma diameter approximate. Tail I PA 265.

NOTE E Binoculars method [sic] utilized for the encounter with the tail length. (Roughly translated by IHW staff. Ed.)

NOTE F 7x35 mm binoculars also used. Easy naked eye. In 7x35's, tail has blue tint.

NOTE G Extinction correction applied.

NOTE H Spectacular nucleus, coma and tail clearly visible at this time from desert site even with the naked eye. (PA value appears incorrect. Ed.)

NOTE I Tail PA 258-268. Also short tail PA 277. Tail brightness at 0.5 degrees from head, fainter than Sct cloud to naked eye.

NOTE J Nucleus (stars slightly defocused).

NOTE K Gas tail at PA 261. Dust tail at PA 270.

NOTE L Dust tail.

NOTE M South edge of tail sharp and distinct; north edge diffuse and concave to north.

NOTE N (Observer gave limit as 9.0. Ed.)

NOTE O DC = strong.

NOTE P PA approximate.

NOTE Q No stellar-like nucleus. Diffuse 5' round object 30' s.f. Halley (8 mag). PA approximate.

NOTE R Sky hazy.

NOTE S PA 245 to 275.

NOTE T Haze. Not visible naked eye except averted vision.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
13.085	830927	4	0.08	B		11		5.5	1	Fleet,R.W	A
13.365	830928		0.203	SC	5	113	30		4	Arpin,P	B
13.781	830929					76,304				McNaught,R.H	C
13.781	830930		0.152	N	8	64			1	Tregaskis,T.B	D

NOTE A Gas tail at PA 264. Dust tail at PA 268. Fan at PA 287. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Star, three jets indicated. Coma circular and blue. The central condensation is stellar. The star in the coma is much fainter than the coma.

NOTE C No colour, nucleus less stellar than yesterday. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Tail at PA 260. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
13.370	851048	0.050	2.8		39.6 x 27.0	5.00	Kodak 2415		Y	S	2/P	4	Dilsizian,R	A
13.410	851049	0.63	1.8	0.35	3.3 x 2.2	4.70	Agfachrome	50/	N		20/P	2	Ferrin,I	B
13.425	851050	0.200	3.8		10.3 x 6.9	15.00	3M 1000	1000/	Y	O	3/S	1	Soder,J	
13.583	851051	0.200	3.5		10.3 x 6.9	23.00	Agfachrome	1000/	N	O	48/S	1	Haagh,N	
13.714	851052	0.200	3.5		10.3 x 6.9	30.00	Kodak Tri-X	400/	N	O	35/N	1	Haagh,N	
13.730	851053	0.050	1.8		39.6 x 27.0	10.00	Kodak Tri-X	400/	N	O	37/N	1	Haagh,N	C
13.756	851054	0.200	3.5		10.3 x 6.9	45.00	Kodak 2415		N	O	39/N	1	Haagh,N	
13.783	851055	0.135	3.5		15.2 x 10.2	2.00	Ektachr.400		N	X	19/S	1	Tregaskis,T.B	D
13.876	851056	0.300	1.5		6.9 x 4.6	10.00	Kodak 2415		Y	S	1/P	1	Nassr,J.L	

NOTE A Some cloudiness appeared. Stellar guiding used because long focal lengths not used. Film was hypersensitized before leaving New York and remained frozen until used.

NOTE B Instrument is Schmidt camera.

NOTE C UV #1A filter used.

NOTE D Push processed to 800 ASA.

DATE: 14 MAR 1986

DATE: 14 MAR 1986

## 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
14.046	817310	3.0	M	4B					0.035	B		9	5.6	Y	1	Begbie,M.J.R	
14.052	817311				5.1	8		270	0.30	N	8.5	102	5.6	Y	1	Begbie,M.J.R	A
14.076	817312	3.3	M	4B			3.7	270		EY			5.5	Y	1	Fleet,R.W	
14.083	817313	2.9	B	4B		7	7	270	0.06	B		15	5.6	Y	2	Vincent,J	B
14.090	817314	3.7	M	4B	6.0	7	5.4	259	0.08	B		11	5.6	Y	1	Fleet,R.W	C
14.101	817315	3.3	M	4B	6	7	5	250	0.04	B		12	4.8	Y	1	Henshaw,C	D
14.120	817316	3.5	B	4B	30 20	7	5	270	0.065	B		20	6.4	Y	1	McBain,J	E
14.125	817317	3.0		4B						EY			5.5	Y	1	van der Mey,L	
14.125	817318						1.33	260	0.030	B		8	5.5	Y	1	van der Mey,L	F
14.125	817319						2.5	271	0.030	B		8	5.5	Y	1	van der Mey,L	G
14.13	817320	4.2	B	4B	6.5	8	1	250	0.05	B		7	3.1C	Y	2	Maraziti,A	H
14.153	817321	4.1	M	4B		7			0.07	B		20		Y	2	Tanti,T	I
14.293	817322	4.0	B	13		4			0.05	B		20	6.0	Y	1	Girardo,M.M	
14.294	817323	3.9	B	121	0.1	4	1.75		0.050	B		20	4.8	Y	1	Castrillon,M.E	
14.294	817324	4.1	B	122		4	2.8		0.050	B			6.0	Y	1	Lovera,A	
14.295	817325	4	B	122	6.3	4	2.97		0.050	B		20	5.9	Y	1	Siccardi,L	J
14.298	817326	4.2	B	122		4	2.97		0.05	B		20	6	Y	1	Carello,S	
14.385	817327	3.1	B	121	8	4	5.00	254	0.05	B		7	4.8	Y	1	Lairret,R	
14.403	817328	4.2	B	122		4	1.9	226	0.05	B		20	5.9	Y	2	Ludewig O.,F.L	
14.47	817329	3.4	B	4B	10	8	2		0.080	B		20		Y		Kronk,G	K
14.50	817330	3.1	B	4B	5	8	5	270	0.040	B		8	5.5	Y	1	Keen,R	L
14.50	817331	3.0	V	4B		6		270		EY			5.5	Y	2	Keen,R	L
14.507	817332	3.8					2		0.050	B		7	6	Y	2	Minton,R.B	M
14.51	817333	2.8	M	4B	7	7	0.5	245	0.080	B		20	5.0	Y	13	Morris,C.S	N
14.51	817334				7	7	5	270	0.050	B		10	5.0	Y	13	Morris,C.S	O
14.524	817335	3.1	M	4B		3	18	140	0.080	B		11	5.6	Y	1	Glassett,W	P
14.53	817336	2.7		4B, BSC		8	10.5	280		EY			5.0	Y	13	Morris,C.S	Q
14.5354	817337				10	6	3.13	264		EY			6.0	Y	12	Cook,A.J	
14.5417	817338	3.0	M	4B	10	6		264	0.05	B		7	6.0	Y	12	Cook,A.J	
14.729	817339	3.0		4B, 4C						EY			6	Y	1	Seargent,D	
14.729	817340				8	8			0.08	B		15				Seargent,D	
14.73	817341	2.9	4B			11	259			EY		6	Y	11	Bouma,R.J	R	
14.730	817342	3.0	S	122		9				EY		5.0	Y	1	Williams,P.F		
14.731	817343					8			0.05	B		7	6.5	Y	7	Garradd,G	S
14.750	817344	2.5	S	4B		5				EY		6.5	Y	7	Garradd,G	T	
14.76	817345	3.2	B	4B	8	7	4	272	0.05	B		10	6	Y	11	Bouma,R.J	U
14.777	817346		V						0.152	N	5	127				Seargent,D	V
14.78	817347	8.0:	V	121	0.1				0.152	N	5	127	6	Y	11	Bouma,R.J	W
14.781	817348	3.0	B	4B		9	4.0	265	0.05	B		7	5.5	Y	2	Bembrick,C	X

NOTE A Tail measurement refers to dust tail only.

NOTE B 1 deg. spike gas tail beyond 6 deg. dust tail. I got the impression that the dust tail was spiralling around the gas tail, which of course is impossible, all very strange.

NOTE C Gas tail at PA 261. Curved dust tail at PA 271. 3.2 deg. tail is fan from main tail to PA 287.

NOTE D Gas tail.

NOTE E Fainter than Beta Cap.

NOTE F Type I tail.

NOTE G Type II tail.

NOTE H Very low in the sky.

NOTE I Low. Haze. Clouds.

NOTE J Coma diameter and tail length approximate.

NOTE K Some twilight.

NOTE L Extinction correction applied.

NOTE M Used 7x50 binoculars out-of-focus. It was the same magnitude as Epsilon Aquarius (Epsilon Aqu = 3.8, type A0). Daniels Park is a dark site 8 miles south of my house.

NOTE N Differential extinction correction of -0.2 mag. was applied. Multiple tails define the shape of the fan tail which was brightest toward the west. The northern edge was sharply defined and brighter than much of the remaining fan.

NOTE O Tail much narrower in 5 cm binoculars.

NOTE P Spectacular nucleus, coma and tail clearly visible at this time from desert site even with the naked eye. (PA value appears incorrect. Ed.)

NOTE Q Differential extinction correction of -0.2 mag. was applied. Multiple tails define the shape of the fan tail.

NOTE R Gas tail at PA 259. Dust tail at PA 272.

NOTE S 8 deg. tail is gas; 5 deg. tail is dust.

NOTE T First tail is gas; second tail is dust.

NOTE U Dust tail.

NOTE V m2 = 8.

NOTE W Coma diameter is upper limit. Comparison stars 64 and 83.

NOTE X Condensation still stellar in 10 cm refractor and 25 mm eyepiece.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
14.076	830931	0.34	0.035	B		9	12	5.6	1	Begbie,M.J.R	A
14.090	830932	4	0.08	B		11		5.6	1	Fleet,R.W	B
14.365	830933	0.39	0.65	R	16.5	105	9	6.0	1	Ferrin,I	C
14.370	830934						5		1	Zanette,D	D
14.384	830935									McNaught,R.H	E
14.542	830936	0.17	0.30	N	5	60			2	Thompson,G	F
14.543	830937	3	0.050	B		7	5	6.0	12	Cook,A.J	G

NOTE A Gas tail knot at PA 262; dust tail PA 262-290. Excellent observing conditions. Drawing made near time of Giotto approach. Gas tail observed to have a knot about 5.5 degrees from the coma. Dust tail easily separable from gas tail. Longest part of dust tail (6.5 deg) in PA 285. Gas tail bluish, dust lemon yellow. (Telescopically, little activity in the coma.)

NOTE B Gas tail at PA 259. Dust tail at PA 271. Fan at PA 287. Suspected dust at PA 275. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C There was a fan of bright emission in the solar direction.

NOTE D Drawing made from a negative exposed 5 minutes on Agfapan 400 ASA, 50 mm lens. The large number of stars seen on the negative are depicted as they appear in the Atlas Coeli. The maximum magnitude estimated on the negative is approximately 8. Tail I is more diffuse than 11/03/86. Tail II is very narrow near the nucleus, widening farther away. Tail I is diffuse and wide, tail II is narrow and faint. (Translated by IHW staff. Ed.) Scale = 12.0"/mm.

NOTE E (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE F There is a small jet on the western edge of the nucleus. A prominent tail seemed to radiate directly back from the nucleus but not join the nucleus. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE G Slight interference from dawn.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
14.231	851057	0.135	1.8		15.2 x10.2	5.00	Kodak 2415		Y		22/P	3	Conrad,R	A

DATE: 14 MAR 1986

DATE: 14 MAR 1986

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
14.242	851058	0.055	2		36.2 x24.6	7.00	Fujichr. Pro	100/	Y		13/P	3	Conrad,R	B
14.299	851059	0.700	5	0.140	2.9 x 2.0	10.00	Tri-X Pro	320/	N	X	2/T	1	Travnik,N.A.S	C
14.367	851060	0.050	2.8		39.6 x27.0	6.00	Kodak 2415		Y	S	3/P	4	Dilsizian,R	D
14.503	851061	0.165	2.8		12.5 x 8.3	10.00	Kodak 2415		Y	S	113/P	3	Yen,B	E
14.516	851062	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	111/P	3	Yen,B	F
14.526	851063	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	112/P	3	Yen,B	G
14.527	851064	0.260	5.2	0.050	7.9 x 5.3	5.00	Kodak Tri-X	400/	N		29/C	8	Edberg,S.J	
14.528	851065	0.711	2.8	0.254	2.9 x 1.9	20.00	Kodak Plus-X	125/	N	S	46/P	1	Young,J.W	H
14.530	851066	0.260	5.2	0.050	7.9 x 5.3	1.00	Kodak Tri-X	400/	N		30/C	8	Edberg,S.J	
14.708	851067	0.180	2.8		11.4 x 7.6	12.25	Kodak 2415		Y	O	29/S	7	Garradd,G	
14.730	851068	0.050	1.8		39.6 x27.0	10.00	Kodak Tri-X	400/	N	O	38/N	1	Haagh,N	I
14.741	851069	0.085	2.4		23.9 x16.1	20.00	Kodak 2415		Y	O	30/S	7	Garradd,G	J
14.748	851070	0.200	3.5		10.3 x 6.9	40.00	Kodak Tri-X	400/	N	O	36/N	1	Haagh,N	
14.765	851071	0.180	2.8		11.4 x 7.6	15.83	Kodak 2415		Y	O	31/S	7	Garradd,G	
14.775	851072	0.180	2.8		11.4 x 7.6	9.83	Kodak 2415		Y	O	32/S	7	Garradd,G	

NOTE A Zodiacal light interfered with the observation.

NOTE B Zodiacal light interfered with the observation. UV filter used. (This probably means a UV blocking, clear glass filter. Ed.)

NOTE C Instrument is Zeiss Tessar. Format size 88 mm x 128 mm.

NOTE D Some cloudiness appeared. Stellar guiding used because long focal lengths not used. Film was hypersensitized before leaving New York and remained frozen until used.

NOTE E (Observer's image identifier is 11C = 2. Ed.)

NOTE F (Observer's image identifier is 11A = 12. Ed.) Instrument is Schmidt camera.

NOTE G (Observer's image identifier is 11B = 14. Ed.) Instrument is Schmidt camera.

NOTE H Instrument is Schmidt camera. (Observer's image identifier is followed suffix -HS. Ed.)

NOTE I UV #1A filter used.

NOTE J Lens aperture stopped down from f/2.0 to 2.4.

DATE: 15 MAR 1986

DATE: 15 MAR 1986

## 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
15.083	817349	3.5	B	4B	30 20	7	5	270	0.065	B		20	6.4	Y	1	McBain,J	A
15.083	817350	3.0	B	4B	10 8	5	7		0.06	B		15	5.6	Y	2	Vincent,J	B
15.090	817351	3.5	M	4B	9.0	7	9.1	260	0.08	B		11	5.7	Y	1	Fleet,R.W	C
15.101	817352	3.2	M	4B		7	4.0	269		EY			5.7	Y	1	Fleet,R.W	D
15.107	817353	3.0	M	4B					0.035	B		9	5.6	Y	1	Begbie,M.J.R	
15.114	817354				5.5	8		267	0.30	N	8.5	102	5.6	Y	1	Begbie,M.J.R	E
15.178	817355	3.2	S	121				249	0.05	B		7	3.9	Y	1	Benavides,A	
15.181	817356	2.3	B	121					0.05	B		7	6	Y	1	Galli,A	
15.201	817357	3.5	B	4B	11	7	4.5	255	0.03	B		8	5.5	Y	1	Gomez,T.L	F
15.21	817358	3.1	S	4B						EY			5.0		8	Shanklin,J.D	
15.23	817359	3.4	B	DCS 9					0.018	B		3	6.5	Y	8	Bus,E.P	
15.23	817360	3.2	S	DCS 9	12	7	10	264	0.018	B		3	6.5	Y	8	Bus,E.P	G
15.23	817361	3.4	S	DCS 8,9	5	6	10		0.050	B		10	6.5	Y	7	Comello,G	H
15.24	817362	2.7		DCS 9						EY			6.5	Y	8	Bus,E.P	
15.292	817363	3.5	B	121	0.1	4	2.80		0.050	B		20	4.8	Y	1	Castrillon,M.E	
15.292	817364	4.2	B	14		4			0.05	B		20	5.0	Y	1	Girardo,M.M	
15.292	817365	4.0	B	121		4	2.8		0.050	B		20	5.0	Y	1	Lovera,A	
15.293	817366	4.1	B	121		4	2.62		0.05	B		20	5	Y	1	Carello,S	
15.293	817367	4	B	122	7.3	4	2.8		0.050	B		20	5	Y	1	Siccardi,L	H
15.361	817368	3.2	B	121	4 2	4	2.93	247	0.05	B		7	4.8	Y	1	Lalret,R	
15.427	817369	3.4	M	4B	8	6	4.0	262	0.063	B		9	2.9	Y	1	DeYoung,J.A	I
15.438	817370	3.6	B	4B					0.08	B		11	4.2	Y	4	Gorski,L	
15.48	817371	3.2	B	4B	12	7	3	270	0.080	B		20		Y		Kronk,G	J
15.48	817372		B	4B	10.9	8			0.154	N	8.0	68		Y		Kronk,G	K
15.490	817373	3.0	B	4B	12	6	9.0	265	0.05	B		10	7.0	Y	3	Hays Jr,R.H	L
15.50	817374	2.8	B	4B		7	270			EY		6		Y	32	Hale,A	
15.510	817375	2.5	S	4B	38	9	2.5	267	0.035	B		7	4.5C	Y	1	Gronck,J.D	M
15.5174	817376	2.6	M	4B	10	6	7.70	266		EY		6.3		Y	13	Cook,A.J	N
15.70	817377	3.2	S	4B					0.023	B		3	5.0			Jones,A	O
15.70	817378					8	3.7		0.080	B		11				Jones,A	P
15.72	817379	2.9	S	SAO	10	7	7	270	0.05	B		7	6.0	Y	3	Ashdown,M	
15.729	817380	3.0	B	4B		9	4.0	265	0.05	B		7	5.5	Y	2	Bembrick,C	Q
15.733	817381	2.6	S	4B	10		18.5			EY			6.5	Y	1	Lovejoy,T	
15.765	817382	2.5	S	4B						EY			6.5	Y	7	Garradd,G	
15.771	817383					8			0.05	B		7	6.5			Garradd,G	R
15.78	817384	3.1	B	4B	10	7	5	260	0.05	B		10	6	Y	11	Bouma,R.J	S
15.78	817385	2.8	B	4B						EY		6		Y	11	Bouma,R.J	
15.78	817386	2.8	B	4B			3.7			EY			6.4			Clark,M.L	T
15.80	817387	3.2	S	4B			4.2		0.05	B		10	6.4	Y		Clark,M.L	
15.81	817388	3.6	S	4B	14	7	4.2	274	0.25	N	5	38	6.4	Y		Clark,M.L	U
15.81	817389	3.2	S	4B		6	7		0.08	B		11	4.5	Y	3	Momose,M	V
15.81	817390	2.8	B	4B		5				EY			5.8	Y		Pearce,A	
15.81	817391	3.0	S	4B		7			0.050	B		10	5.8	Y		Pearce,A	
15.833	817392	3.5	B	4B	5.1	8	3.7	265	0.05	B		7	3.5T	N	1	Kanai,K	

NOTE A Tail length estimated with averted vision.

NOTE B Comp. star Pi Sgr and Beta Cap. 7 deg. tail is gas, 5.5 deg. tail is dust, centre PA 267 deg.

NOTE C Gas tail at PA 260. Midpoints in dust tail: 2.4 deg. at PA 268; 3.6 deg. at PA 271. End point of dust tail: 4.7 deg. at PA 274. 2.9 deg. tail is fan from main tail to PA 280.

NOTE D Material up to PA 280.

NOTE E Tail measurement refers to dust tail only.

NOTE F See drawing 2.

NOTE G Gas tail exceeds 10 deg. at PA 264. Dust tail exceeds 7.5 deg. at PA 258-280.

NOTE H Coma diameter and tail length approximate.

NOTE I Sky hazy.

NOTE J Tail PA approximate.

NOTE K Coma structure to SW.

NOTE L Gas tail always more prominent than dust tail on March mornings. Maximum lengths were also noted with naked eye in March.

NOTE M Exc. see.

NOTE N South tail boundary 7.70 deg. at PA 259; greatest length 7.70 deg. at PA 266; north boundary 7.42 deg. at PA 274.

NOTE O Cloud curtailed observing.

NOTE P Tail PA 252-270. Bright nucleus in paraboloid coma/tail.

NOTE Q Condensation still stellar in 10 cm refractor and 25 mm eyepiece.

NOTE R 8 deg. tail is gas; 5 deg. tail is dust.

NOTE S Gas tail at PA 260. Dust tail at PA 270.

NOTE T Tails photo'd. to 8.5 deg. and 11.5 deg.

NOTE U Comet followed until 6 minutes prior to sunrise in 25 cm Newtonian at 120x. Light, patchy cloud was some hindrance. May have been able to follow it longer if no cloud.

NOTE V Saw moon with eye. 2 deg. [sic] (Translated by IHW staff. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
15.090	830938	4	0.08	B		11		5.7	1	Fleet,R.W	A
15.219	830939	0.55	0.114	N	3.7	47	30	5.5	1	Gomez,T.L	B
15.375	830940		0.203	SC	5	113	30		4	Arpin,P	C
15.498	830941	0.5	0.13	SC	10	32,120	15	6.5	3	Hays Jr,R.H	D
15.794	830942						6			McNaught,R.B	E

NOTE A Gas tail at PA 260. Dust tail end point at PA 274. Fan at PA 280. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Coma more luminous to the south.

NOTE C Three jets certainly indicated, two uncertain. The area between the uncertain jets is darker than the remaining part of the coma. The blue color of the coma is obvious. Central condensation is stellar.

NOTE D Fan or jet at PA 0; fan or jet at PA 180. 'Bow-tie' pattern evident around nucleus at 120x. Original sketch was made in early twilight.

NOTE E Two bright jets still visible. Nucleus very diffuse.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
15.305	851073	0.600	4.0		3.4 x 2.3	9.00	3M 1000	1000/	N		21/P		Pizzi,R	
15.314	851074	0.050	2.0			3.50	Kodak Tri-X	400/	N	C	4/P		Falsarella,N	
15.356	851075	0.050	2.8		39.6 x 27.0	5.00	Kodak 2415		Y	S	4/P	4	Dilsizian,R	A
15.499	851076	0.210	4		9.8 x 6.5	8.00	Konica	1600/	Y	S	4/S	1	Pacholka,W	
15.503	851077	0.210	4		9.8 x 6.5	8.00	Konica 1600		N		3/P	1	Pacholka,W	B
15.544	851078	1.830	6	0.305	1.1 x 0.8	5.00	Kodak 2415		Y		015/P	3	Royer,R	
15.546	851079	1.830	6	0.305	1.1 x 0.8	2.50	Kodak 2415		Y		014/P	3	Royer,R	C
15.713	851080	0.200	3.5		10.3 x 6.9	30.00	Kodak Tri-X	400/	N	O	40/N	1	Haagh,N	

DATE: 15 MAR 1986

DATE: 15 MAR 1986

Date(UT)	ACW#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
15.722	851081	0.180	2.8		11.4 x 7.6	20.00	Kodak 2415		Y	O	33/S	7	Garradd,G	D
15.739	851082	0.180	2.8		11.4 x 7.6	11.25	Kodak 2415		Y	O	34/S	7	Garradd,G	D

NOTE A Some cloudiness appeared. Stellar guiding used because long focal lengths not used. Film was hypersensitized before leaving New York and remained frozen until used.

NOTE B Push processed to 4000 ASA. (Start time appears to be approximate. Ed.)

NOTE C Red Wr. 29 filter used.

NOTE D Emulsion not sufficiently hypersensitized.

DATE: 16 MAR 1986

DATE: 16 MAR 1986

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
16.060	817393	3.1	M	4B					0.035	B		9	5.6	Y	1	Begbie,M.J.R	
16.069	817394				5.5	7		268	0.30	N	8.5	102	5.6	Y	1	Begbie,M.J.R	A
16.069	817395	3.5	M	4B	8.0	7	5.5	262	0.08	B		11	5.0	Y	1	Fleet,R.W	B
16.108	817396	3.3	M	4B		7	3.2	269		EY			5.0	Y	1	Fleet,R.W	
16.160	817397	3.0	S	4B	8	7	3		0.050	B		10	4.0T	N	7	Vanin,G	
16.170	817398	3.7	S	4B	7	6	1.4		0.15	B		25	4.0	Y	5	Parasio,R	C
16.18	817399	3.0	S	4B						EY			5.5		8	Shanklin,J.D	
16.23	817400	3.1	S	DCS 9	13	8	10	264	0.018	B		3	6.5	Y	8	Bus,E.P	D
16.23	817401	3.4	S	DCS 8,9	6	6	10		0.050	B		10	6.5	Y	7	Comello,G	E
16.24	817402	3.3	B	DCS 9					0.018	B		3	6.5	Y	8	Bus,E.P	
16.24	817403	2.7		DCS 9						EY			6.5	Y	8	Bus,E.P	
16.417	817404	3.6	M	4B	8	5	4.0	264	0.063	B		9	3.1	Y	1	DeYoung,J.A	F
16.451	817405	3.2	B	121					0.080	B		20	5.0	Y		Smith,D	G
16.497	817406	3.1	B	4B	12	5	10	260	0.05	B		10	7.0	Y	4	Hays Jr,R.H	H
16.50	817407	2.8	B	4B			7	270		EY			6	Y	30	Hale,A	I
16.510	817408	2.5	S	4B	38	9	2.5	267	0.035	B		7	4.5C	Y	1	Gronak,J.D	J
16.531	817409	4.0	S	4B	7	6	1	100	0.080	B		11	6	Y	7	Pryal,J	K
16.536	817410	3.0	M	4B		3	18	140	0.080	B		11	5.3	Y	1	Glassett,W	L
16.70	817411	3.4	S	4B					0.023	B		3	5.0			Jones,A	M
16.70	817412				9	7	3.7		0.080	B		11				Jones,A	N
16.729	817413	2.7	S	4B						EY			6.0	Y	6	Garradd,G	
16.73	817414	8.3	V	SAO					0.317	N	5	86				Jones,A	O
16.73	817415	7.8	S	SAO					0.317	N	5	86				Jones,A	O
16.735	817416					6			0.05	B		7				Garradd,G	P
16.781	817417	3.8	S	4B	6		2.5	270	0.05	B		7	5.1	Y	1	Bryant,X	Q
16.788	817418	2.8		4B			5	275		EY				Y	1	Tregaskis,T.B	R
16.788	817419	2.8	B	4B		8	5	275	0.050	B		10		Y	1	Tregaskis,T.B	S
16.788	817420			4B	6.3	8	0.5	275	0.15	N	8	64		Y	1	Tregaskis,T.B	T
16.795	817421	3.0	B	4B			10		0.05	B		7	6.0	Y	2	Hayashi,H	
16.798	817422	3.8	S	4B	4.4	7	2.9	260	0.05	B		7	3.5C	Y	1	Kanai,K	
16.80	817423	3.8	M	SAO	11	7	1.9		0.065	R	8	16	5.0	Y	5	Nakamura,A	U
16.80	817424	3.3	M	4B			6.0		0.05	B		7	5.5	Y	1	Suzuki,K	
16.80	817425			4B	3.9	1.6	5		0.25	B	4.2	88	5.5	Y	1	Suzuki,K	V
16.803	817426	4.1	B	4B	4.4	7	2.9	260	0.05	B		7	3.5C	Y	1	Kanai,K	
16.81	817427	3.3	S	4B		6	5		0.08	B		11	4.0	Y	3	Momose,M	
16.81	817428	3.0	B		15	7	2	255	0.05	B		10	5.0	Y	1	Uda,K	
16.816	817429	3.8	M	4B	4.0	7			0.08	B		11	4.5CT	Y	1	Mitsuma,S	W
16.816	817430								0.16	N	6.3	31	4.5CT	Y	1	Mitsuma,S	X
16.816	817431					3		265	0.05	B		7	4.5CT	Y	1	Mitsuma,S	
16.82	817432	3.7	S	AAVSO	6	5	1		0.13	N	6.3	24	5.5	Y	1	Hayashi,A	Y
16.874	817433	3.4	S	4B	20	5	10	270	0.07	B		10	4.0	Y	1	Kobayashi,J	

NOTE A Tail measurement refers to dust tail only.

NOTE B Gas tail at PA 262. Dust tail at PA 271. Between clouds.

NOTE C Tail PA 293, 303.

NOTE D Tail at PA 264 exceeds 10 deg. Tail 2 exceeds 7 deg. at PA 250-280.

NOTE E Tail length approximate.

NOTE F Sky hazy.

NOTE G Comet elevation 15 deg.

NOTE H Gas tail always more prominent than dust tail on March mornings. Maximum lengths were also noted with naked eye in March.

NOTE I Measured coma diameter 12' in 20 cm reflector, 61x.

NOTE J Exc. see.

NOTE K About 10 deg. above horizon. Difficult.

NOTE L Spectacular nucleus, coma and tail clearly visible at this time from desert site, even with the naked eye. (PA value appears incorrect. Ed.)

NOTE M Fair sky, coma/tail fairly symmetrical.

NOTE N 3.7 degree tail PA 264-267. 2.5 degree tail PA 259-271. Fairly symmetrical paraboloid coma/tail.

NOTE O Nucleus

NOTE P 6 deg. tail is gas; 4 deg. tail is dust.

NOTE Q DC = strong.

NOTE R Broad, fan shaped tail. PA approximate.

NOTE S PA approximate. (Observer gave limit as 10. Ed.)

NOTE T No stellar-like nucleus. Tail length is lower limit, PA approximate. (Observer gave limit as 12.5. Ed.)

NOTE U PA 250 to 280.

NOTE V Meter. (Coma diameter. Ed.) Instrument is Wright-Schmidt.

NOTE W m2 = 7.1.

NOTE X m2 = 8.5.

NOTE Y PA 255 to 260.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
16.069	830943	4	0.08	B		11		5.0	1	Fleet,R.W	A
16.502	830944	0.5	0.13	SC	10	32,120	15	6.5	4	Hays Jr,R.H	B
16.618	830945	0.17	0.30	N	5	60		6.0	2	Thompson,G	C
16.788	830946	0.31	0.152	N	8	64			1	Tregaskis,T.B	D
16.795	830947									McNaught,R.H	E

NOTE A Gas tail at PA 262. Dust tail at PA 271. Suspected fan at PA 280. Between clouds, observation incomplete. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Spike at PA approximately 240; fan at PA 30. Single 'fan' roughly NE of 'nucleus'. Conspicuous spike near S edge of gas tail. 'Nucleus' seemed less prominent than on 15th. Original sketch was also made in early twilight.

NOTE C Note the two jets emanating sunward and the separation of the tail. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Tail at PA 275. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E (Duration not indicated. Time of observation is assumed to be start time. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
16.318	851083	0.058	2		34.5 x23.4	5.00	Kodak Tri-X		N		1/P	1	Lopez,E.V.A	A
16.321	851084	0.058	2		34.5 x23.4	3.00	Kodak Tri-X		N		2/P	1	Lopez,E.V.A	B
16.334	851085	0.230	4.5		8.9 x 6.0	5.00	3M 400	400/	N		20/P		Pizzi,R	
16.574	851086	0.200	8		10.3 x 6.9	20.00	Fujichrome	400/	Y	X	102/P	3	Snyder,L.F	

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

NOTE B Start time approximate. (Observer's image identifier is B. Ed.)

DATE: 17 MAR 1986

DATE: 17 MAR 1986

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	
17.00	817434				10	7	4	260	0.05	R	4	7				Chernis,X		
17.063	817435	3.0	M	4B					0.035	B		9	5.4	Y	1	Begbie,M.J.R		
17.069	817436				5.7	8		275	0.30	N	8.5	102	5.4	Y	1	Begbie,M.J.R	A	
17.083	817437	3.0	B	4B	12	5	6		0.06	B		15	5.4	Y	2	Vincent,J	B	
17.093	817438	3.7	M	4B	3	7	2	250	0.04	B		12	5.3	Y	1	Henshaw,C	C	
17.10	817439	2.9	B	E	20	5	3.5	260	0.05	B		7				Mormil,V		
17.115	817440	3.4	M	4B		6	2.3	264		EY			5.7	Y	1	Fleet,R.W	D	
17.118	817441	3.8	M	4B	10	6	9.5	261	0.08	B		11	5.7	Y	1	Fleet,R.W	E	
17.128	817442	3.0		4B						EY			6.0	Y	1	van der Mey,L		
17.128	817443							3.33	255	0.050	B	7	6.0	Y	1	van der Mey,L	F	
17.128	817444							4.0	265	0.050	B	7	6.0	Y	1	van der Mey,L	G	
17.174	817445	4	S	4B	10	6			0.050	B		7		T	1	Mikuz,H	H	
17.287	817446	2.9	B	121	0.1	4	2.88		0.050	B		20	5.0	Y	1	Castrillon,M.E	I	
17.292	817447	4.0	B	121		4	2.97		0.05	B		20	5	Y	1	Carello,S		
17.342	817448	3.9	B	121	7.3	4	2.8		0.050	B		20	5.5	Y	2	Siccardi,L	J	
17.382	817449	3.4	B		8	3	3.60	244	0.05	B		7	4.0	Y	1	Lairret,R		
17.41	817450	3.5	B	4B	6	7	4.0	265	0.050	B		10	6.5	Y	1	Bortle,J.E	K	
17.41	817451	3.2	V	4B						EY			6.5	Y	1	Bortle,J.E	K	
17.422	817452	3.6	S	4B			1.8	265	0.035	B		7	5.0	Y	3	Morrison,W	L	
17.451	817453	3.2	B	121					0.080	B		20	5.2	Y		Smith,D	M	
17.5278	817454	3.0	M	4B	10	6	4.12	259	0.05	B		7	6.0	Y	14	Cook,A.J	N	
17.53	817455	2.8	M	4B, BSC		10		267		EY			5.0	Y	13	Morris,C.S	O	
17.53	817456	2.8	M	4B, BSC	8.4	7	5	270	0.050	B		10	5.0	Y	13	Morris,C.S	P	
17.67	817457	3.2	B	AA	10	0	7	120	0.05	B		10		Y	2	Campbell,R.N	Q	
17.70	817458	3.3	S	4B					0.023	B		3	5.5	Y		Jones,A	R	
17.70	817459				7	7	3.6		0.080	B		11				Jones,A	S	
17.719	817460	3.2	B	4B	7		5		0.05	B		7	5.8C	Y	1	Parkinson,M	T	
17.73	817461	8.5	V	SAO					0.317	N	5	86				Jones,A	U	
17.75	817462	3.3	B	4B	10	7	4.5	255	0.05	B		10	5.5	Y	11	Bouma,R.J	V	
17.75	817463	2.9		4B						EY			5.5	Y	11	Bouma,R.J		
17.753	817464	3.0		4C			3.5	262					5.5	Y	1	Seargent,D	W	
17.757	817465	3.2	B	4B		8	2.5	265	0.05	B		7	3.8	Y	3	Bembrick,C	X	
17.763	817466	3.1		4B			3	270		EY				Y	1	Tregaskis,T.B	Y	
17.763	817467	2.8	B	4B		8	4	270	0.05	B		10		Y	1	Tregaskis,T.B	Z	
17.763	817468			4B	5.9				0.15	N	8	64		Y	1	Tregaskis,T.B	a	
17.77	817469	2.7	S	4B			4.0			EY			6.0	Y	1	Lovejoy,T		
17.778	817470	3.6	S	4B	5		1.8	270	0.05	B		7	4.9	Y	1	Bryant,K	b	
17.799	817471	3.3	M	4B	5.7	7			0.12	N	6	36	3.0	Y	1	Kishi,A		
17.80	817472	3.0	S	4B		7	3		0.08	B		11	4.0	Y	3	Momose,M		
17.80	817473	3.0			15	7	1		0.23		4.4	40	4.0	Y	1	Washi,I	c	
17.80	817474	3.5			8	6	3		0.12	B		20	6.0	Y	1	Washi,S	d	
17.809	817475	3.6	M	4B	4.5	7			0.08	B		11	4.5C	Y	1	Mitsuma,S	e	
17.809	817476						3	270	0.05	B		7	4.5C	Y	1	Mitsuma,S		
17.81	817477	3.6	S	AAVSO	6	6	2		0.07	B		10	5.5	Y	1	Hayashi,A	f	
17.81	817478	3.0		4B	8	7	4		0.080	B		11		T	Y	1	Okuda,M	g
17.81	817479	3			10		0	270	0.09	M	10.1	40	3	Y	7	Tanikawa,M	h	
17.811	817480	3.5	M	4B	8.2	6	2.2	252	0.1	N	10	25	5.0	Y	1	Ichikawa,K		
17.813	817481	3.9	B	4B	4.4	8	2.9	270	0.05	B		7	3.5	Y	1	Kanai,K		
17.817	817482	3.8	S	4B	4.4	8	2.9	270	0.05	B		7	3.5	Y	1	Kanai,K		
17.82	817483	3.6	S	AAVSO	6	6	1.5		0.13	N	6.3	24	5.5	Y	1	Hayashi,A	i	
17.82	817484	3.1	M	4B		6	5.0		0.05	B		7	4.0	Y	1	Suzuki,K	j	
17.82	817485	3.8	M	4B	6.3	6	3	270	0.080	B		11	3	T	Y	1	Watanabe,N	
17.826	817486	3	B	4B			5		0.05	B		7	3.5	Y	1	Hayashi,H	j	

NOTE A Tail measurement refers to dust tail only.

NOTE B Tail triangular. PA 259 to 284.

NOTE C Haze. Gas tail 2 deg. at PA 250; dust tail 4 deg. at PA 270.

NOTE D Gas tail at PA 264. Dust tail at PA 280.

NOTE E Midpoint on gas tail: 4.4 deg. at PA 258. End point of gas tail: 9.5 deg. at PA 261. Midpoints of dust tail: 2.7 deg. at PA 272; 5.0 deg. at PA 275. End point of dust tail: 6.8 deg. at PA 280.

NOTE F Type I tail.

NOTE G Type II tail.

NOTE H Comet just above the horizon.

NOTE I Clouds in the area of the comet. (Translated by IHW staff. Ed.)

NOTE J Coma diameter and tail length approximate.

NOTE K Extinction correction applied.

NOTE L Comet altitude 7 deg., comparison stars' altitudes 11 deg., comet's uncorrected magnitude is 4.0.

NOTE M Comet elevation 15 deg.

NOTE N Tail 1 (PA 259). Tail 2 southern boundary length 3.88 deg. at PA 266; northern boundary length 3.22 deg. at PA 278; greatest length 4.25 deg. at PA 270.

NOTE O Differential extinction correction of -0.1 mag. was applied. Multiple tails define the shape of the fan tail. Fan was very faint.

NOTE P Differential extinction correction of -0.1 mag. was applied. Tail much narrower in binoculars.

NOTE Q Dark rural sky.

NOTE R Tail a little fainter than Sct cloud to naked eye.

NOTE S Tail PA 258-278.

NOTE T Tail length approximate.

NOTE U Nucleus.

NOTE V Gas tail at PA 255. Dust tail at PA 267.

NOTE W Haze.

NOTE X Both edges of tail diffuse.

NOTE Y PA approximate. Hazy cloud.

NOTE Z Tail length and PA approximate. Hazy cloud.

NOTE a No jets or other features seen. Tail barely visible.

NOTE b DC = strong.

NOTE c Instrument is Wright-Schmidt. (Observer indicated "Y" method. Ed.)

NOTE d Type II. (Observer indicated "Y" method. Ed.)

NOTE e m2 = 6.8.

NOTE f PA 260 to 280.

NOTE g (Observer indicated "Y" method. Ed.) H. 10 deg. cloudiness.

NOTE h Tail length approximate.

NOTE i PA 260 to 285.

NOTE j Cloud.

SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
17.118	830948	4	0.08	B		11		5.7	1	Fleet,R.W	A
17.374	830949		0.203	SC	5	113	27		4	Arpin,P	B
17.431	830950	0.83	0.152	N	8	38		5.5	1	Cuthill,L	C

DATE: 17 MAR 1986

DATE: 17 MAR 1986

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
17.533	830951	3	0.050	B		7	15	6.3	14	Cook,A.J	D
17.728	830952						143			McNaught,R.H	E

NOTE A Gas tail at PA 261. Dust tail end point at PA 280. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Five jets indicated. Coma circular and uniform and the central condensation is stellar and the color is blue. The tail is broad.

NOTE C Coma DC = 7. Axis of head at PA 75. Tail at PA 235-285. The inner coma has decreased in size since last observation (Mar. 12). Also outer coma looks weaker and fainter. Semi latus rectum - 2.5'. Vertex distance - 1.5'. Magnitude estimated using 10x50 binoculars is 3.3 (Morris method).

NOTE D Through holes in cumulus clouds.

NOTE E Nucleus not stellar, but sharper toward centre. (Drawings at 1617 UT and 1840 UT submitted. Duration not indicated. Time of observations are assumed to be start times. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
17.235	851087	0.135	1.8		15.2 x 10.2	7.00	Agfachr. Pro	1000/	N		19/P	4	Conrad,R	A
17.240	851088	0.055	2.8		36.2 x 24.6	10.00	Fujichr. Pro	100/	Y		14/P	4	Conrad,R	B
17.368	851089	0.230	4.5		8.9 x 6.0	10.00	3M 400	400/	N		26/P		Pizzi,R	
17.369	851090	0.63	1.8	0.35	3.3 x 2.2	8.00	Agfachrome	50/	N		21/P	2	Ferris,I	C
17.381	851091	0.230	4.5		8.9 x 6.0	1.50	3M 400	400/	N		23/P		Pizzi,R	
17.428	851092	0.052	2.8		38.2 x 26.0	2.50	Kodak 2415		Y	O	20/S	1	Lund,L	D
17.443	851093	0.200	4.5		10.3 x 6.9	1.50	Kodak Tri-X		N	T	7/C	2	Priester,D.C	E
17.444	851094	0.200	4.5		10.3 x 6.9	0.75	Kodak Tri-X		N	T	8/C	2	Priester,D.C	E
17.446	851095	0.058	1.4		34.5 x 23.4	0.25	Kodak Tri-X		N	T	9/C	2	Priester,D.C	E
17.447	851096	0.058	1.4		34.5 x 23.4	0.50	Kodak Tri-X		N	T	10/C	2	Priester,D.C	E
17.448	851097	0.058	1.4		34.5 x 23.4	1.00	Kodak Tri-X		N	T	11/C	2	Priester,D.C	E
17.529	851098	3.660	12	0.305	0.6 x 0.4	17.00	Kodak 2415		Y		016/P	3	Royer,R	F
17.543	851099	0.260	5.2	0.050	7.9 x 5.3	1.00	3M 1000	1000/	N	O	19/N	8	Edberg,S.J	
17.553	851100	1.830	6	0.305	1.1 x 0.8	8.00	Kodak 2415		Y		017/P	3	Royer,R	G
17.820	851101	1.760	5.8	0.300	1.2 x 0.8	10.00	Kodak 2415		Y		106/P	1	Niijima,T	H

NOTE A Zodiacal light interfered with the observation. Film "pushed" to 4000 ISO/37 DIN.

NOTE B Zodiacal light interfered with the observation. UV filter used. (This probably means a UV blocking, clear glass filter. Ed.)

NOTE C Instrument is Schmidt camera.

NOTE D Auxiliary lens used for image with FL = 4.180. Original instrument characteristics are FL = 1.530, f/6.

NOTE E Push processed to 800 ASA.

NOTE F Auxiliary lens used. Original instrument characteristics are FL = 1.83, f/6.

NOTE G Red Wr. 29 filter used.

NOTE H (Observer's image identifier is preceded by prefix Nj. Ed.)

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
17.434	870131	600G-O	CL	0.135	2.8		32.00	Kodak 2415		Y	C	205/S	4	Buchanan,W.T	A
17.535	870132	300G-N	R	0.485		0.088	10.00	Kodak Tri-X	400/27	N	O	31/C	8	Edberg,S.J	B

NOTE A City lights interfered with observation. (Observer's image identifier is E-122-05. Ed.) Window on front of instrument selected to correspond with aperture: 54 mm for f/2.8, 38 mm for f/4.8.

NOTE B Emission bands visible at measured wavelengths of 470 nm, 550 nm, 610 nm, and 654 nm.



DATE: 18 MAR 1986

DATE: 18 MAR 1986

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
18.00	817487	2.9	B	AAVSO	10	7	6	260	0.05	R	4	7				Chernis,K	
18.046	817488	3.6	M	4B					0.035	B		9	5.5	Y	1	Begbie,M.J.R	
18.054	817489				6.6	7		260	0.30	N	8.5	102	5.5	Y	1	Begbie,M.J.R	A
18.063	817490	3.2	M	4B			4.9	275		EY			5.7	Y	1	Fleet,R.W	
18.066	817491	3.4	M	4B	11	7	9.8	257	0.08	B		11	5.7	Y	1	Fleet,R.W	B
18.088	817492	3.6	M	4B	4	7	8	250	0.04	B		12	5.6	Y	1	Henshaw,C	C
18.149	817493	2.7	B	4B	20	7	5		0.07	B		20	5.5T	Y	1	Filimon,E	D
18.157	817494	3.5	B	4B	15	7	2.5		0.07	B		20	4.5T	Y	1	Filimon,E	
18.167	817495	4.2	M	4B	9	7			0.089	R	5.5	18	5.0	N	1	Ventura,F	E
18.170	817496	3.4	S	122	10.0	5	4.0	260	0.05	B		7	4.2T	Y	2	Maver,R	
18.170	817497	4.5	S	4B	10	6			0.050	B		7		T	1	Mikuz,H	F
18.180	817498		B	4B			1			EY			5.5T	Y	1	Filimon,E	G
18.199	817499	4.0	S	121				277	0.05	B		7	3.9		2	Benavides,A	
18.21	817500	3.3	S	DCS 8,9	6	7	10		0.018	B		3	6.5	Y	7	Comello,G	H
18.23	817501	3.2	S	DCS 9	15	7	10	263	0.018	B		3	6.5	Y	8	Bus,E.P	I
18.24	817502	3.4	B	DCS 9					0.018	B		3	6.5	Y	8	Bus,E.P	
18.24	817503	2.7		DCS 9						EY			6.5	Y	8	Bus,E.P	
18.293	817504	3.4	B	121	6	2	5	260	0.06	R	12	56	5.3	Y	1	Oofre D.,D	J
18.294	817505	3.2	B	121		4	2.8		0.050	B			5.6	Y	1	Lovera,A	
18.297	817506	3.0	B	121		4	2.8		0.050	B			6.1	Y	1	Lovera,A	
18.299	817507	2.9	B	121	0.1	4	2.88		0.050	B		20	5.5	Y	1	Castrillon,M.E	
18.332	817508					3			0.05	B		20	5.5	Y	2	da Silva,L.A.L	
18.347	817509	3.8	B	121	6.3	4	2.62		0.050	B		20	5.8	Y	2	Siccardi,L	K
18.41	817510	3.4	B	4B	7	6	3.5	267	0.050	B		10	6.5	Y	1	Bortle,J.E	L
18.41	817511	3.1	V	4B		6				EY			6.5	Y	1	Bortle,J.E	L
18.41	817512				5	6			0.317	N	6	55	6.5	Y	1	Bortle,J.E	M
18.417	817513	3.3	M	4B	8	5	3.5	270	0.05	B		7	3.3	Y	1	DeYoung,J.A	N
18.486	817514	3.1	B	4B	12	5	10	260	0.05	B		10	7.0	Y	5	Hays Jr,R.H	O
18.5035	817515	2.6	M	4B	9	6	7.48	260	0.05	B		7	6.3	Y	15	Cook,A.J	P
18.5083	817516	2.6	M	4B	10	6	10.35	270		EY			6.3	Y	15	Cook,A.J	Q
18.517	817517	3.0	M	4B		3			0.080	B		11	4.1	N	5	Glassett,W	
18.52	817518	2.8		4B, BSC		8	11	285		EY			5.0	Y	13	Morris,C.S	R
18.52	817519	2.9	M	4B, BSC	11	7	3	265	0.050	B		10	5.0	Y	13	Morris,C.S	S
18.53	817520	2.9	M	4B, BSC	10	7			0.080	B		20	5.0	Y	13	Morris,C.S	T
18.70	817521	3.3	S	4B		8			0.023	B		3	5.5	Y		Jones,A	U
18.70	817522				10	8	3.7		0.080	B		11				Jones,A	V
18.708	817523	2.9		4C	8	8		270					6.1	Y	1	Seargent,D	W
18.708	817524								0.08	B		15				Seargent,D	
18.72	817525	8.6	V	SAO					0.317	N	5	86				Jones,A	X
18.73	817526	3.2	B	4B	12	6	5	260	0.05	B		10	6	Y	11	Bouma,R.J	Y
18.73	817527	2.8		IRW 4B			9	260		EY			6	Y	11	Bouma,R.J	Y
18.771	817528	2.7	S	4B			7.5			EY			6.3	Y	1	Lovejoy,T	
18.99	817529	4.5	B	M	6	8	0.7		0.05	B		7				Konstantinov,S	

NOTE A Tail measurement refers to dust tail only.

NOTE B Gas tail disconnection? 2.3 deg. at PA 259. Gas tail at PA 257. Suspected gas tail 12.9 deg. at PA 257. Midpoints of dust tail: 2.0 deg. at PA 269; 3.5 deg. at PA 273. End point of dust tail: 7.2 deg. at PA 276.

NOTE C Gas tail 8 deg. at PA 250; dust tail 4.5 deg. at PA 270.

NOTE D Naked eye. Coma diameter approximate.

NOTE E Clouds interfere.

NOTE F Excellent conditions. Comet just above the horizon.

NOTE G Naked eye.

NOTE H Tail length approximate.

NOTE I Kink in gas tail, approximately 3 deg. from head, in PA 251 deg. measured from kink. Tail at PA 263 exceeds 10 deg. Tail 2 exceeds 7 deg. at PA 255-280.

NOTE J Cirrus.

NOTE K Coma diameter and tail length approximate.

NOTE L Extinction correction applied.

NOTE M At 68x: roughly parabolic coma with extremely vague outlines. Diffuse sunward fan of bright material extends a short distance from nucleus in a wide arc. At 110x fan is at least 120 deg. wide. Nucleus appears almost stellar.

NOTE N Sky hazy.

NOTE O Gas tail always more prominent than dust tail on March mornings. Maximum lengths were also noted with naked eye in March.

NOTE P Tail 1 (PA 260). Tail 2 southern boundary and greatest length at PA 270; tail 2 northern boundary 5.08 deg. at PA 280.

NOTE Q Tail 1 (PA 270); tail 2 (PA 280).

NOTE R Differential extinction correction of -0.1 mag. was applied. Multiple tails define the shape of the fan tail. Fan was very faint.

NOTE S Differential extinction correction of -0.1 mag. was applied. Multiple tails define the shape of the fan tail.

NOTE T Differential extinction correction of -0.1 mag. was applied.

NOTE U Coma wider than tail near head of comet.

NOTE V Tail PA 256-272. Tail a little fainter than Sct cloud to naked eye. Coma wider than tail near head (in 11x80 binoculars). Southern part of tail longer and brighter.

NOTE W Dust tail 5 deg. at PA 270, gas tail perhaps 9 deg. at PA 265.

NOTE X Nucleus.

NOTE Y Gas tail at PA 260. Dust tail at PA 270.

SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
18.066	830953	4	0.08	B		11		5.7	1	Fleet,R.W	A
18.088	830954	0.09	0.30	N	8.5	102,212,425	21	5.5	1	Begbie,M.J.R	B
18.424	830955	0.83	0.152	N	8	38		5.5	1	Cuthill,L	C
18.490	830956	0.5	0.13	SC	10	32,120	30	7.0	5	Hays Jr,R.H	D
18.507	830957	3	0.050	B		7	10	6.3	15	Cook,A.J	
18.794	830958	0.12	0.20	N	6.3	140			5	Lovejoy,T	E
18.804	830959									McNaught,R.H	F
18.973	830960	0.18	0.317	N	6.0	112	23	5.8	2	Soc. Astro. de France	G

NOTE A Gas tail at PA 257. Dust tail end point at PA 276. (Suspected) fan at PA 285. Disconnection? at PA 259. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Fan at PA 320-170; inner tail centred at PA 260. Vertex distance 3.5 arc min.; semi latus rectums P1 = 3.5 arc min. and P2 = 4 arc min. For internal envelopes: P1 = 2.8 arc min., P2 = 2.8 arc min. For "fan" feature P1 = 0.8 arc min., P2 = 1.4 arc min. Extremely prominent fan near central condensation symmetrical with sharply defined edges. Fan appeared distinctly yellow-orange in colour. Symmetrical internal envelopes appeared to 'flow' into a bright region of tail centred on PA 260.

NOTE C Coma DC = 7. Axis of head at PA 75. Tail at PA 230-275. The comet has not changed much in appearance since last observed (Mar. 17). Semi latus rectum - 2.5'. Vertex distance - 1.5'. Magnitude estimated to be 3.3 using 10x50 binoculars (Morris method).

NOTE D Fan or jet at PA 0; fan or jet at PA 180. 'Bow-tie' pattern around tiny 'nucleus' much like on 15th, except fan to north seemed more prominent than one to south.

NOTE E Scale is approximate. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE F Nucleus looks fairly stellar. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

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NOTE G Tail at PA 252, 6 deg. length (naked eye). Drawing made by Jean-Philippe Garztska.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
18.233	851102	0.055	2.8		36.2 x24.6	10.00	Fujichr. Pro	100/	Y		15/P	4	Conrad,R	A
18.330	851103	0.700	5	0.140	2.9 x 2.0	40.00	Tri-X Pro	320/	N	X	3/T	1	Travnik,N.A.S	B
18.413	851104	0.300	4.5		6.9 x 4.6	10.00	Kodak 2415		Y	S	1/C	3	Chester,G.R	C
18.433	851105	0.050	1.4		39.6 x27.0	1.00	Kodak VR	1000/	N	T	13/C	2	Priester,D.C	
18.434	851106	0.050	1.4		39.6 x27.0	0.50	Kodak VR	1000/	N	T	14/C	2	Priester,D.C	
18.436	851107	0.050	2.0			0.33	Fujicolor ER	1600/	N	X	14/P	4	Wallace,B.G	D
18.437	851108	0.100	2.8		20.4 x13.7	1.50	Kodak VR	1000/	N	T	15/C	2	Priester,D.C	E
18.439	851109	0.100	2.8		20.4 x13.7	3.00	Kodak VR	1000/	N	T	16/C	2	Priester,D.C	E
18.503	851110	0.165	2.8		12.5 x 8.3	10.00	Kodak 2415		Y	S	123/P	3	Yen,B	F
18.511	851111	0.260	5.2	0.050	7.9 x 5.3	10.00	3M 1000	1000/	N	O	20/N	8	Edberg,S.J	
18.516	851112	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	121/P	3	Yen,B	G
18.518	851113	0.260	5.2	0.050	7.9 x 5.3	5.00	3M 1000	1000/	N	O	21/N	8	Edberg,S.J	
18.524	851114	2.306	5	0.45	0.9 x 0.6	15.00	Kodak Tri-X		N	M	17/P	1	Webb,R	H
18.524	851115	0.200	4		10.3 x 6.9	15.00	Kodak Tri-X		N	M	18/P	1	Webb,R	I
18.528	851116	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	122/P	3	Yen,B	J
18.529	851117	0.260	5.2	0.050	7.9 x 5.3	6.75	Kodak Tri-X	400/	N		34/C	8	Edberg,S.J	
18.529	851118	0.500	5		4.1 x 2.7	3.00	Fujichr.1600		N		1/P	5	Sanford,J	K
18.532	851119	0.050	1.8		39.6 x27.0	1.00	Agfachrome	1000/	N		14/P	15	Cook,A.J	L
18.532	851120	0.050	1.8		39.6 x27.0	2.00	Agfachrome	1000/	N		15/P	15	Cook,A.J	M
18.536	851121	0.260	5.2	0.050	7.9 x 5.3	5.00	Kodak Tri-X	400/	N		35/C	8	Edberg,S.J	
18.536	851122	0.500	5		4.1 x 2.7	3.00	Fujichrome P	1600/	N		1/S	5	Sanford,J	
18.538	851123	0.260	5.2	0.050	7.9 x 5.3	1.00	Kodak Tri-X	400/	N		36/C	8	Edberg,S.J	
18.539	851124	1.830	6	0.305	1.1 x 0.8	9.00	Kodak 2415		Y		018/P	3	Royer,R	
18.549	851125	1.830	6	0.305	1.1 x 0.8	11.00	Kodak 2415		Y		019/P	3	Royer,R	N

NOTE A Zodiacal light interfered with the observation. UV filter used. (This probably means a UV blocking, clear glass filter. Ed.)

NOTE B Instrument is Zeiss Tessar. Format size 88 mm x 128 mm.

NOTE C (Observer's image identifier is 1A. Ed.)

NOTE D (Observer's image identifier is C. Ed.)

NOTE E Auxiliary Soligor lens used. Original instrument characteristics are FL = 0.050, f/1.4.

NOTE F (Observer's image identifier is 12C = 9. Ed.)

NOTE G (Observer's image identifier is 12A = 27. Ed.) Instrument is Schmidt camera.

NOTE H Wind vibration. Film pushed to ASA 1000. Standard 3 min.-3 min. processing.

NOTE I Windy. Film pushed to ASA 1000. Standard 3 min.-3 min. processing.

NOTE J (Observer's image identifier is 12B = 29. Ed.) Instrument is Schmidt camera.

NOTE K Start time very uncertain. "Push" processed 2 stops.

NOTE L Start time uncertain.

NOTE M Start time uncertain. Exposure duration uncertain.

NOTE N Red Wr. 29 filter used.

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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	817530	2.8	B	AAVSO	11	7	6	262	0.05	R	4	7				Chernis,K	
19.055	817531	3.7	M	4B	9	6	5	250	0.04	B		12	5.6	Y	1	Henshaw,C	A
19.077	817532	3.6	M	4B					0.035	B		9	5.3	Y	1	Begbie,M.J.R	
19.083	817533	2.9	B	4B	15 12	5	7.5	275	0.06	B		15	5.4	Y	2	Vincent,J	B
19.090	817534				7.7	7		261	0.30	N	8.5	102	5.3	Y	1	Begbie,M.J.R	C
19.090	817535	3.4	M	4B		6	3.7	278		EY			5.5	Y	1	Fleet,R.W	
19.094	817536	3.7	M	4B	11	6	8.9	297	0.08	B		11	5.5	Y	1	Fleet,R.W	D
19.167	817537			4B	20				0.05	B		10	3.0T	Y	2	Melandri,F	E
19.167	817538			4B	27	7			0.030	B		8	3.5T	Y	2	Villa,M	
19.174	817539	4.0	M	4B	17	7			0.05	B		12		Y	2	Tanti,T	F
19.175	817540	4.5	B			3			0.080	R	6.2	12	3.0	Y	1	Lieder,F	
19.23	817541	2.7		DCS 9						EY				Y	9	Bus,E.P	
19.23	817542	3.0	S	DCS 9	18	7	13	262	0.018	B		3	7	Y	9	Bus,E.P	G
19.23	817543	2.8		DCS 8,9			13			EY				Y	8	Comello,G	
19.23	817544	3.1	S	DCS 8,9	6	7	13		0.018	B		3	6.5	Y	8	Comello,G	
19.24	817545	3.2	B	DCS 9					0.08	B		3	7	Y	9	Bus,E.P	
19.297	817546	3.0	B	14		4			0.05	B		20	6.1	Y	1	Girardo,M.M	
19.299	817547	2.9	B	121	0.1	4	2.97		0.050	B		20	6.0	Y	1	Castrillon,M.E	
19.299	817548	3.8	B	121		4	2.97		0.05	B		20	6.1	Y	1	Carello,S	
19.314	817549	3.1	B	121		3	2.0	264	0.05	B		20	5.5	Y	1	da Silva,L.A.L	
19.316	817550	3.4	B	121	6	2	5	260	0.06	R	12	56	5.5	Y	1	Onofre D.,D	
19.371	817551	3.8	B	121	6.3	4	2.62		0.050	B		20	6.2	Y	2	Siccardi,L	H
19.375	817552						3.5		0.12	B		20	6.0		2	Ferrin,I	
19.4917	817553				9.1	6			0.14	SN	3.6	20	6.3	Y	15	Cook,A.J	
19.5118	817554	2.7	M	4B	10	6	9.32	261	0.05	B		7	6.3	Y	15	Cook,A.J	I
19.52	817555	3.0		4B, BSC		7	9	290		EY			5.0	Y	13	Morris,C.S	J
19.5208	817556	2.7	M	4B	9	6	4.07	257	0.05	B		7	6.3	Y	15	Cook,A.J	K
19.53	817557	3.1	M	4B, BSC	12.5	7	2	270	0.050	B		10	5.0	Y	13	Morris,C.S	L
19.53	817558								0.256	N	4.5	222	5.0	Y	13	Morris,C.S	M
19.54	817559	2.8	B	4B			7.5	270		EY			6	Y	22	Hale,A	
19.669	817560						4		0.05	B		7	6.0	Y	15	Garradd,G	N
19.674	817561	2.9	S	4B						EY						Garradd,G	
19.681	817562					6			0.31	N	5.4	129				Garradd,G	
19.71	817563	3.4	S	4B					0.023	B		3				Jones,A	O
19.71	817564				9	7	3.7		0.080	B		11				Jones,A	P
19.72	817565	3.0	S	4B	12	6			0.05	B		10	6	Y	11	Bouma,R.J	
19.72	817566	3.3	B	4B					0.05	B		10	6	Y	11	Bouma,R.J	
19.726	817567	2.9	S	4C			5	270		EY			6.0	Y	1	Seargent,D	
19.726	817568				11	7			0.08	B		15				Seargent,D	
19.73	817569	2.9		4B			9	260		EY			6	Y	11	Bouma,R.J	Q
19.750	817570	2.8		4B			3			EY				Y	1	Tregaskis,T.B	R
19.755	817571	2.8	B	4B		8	4		0.05	B		10		Y	1	Tregaskis,T.B	S
19.764	817572				9.9	6	0.67	285	0.15	N	8	64		Y	1	Tregaskis,T.B	T
19.767	817573	3.1	B	4B		8	2.0	265	0.05	B		7	3.5	Y	3	Bembrick,C	U
19.77	817574	2.7	S	4B	15		8.0			EY			6.3	Y	1	Lovejoy,T	
19.792	817575	4.0	S	4B	8	5	3	270	0.050	B		12		Y	1	Batza,H	V
19.792	817576	3.8	S	4B	6		2.2	260	0.05	B		7	5.4	Y	1	Bryant,K	W
19.80	817577	2.7	S		15	6	7	255	0.08	B		11	5.7	Y	2	Akita,I	
19.81	817578	3.9	M	SAO	13	7	2.2	265	0.065	R	8	16	4.5	Y	6	Nakamura,A	
19.81	817579	3.3	M	4B			7.0		0.05	B		7	6.0	Y	1	Suzuki,K	
19.81	817580			4B	3.9	5			0.25	B	4.2	88	6.0	Y	1	Suzuki,K	X
19.829	817581	3.5	S	4B	12	5	4	270	0.07	B		10	4.0	Y	1	Kobayashi,J	

NOTE A Length of spine 1 deg., PA of spine 240. Gas tail 5 deg. at PA 250; dust tail 3 deg. at PA 265.

NOTE B Comp stars Pl 5gr and Beta Cap. Cirrus cloud.

NOTE C Tail measurement refers to dust tail only.

NOTE D Midpoint of old gas tail: 4.0 deg. at PA 262. End point of old gas tail: 8.9 deg. at PA 257. New gas tail: 3.2 deg. at PA 259. Spike: 1.0 deg. at PA 258. Midpoints of dust tail: 2.8 deg. at PA 272; 5.3 deg. at PA 276. End point of dust tail: 8.3 deg. at PA 277.

NOTE E I haven't seen the tail with the binoculars.

NOTE F Clouds. Twilight.

NOTE G Gas tail approximately 13 deg. at PA 262. Dust tail exceeds 7 deg. at PA 248-280.

NOTE H Coma diameter and tail length approximate.

NOTE I Tail 1 (PA 261). Tail 2 greatest length and southern boundary at PA 268; tail 2 north boundary 7.25 deg. at PA 290.

NOTE J Differential extinction correction of -0.1 mag. was applied. Multiple tails define the shape of the fan tail. Tail was brighter on south side.

NOTE K Tail 1 (PA 257). Tail 2 south boundary 6.45 deg. at PA 260; tail 2 greatest length (PA 268); tail 2 north boundary 6.80 deg. at PA 279.

NOTE L Tail much narrower in binoculars.

NOTE M Jet activity was suspected toward PAs 90: and 180:. Condensation was offset toward the north.

NOTE N First tail is dust; second tail is gas.

NOTE O Cloud cleared away about dawn.

NOTE P Tail PA 260-282.

NOTE Q Gas tail at PA 260. Dust tail at PA 270.

NOTE R Tail single and not particularly broad.

NOTE S Omega Cen more impressive than Halley's comet.

NOTE T Tail length is lower limit. PA approximate: main tail - with fainter broad tail to N.

NOTE U Both edges of tail diffuse.

NOTE V Haze. (Observer gave limit as 8.5. Ed.)

NOTE W DC = strong.

NOTE X Meter. (Coma diameter. Ed.) Instrument is Wright-Schmidt.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
19.094	830961	4	0.08	B		11		5.5	1	Fleet,R.W	A
19.105	830962	0.20	0.30	N	8.5	102,212,425	29	5.3	1	Begbie,M.J.R	B
19.361	830963						5			Zanette,D	C
19.524	830964	3	0.050	B		7	10	6.3	15	Cook,A.J	
19.769	830965	0.60	0.152	N	8	64			1	Tregaskis,T.B	D
19.771	830966	0.15	0.30	N	5	176		6.0	2	Thompson,G	E
19.778	830967						10			McNaught,R.H	F

NOTE A Old gas tail end point at PA 257. New gas tail at PA 259. Spike at PA 258. Dust tail end point at PA 277. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Gas tail at PA 261. Fan centred at PA 90. Vertex distance 3 arc min. Semi latus rectums P1 = 3.5 arc min., P2 = 3.5 arc min. Nuclear jet approx. 30 arc sec. Coma appears very dusty. A prominent gas tail has appeared. Fan is less prominent than yesterday - material appears to be flowing into the tail.

NOTE C Drawing made from a negative exposed 5 minutes on Agfapan 400 ASA 50 mm lens. The large number of stars seen on the negative are depicted as they appear in Atlas Coeli. The maximum magnitude estimated on the negative is approximately 8. "Stylet" is

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curved and cut away to the south. (Translate IEN staff. Ed.) Scale = 11.9"/mm.

NOTE D Tail at PA 285. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E Note the prominent upward jets from the nucleus - one larger than the other. There is also a rift in the tail. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE F Tail about 6 deg. At 76x envelope and details quite indistinct.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
19.053	851126	0.300	1.5	0.203	6.9 x 4.6	8.00	Kodak 2415		Y	O	10/P	2	Soc. Astro. de France A	
19.107	851127	0.200	2		10.3 x 6.9	9.00	Kodak 103a-O		N	S	9/P	1	Dragesco,J	
19.488	851128	0.205	3.8		10.0 x 6.7	10.00	Kodak VR 200	200/	N	X	8/P	1	Cunningham,J	
19.491	851129	0.050	1.8		39.6 x27.0	1.00	Agfachrome	1000/	N		16/P	15	Cook,A.J	
19.493	851130	0.205	3.8		10.0 x 6.7	5.00	Kodak VR 200	200/	N	X	9/P	1	Cunningham,J	
19.494	851131	0.050	1.8		39.6 x27.0	2.00	Agfachrome	1000/	N		17/P	15	Cook,A.J	
19.501	851132	1.829	4.5	0.406	1.1 x 0.8	2.00	Kodak VR 200	200/	N	X	10/P	1	Cunningham,J	
19.505	851133	1.829	4.5	0.406	1.1 x 0.8	2.00	Kodak VR 200	200/	N	X	11/P	1	Cunningham,J	
19.510	851134	0.500	3.6	0.140	4.1 x 2.7	10.00	3M 1000	1000/	N	O	2/N	8	Edberg,S.J	
19.510	851135	0.085	3.8		23.9 x16.1	10.00	Ektachrome	400/	N	O	6/N	8	Edberg,S.J	B
19.516	851136	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	131/P	3	Yen,B	C
19.517	851137	0.500	3.6	0.140	4.1 x 2.7	5.00	3M 1000	1000/	N	O	3/N	8	Edberg,S.J	
19.520	851138	0.500	3.6	0.140	4.1 x 2.7	1.00	3M 1000	1000/	N	O	4/N	8	Edberg,S.J	
19.524	851139	0.500	5		4.1 x 2.7	10.00	Fujichrome P	1600/	N		2/S	5	Sanford,J	
19.524	851140	0.711	2.8	0.254	2.9 x 1.9	15.00	Kodak Plus-X	125/	N	S	48/P	1	Young,J.W	D
19.531	851141	0.260	5.2	0.050	7.9 x 5.3	10.00	3M 1000	1000/	N	O	5/N	8	Edberg,S.J	
19.531	851142	0.500	5		4.1 x 2.7	5.00	Fujichr.1600		N		2/P	5	Sanford,J	E
19.531	851143	0.165	2.8		12.5 x 8.3	10.00	Kodak 2415		Y	S	132/P	3	Yen,B	F
19.533	851144	2.306	5	0.45	0.9 x 0.6	13.00	Kodak Tri-X		N	M	19/P	1	Webb,R	G
19.534	851145	0.200	4		10.3 x 6.9	18.00	Kodak Tri-X		N	M	20/P	1	Webb,R	H
19.536	851146	0.260	5.2	0.050	7.9 x 5.3	4.58	3M 1000	1000/	N	O	6/N	8	Edberg,S.J	
19.538	851147	0.260	5.2	0.050	7.9 x 5.3	1.00	3M 1000	1000/	N	O	7/N	8	Edberg,S.J	
19.545	851148	1.830	6	0.305	1.1 x 0.8	12.00	Kodak 2415		Y		021/P	3	Royer,R	I
19.715	851149	0.180	2.8		11.4 x 7.6	19.50	Kodak 2415		Y	O	35/S	15	Garraadd,G	J
19.734	851150	0.135	3.5		15.2 x10.2	4.00	Ektachr.400		N	X	20/S	1	Tregaskis,T.B	K
19.740	851151	0.055	1.2		36.2 x24.6	1.00	Ektachr.400		N	X	21/S	1	Tregaskis,T.B	K
19.740	851152	0.055	1.2		36.2 x24.6	0.50	Ektachr.400		N	X	22/S	1	Tregaskis,T.B	K
19.741	851153	0.055	1.2		36.2 x24.6	2.00	Ektachr.400		N	X	23/S	1	Tregaskis,T.B	K
19.744	851154	0.085	2.0		23.9 x16.1	15.00	Kodak 2415		Y	O	36/S	15	Garraadd,G	J
19.762	851155	0.180	2.8		11.4 x 7.6	16.00	Kodak 2415		Y	O	37/S	15	Garraadd,G	J
19.777	851156	0.180	2.8		11.4 x 7.6	19.00	Kodak 2415		Y	O	38/S	15	Garraadd,G	J

NOTE A (Observer's image identifier is 4a. Ed.)

NOTE B 120 size film used (6x6 cm).

NOTE C (Observer's image identifier is 13A = 31. Ed.) Instrument is Schmidt camera.

NOTE D Instrument is Schmidt camera. (Observer's image identifier is followed suffix -HS. Ed.)

NOTE E "Push" processed 2 stops.

NOTE F (Observer's image identifier is 13B = 18. Ed.)

NOTE G Wind vibration/poor seeing. Film pushed to ASA 1000. Standard 3 min.-3 min. processing.

NOTE H Windy/soft focus? Film pushed to ASA 1000. Standard 3 min.-3 min. processing.

NOTE I Poor focus. Red Wr. 29 filter used.

NOTE J Temperature for hypersensitization 60-65 deg. C.

NOTE K Push processed to 800 ASA.

DATE: 20 MAR 1986

DATE: 20 MAR 1986

## 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	
20.00	817582	3.6	B	AAVSO					0.08	B						Churyumov,K		
20.00	817583	3.0	V	AAVSO						EY						Churyumov,K		
20.101	817584	3.9	M	4B	12	6	6.5	263	0.08	B		11				Fleet,R.W	A	
20.104	817585	3.4	M	4B		6	5.0	276		EY			5.6	Y	1	Fleet,R.W		
20.111	817586	3.5	S	4B	11.0	6	6.00	275	0.08	B		30	5.8	Y	1	Campos,J	B	
20.23	817587	2.9		DCS 8,9						EY			6.5	Y	8	Comello,G		
20.24	817588	2.6		DCS 9						EY			7	Y	8	Bus,E.P		
20.24	817589	3.2	B	DCS 9					0.018	B		3	7	Y	8	Bus,E.P		
20.24	817590	2.9	S	DCS 9	18	7	13	263	0.018	B		3	7	Y	9	Bus,E.P	C	
20.24	817591	3.2	S	DCS 8,9	6	7	12		0.018	B		3	6.5	Y	8	Comello,G		
20.292	817592	3.4	B	AAVSO		3	15.00	265	0.040	B		10	5.5	Y	1	Alves,A.A		
20.302	817593					4			0.05	B		20	6.5	Y	3	da Silva,L.A.L		
20.323	817594	3.4	B	121	6	2	6	260	0.06	R	12	56	5.5	Y	1	Onofre D.,D		
20.33	817595	3.8	B				6		0.35	B		7				Kiselev,N		
20.375	817596						4.0		0.12	B		20	6.0		2	Ferrin,I		
20.385	817597	4.4	M	4B	20.0	7	6.0		0.05	B		12	5.5	Y	2	Knight,S	D	
20.490	817598	3.3	B	4B	11	5	8.5	260	0.05	B		10	6.5	Y	6	Days Jr,R.H	E	
20.510	817599	2.4	S	4B	38	9	3	272	0.035	B		7	4.5C	Y	1	Gronck,J.D	F	
20.5104	817600	2.7	M	4B		6	7.5	270		EY			6.3	Y	15	Cook,A.J	G	
20.52	817601	2.8		4B, BSC		7	4	265		EY			5.0	Y	13	Morris,C.S	H	
20.53	817602	3.0	M	4B, BSC	14	7	7	270	0.050	B		10	5.0	Y	13	Morris,C.S	I	
20.692	817603	2.9	S	4B			8			EY			6.5	Y	2	Garradd,G		
20.694	817604						8		0.05	B		7	6.5	Y	2	Garradd,G	J	
20.701	817605					9			0.31	N	5.4	129				Garradd,G	K	
20.72	817606	3.0	S	4B	10	6			0.05	B		10	6	Y	11	Bouma,R.J		
20.72	817607	3.3	B	4B					0.05	B		10	6	Y	11	Bouma,R.J		
20.729	817608				8	8	0.25	5		0.08	B	15				Seargent,D	L	
20.729	817609	2.7	S	4C		8	0.25	262		EY			6.1	Y	1	Seargent,D	M	
20.729	817610				8	8	0.25	5		0.08	B	15				Seargent,D	L	
20.76	817611	2.8		4B			11	262		EY			6.5	Y	11	Bouma,R.J	N	
20.76	817612						0.25	5	0.080	B		15	6.5	Y	11	Bouma,R.J	O	
20.76	817613	2.6	S	4B	17		10.0			EY			6.3	Y	1	Lovejoy,T		
20.778	817614	3.2	B	4B		8	2.5	270	0.05	B		7	3.8	Y	3	Bembrick,C	P	
20.79	817615	4.0	S	AAVSO	4	5	3	275	0.07	B		10	5.5	Y	1	Hayashi,A		
20.792	817616	3.2	M	4B	7.6	6			0.12	N	6	60	3.0	Y	2	Kishi,A		
20.80	817617	3.2	S	4B					0.08	B		11	4.0	Y	3	Monose,M		
20.806	817618	3.4	M	4B	6.2	6	2.0	260	0.1	N	10	25	4.5	Y	1	Ichikawa,K		
20.819	817619	3.7	M	4B	7.5	7			0.08	B		11	4	T	Y	2	Mitsuma,S	Q
20.819	817620						4.5	270	0.05	B		7	4	T	Y	2	Mitsuma,S	
20.82	817621	3.8	S	AAVSO	6	5	2		0.13	N	6.3	24	5.0	Y	1	Hayashi,A	R	
20.83	817622	3.3	M	4B	5	7	4	270	0.08	B		20	4.5	Y	1	Oka,A		
20.833	817623	3.5	S	4B	6.7	6	0.4	280	0.05	B		7	2.5T	Y	1	Kanai,K		
20.838	817624	4.0	B	4B	6.7	6	0.4	280	0.05	B		7	2.5T	Y	1	Kanai,K		
20.99	817625	3.6	B	AAVSO						B						Churyumov,K		
20.99	817626	2.8	V	AAVSO						EY						Churyumov,K		

NOTE A Kink in gas tail: 5.3 deg. at PA 259. End point of gas tail: 6.5 deg. at PA 263. Midpoint of dust tail: 3.3 deg. at PA 274. End point of gas tail: 6.9 deg. at PA 282.

NOTE B Narrow, distinct bluish tail.

NOTE C Tail at PA 263 approximately 13 deg. Tail 2 exceeds 7 deg. at PA 255-290.

NOTE D Haze.

NOTE E Gas tail always more prominent than dust tail on March mornings. Maximum lengths were also noted with naked eye in March.

NOTE F Exc. see.

NOTE G Tail 1 at PA 270. Tail 2 greatest length at PA 280; tail 2 south boundary at 8.02 deg. at PA 274, north boundary at 6.20 deg. at PA 282.

NOTE H Differential extinction correction of -0.1 mag. was applied. Additional tail data: 9 degrees in PA 310; 5 degrees in PA 325; and 5 degrees in PA 0. Multiple tails define the shape of the fan tail. Tail lost in the Milky Way.

NOTE I Differential extinction correction of -0.1 mag. was applied. Tail much narrower in binoculars. Head shaped like a rounded "v" rather than parabolic.

NOTE J 8 deg. tail is gas; 4 deg. tail is dust.

NOTE K Very faint central condensation.

NOTE L Prob. anti-tail, length uncertain, PA approximate.

NOTE M 8 deg. tail length uncertain, PA approximate.

NOTE N Gas tail at PA 262. Dust tail at PA 273.

NOTE O PA value approximate.

NOTE P Both edges of tail diffuse.

NOTE Q m2 = 7.3.

NOTE R PA 260 to 280.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
20.101	830968	4	0.08	B		11		5.6	1	Fleet,R.W	A
20.112	830969	0.16	0.30	N	8.5	102,212,425	13	5.3	1	Begbie,M.J.R	B
20.731	830970						196			McNaught,R.H	C
20.802	830971	0.12	0.20	N	6.3	250			5	Lovejoy,T	D

NOTE A Gas tail kink at PA 259, end point at PA 263. Dust tail end point at PA 282. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Fan PA 30-120; tail (inner) at PA 259. Vertex distance 3.5 arc min.; semi latus rectums P1 = 3 arc min., P2 = 3 arc min.

NOTE C Symmetrical fan very like a fountain in shape. Coma symmetrical, but slightly elongated tailwards.

NOTE D Diffuse jet relatively faint but certain. Head looked almost stellar to naked eye about 4 1/2. Two drawings supplied.

NOTE E (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
20.026	851157	0.300	1.5	0.203	6.9 x 4.6	5.00	Fujichrome	400/	N	O	24/P	2	Soc. Astro. de France A	
20.053	851158	0.300	1.5	0.203	6.9 x 4.6	8.00	Kodak 2415		Y	X	1/P	1	Marafie,A.H	
20.108	851159	0.200	2		10.3 x 6.9	8.00	Kodak 2415		Y	S	10/P	1	Dragesco,J	B
20.334	851160	1.710	5.7		1.2 x 0.8	1.00	3M 1000	1000/	N		16/P		Pizzi,R	
20.337	851161	1.710	5.7		1.2 x 0.8	1.50	3M 1000	1000/	N		17/P		Pizzi,R	
20.341	851162	1.710	5.7		1.2 x 0.8	3.00	3M 1000	1000/	N		18/P		Pizzi,R	
20.390	851163	0.63	1.8	0.35	3.3 x 2.2	4.50	103a-F		N		5/P	2	Ferrin,I	C
20.415	851164	0.63	1.8	0.35	3.3 x 2.2	5.00	Agfachrome	50/	N		19/P	2	Ferrin,I	C
20.469	851165	0.050	1.8		39.6 x27.0	5.00	Agfachrome	1000/	N		18/P	15	Cook,A.J	
20.474	851166	0.050	1.8		39.6 x27.0	3.00	Agfachrome	1000/	N		19/P	15	Cook,A.J	
20.475	851167	1.829	4.5	0.406	1.1 x 0.8	5.00	Kodak VR 200	200/	N	X	15/P	1	Cunningham,J	
20.476	851168	0.050	1.8		39.6 x27.0	1.00	Agfachrome	1000/	N	S	20/P	15	Cook,A.J	

DATE: 20 MAR 1986

DATE: 20 MAR 1986

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
20.477	851169	1.829	4.5	0.406	1.1 x 0.8	3.00	Kodak VR 200	200/	N	X	16/P	1	Cunningham,J	
20.480	851170	0.050	1.8		39.6 x27.0	3.00	Agfachrome	1000/	N	S	21/P	15	Cook,A.J	
20.484	851171	1.829	4.5	0.406	1.1 x 0.8	10.00	Kodak VR 200	200/	N	X	17/P	1	Cunningham,J	
20.487	851172	0.085	3.8		23.9 x16.1	11.00	Ektachrome	400/	N	O	7/N	9	Edberg,S.J	D
20.489	851173	0.050	2		39.6 x27.0	12.00	3M 1000	1000/	N	O	8/N	9	Edberg,S.J	
20.493	851174	0.165	2.8		12.5 x 8.3	10.00	Kodak 2415		Y	S	142/P	3	Yen,B	E
20.495	851175	0.205	3.8		10.0 x 6.7	11.00	Kodak VR 200	200/	N	X	18/P	1	Cunningham,J	
20.497	851176	0.050	2		39.6 x27.0	5.00	3M 1000	1000/	N	O	9/N	9	Edberg,S.J	
20.501	851177	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	141/P	3	Yen,B	F
20.510	851178	0.050	2		39.6 x27.0	20.00	3M 1000	1000/	N	O	10/N	9	Edberg,S.J	
20.510	851179	0.050	2		39.6 x27.0	20.00	Kodak Tri-X	400/	N	O	4/C	9	Edberg,S.J	
20.514	851180	0.105	2.5		19.5 x13.0	15.00	Kodak EES	1600/	N		023/P		Royer,R	G
20.514	851181	0.508	5	0.100	4.1 x 2.7	15.00	Kodak IIA-D		N		025/P	6	Royer,R	H
20.518	851182	0.050	2		39.6 x27.0	1.00	3M 1000	1000/	N	O	11/N	9	Edberg,S.J	
20.518	851183	0.050	2		39.6 x27.0	1.00	Kodak Tri-X	400/	N	O	5/C	9	Edberg,S.J	
20.522	851184	0.711	2.8	0.254	2.9 x 1.9	19.00	Kodak Plus-X	125/	N	S	49/P	1	Young,J.W	I
20.523	851185	0.180	2.8		11.4 x 7.6	5.00	FujichromePZ		N		5/S	3	Sanford,J	J
20.525	851186	0.260	5.2	0.050	7.9 x 5.3	10.00	3M 1000	1000/	N	O	12/N	9	Edberg,S.J	
20.525	851187	0.050	2		39.6 x27.0	10.00	Kodak Tri-X	400/	N	O	6/C	9	Edberg,S.J	
20.528	851188	0.508	5	0.100	4.1 x 2.7	13.00	Kodak IIA-O		Y		024/P	6	Royer,R	K
20.530	851189	0.260	5.2	0.050	7.9 x 5.3	1.00	3M 1000	1000/	N	O	13/N	9	Edberg,S.J	
20.530	851190	0.180	2.8		11.4 x 7.6	5.00	Fujichr.1600		N		3/P	3	Sanford,J	L
20.531	851191	0.050	2		39.6 x27.0	2.00	Kodak Tri-X	400/	N	O	7/C	9	Edberg,S.J	
20.534	851192	0.180	2.8		11.4 x 7.6	7.00	FujichromePZ		N		4/S	3	Sanford,J	J
20.538	851193	0.508	5	0.100	4.1 x 2.7	10.00	Kodak 098		N		026/P	6	Royer,R	M
20.543	851194	0.200	8		10.3 x 6.9	10.00	Fujichrome	400/	Y	X	108/P	3	Snyder,L.F	
20.683	851195	0.180	2.8		11.4 x 7.6	20.00	Kodak 2415		Y	O	39/S	2	Garradd,G	N
20.706	851196	0.085	2.4		23.9 x16.1	9.33	Kodak 2415		Y	O	40/S	2	Garradd,G	O
20.742	851197	0.180	2.8		11.4 x 7.6	13.33	Kodak 2415		Y	O	41/S	2	Garradd,G	N

NOTE A (Observer's image identifier is 5d. Ed.)

NOTE B Haze.

NOTE C Instrument is Schmidt camera.

NOTE D 120 size film used (6x6 cm).

NOTE E (Observer's image identifier is 14B - 29. Ed.)

NOTE F (Observer's image identifier is 14A. Ed.) Instrument is Schmidt camera.

NOTE G About 8 deg. tail shown - ends near Zeta Sgr.

NOTE H Visual plate. Photograph made by S. Padilla and R. Royer. Wr. 4 filter used.

NOTE I Instrument is Schmidt camera. (Observer's image identifier is followed suffix -BS. Ed.)

NOTE J Push processed 2 stops. Normal ASA 1600.

NOTE K Apparent dust glow to north of comet may be spurious on hypered plate. Photograph made by S. Padilla and R. Royer.

NOTE L Start time very uncertain. "Push" processed 2 stops.

NOTE M Red plate. Wr. 29 filter used. Into dawn light. Photograph made by S. Padilla and R. Royer.

NOTE N Temperature for hypersensitization 60-65 deg. C.

NOTE O Lens aperture stopped down from f/2.0 to f/2.4. Temperature for hypersensitization 60-65 deg. C.

DATE: 21 MAR 1986

DATE: 21 MAR 1986

## 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
21.003	817627	3.4	B	4B	15	7	5	290	0.050	B		20	6.0	Y	2	Auckbur,R	A
21.014	817628	3.3	B	4B	15	7	5	290	0.050	B		20	6.0	Y	2	Auckbur,R	B
21.031	817629	3.4	B	4B	15	7	5	290	0.050	B		20	6.0	Y	2	Auckbur,R	B
21.089	817630	4.0	M	4B	7	6	6	260	0.04	B		12	5.6	Y	1	Henshaw,C	C
21.208	817631	3.7	B	4B			7	96		EY		5.5	Y	3	Thomas,A	D	
21.329	817632	3.2	B	121	0.1	4	2.80		0.050	B		20	4.5	Y	1	Castrillon,M.E	E
21.361	817633	4.5		121		3			0.114	N	8	39	4.9	Y	1	Levai,R	
21.399	817634	2.9	M	4B	10	6	4.0	274	0.05	B		7	4.9	Y	1	DeYoung,J.A	
21.40	817635	2.9	B	IHW BAA		7	3			EY						Green,D.W.E	F
21.416	817636	3.6	S	4B	12	6	1.7	270	0.035	B		7	5.0	Y	3	Morrison,W	G
21.42	817637	3.8	B	4B	13	7	2		0.080	B		20		Y		Kronk,G	
21.424	817638		B	4B		6			0.106	N	4.5	16	6.0	Y	1	Williams,D.J	H
21.427	817639	3.0	B	5B	35	8	3	302	0.20	SC	10	77	5.5	Y	1	Hodonsky,K	
21.427	817640	3.8	B	4B					0.08	B		11	4.2	Y	4	Gorski,L	
21.430	817641	4.5	B	4B	3.4	6			0.05	B		7	3.3C	Y	1	Dodd,W.J	I
21.441	817642	4.0	S	4B	14	6	1.4	280	0.030	B		7	5.0	Y	2	Jacobs,T	
21.448	817643	3.1	B	121					0.080	B		20	5.5	Y		Smith,D	J
21.458	817644	3.3	S	4B	60	3	7	101	0.080	B		11	5.8C	Y	2	Bailey,G	K
21.46	817645		B	4B	10.6	7			0.335	N	4.5	56		Y		Kronk,G	
21.472	817646	3.2	B	4B	14	5	8.5	260	0.05	B		10	7.0	Y	6	Hays Jr,R.H	L
21.48	817647	2.5	B	4B			7	270		EY			6.5	Y	2	Keen,R	M
21.49	817648	3.1	B	4B	10	6	7	270	0.040	B		8	6.5	Y	2	Keen,R	M
21.49	817649	2.8	S	DCS 9	15	6	3	270	0.050	B		10	5	Y	4	Zanstra,W.T	
21.510	817650	2.4	S	4B	38	9	2.5	272	0.035	B		7	4.5C	Y	1	Gronck,J.D	N
21.52	817651	3.0	M	4B, BSC	14	7	5		0.050	B		10	4.5C	Y	10	Morris,C.S	O
21.722	817652				15	7	0.25	7	0.05	B		10	6.2	Y	1	Seargent,D	P
21.722	817653	2.7	S	4C			6.5	270		EY			6.2	Y	1	Seargent,D	
21.735	817654	3.1	S	4B		6				EY			6.5	Y	2	Garradd,G	
21.737	817655					7			0.05	B		7				Garradd,G	Q
21.74	817656	2.7		4B		8		262		EY			6.5	Y	11	Bouma,R.J	R
21.74	817657	3.2	B	4B	14	7	0.25	7	0.05	B		10	6.5	Y	11	Bouma,R.J	
21.77	817658	2.6	S	4B			10.0			EY			6.5	Y	1	Lovejoy,T	
21.770	817659	2.9	S	159		9	1.5			EY			4.0	Y	1	Williams,P.F	
21.775	817660					9	3.5		0.05	B		10	4.0	Y	1	Williams,P.F	
21.78	817661	3.0	B	4B		5				EY			5.8	Y		Pearce,A	
21.792	817662	3.8	S	4B	6		2.2	270	0.05	B		7	5.1	Y	1	Bryant,K	S
21.80	817663	2.8	B	4B						EY			6.0	Y		Clark,M.L	T
21.81	817664	3.0	B		20	7	3	250		EY			5.0	Y	1	Uda,K	
21.814	817665	3.6	M	4B	9	5	1	270	0.030	B		8	4.0C	Y	1	Kato,T	
21.826	817666	4.0	M	4B	25	7	2.0	265	0.1	N	10	25	6.5	Y	1	Ichikawa,K	
21.83	817667	3.5	S	4B	16	7	3.6	276	0.25	N	5	38	6.0	Y		Clark,M.L	
21.99	817668	3.2	B	AAVSO					0.08	B						Churyumov,K	
21.99	817669	2.2	V	AAVSO			8	270		EY						Churyumov,K	

NOTE A My first report. PA found by plotting and measuring on a star chart.

NOTE B PA found by plotting and measuring on a star chart.

NOTE C Gas tail 6 deg. at PA 260, dust tail 3 deg. at PA 270.

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

NOTE E Little visible in simple view. (Roughly translated by IHW staff. Ed.)

NOTE F Tail length approximate.

NOTE G Comet altitude 8 deg., comparison stars' altitudes 13 deg., comet's uncorrected magnitude is 4.0.

NOTE H Tail length 6-8 deg. Very clear.

NOTE I Only used 2 comparison stars for magnitude estimate. Haze near horizon. No tail seen.

NOTE J Comet elevation 12 deg.

NOTE K Outstanding! but low on horizon. (PA value appears to be incorrect. Ed.)

NOTE L Gas tail always more prominent than dust tail on March mornings. Maximum lengths were also noted with naked eye in March.

NOTE M Extinction correction applied.

NOTE N Exc. see.

NOTE O Differential extinction correction of -0.2 mag. was applied. Multiple tails define the shape of the fan tail.

NOTE P Anti-tail.

NOTE Q First tail is gas; second tail is dust.

NOTE R Gas tail at PA 262. Dust tail at PA 271.

NOTE S DC = strong.

NOTE T Tails photo'd. to 8.3 deg and 10.8 deg.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
21.366	830972		0.203	SC	5	113		27	4	Arpin,P	A
21.394	830973	1.5	0.406	N	4.5	85		15 5.5	1	Nowak,G.T	B
21.424	830974		0.105	N	4.2	16		6.0		Williams,D.J	C
21.490	830975	0.5	0.13	SC	10	32,120		30 7.0	6	Hays Jr,R.H	D
21.783	830976									McNaught,R.H	E

NOTE A Three jets and a fountain indicated. Coma circular and uniform. Tail very broad and uniform from edge to edge.

NOTE B Dust tail at PA 45; gas tail at PA 0; antitail at PA 225.

NOTE C The nucleus is compact and bright (mag. 2). The tail is about 6-8 degrees in length. (Duration not indicated. Time of observation is start time. Ed.)

NOTE D Fan or hood at PA 0; fan or hood at PA 180. Vacant area at PA 90. Bright areas form birdlike pattern around 'nucleus'. Vacant area on sunward side of 'nucleus' was not totally dark, but dimmer than rest of coma. This dim area was obvious enough to be distracting. West end of bright open-wing pattern was very ill-defined.

NOTE E v. faint jet? Details v. faint. Near stellar nucleus. (Duration not specified. Time of observation assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
21.007	851198	0.300	1.5	0.203	6.9 x 4.6	11.00	Fujichrome	400/	N	O	27/P	2	Soc. Astro. de France	A
21.035	851199	0.300	1.5	0.203	6.9 x 4.6	8.00	Kodak 2415		Y	X	9/P	1	Marafie,A.H	B
21.225	851200	0.100	2.9		20.4 x 13.7	15.00	Kodak Tri-X	400/	N	T	33/P	2	Hernschier,W	C
21.325	851201	0.700	5	0.140	2.9 x 2.0	55.00	Tri-X Pro	320/	N	X	4/T	1	Travnik,N.A.S	D
21.401	851202	0.63	1.8	0.35	3.3 x 2.2	4.50	103a-F		N		6/P	2	Ferrin,I	B
21.408	851203	0.135	3.5		15.2 x 10.2	0.50	Kodak Tri-X	400/	N	X	55/P	1	Riguera,A	
21.418	851204	0.050	4.0		39.6 x 27.0	5.00	Ektachrome	400/	N		411/P		Gianforte,J.S	E
21.418	851205	0.135	2.8		15.2 x 10.2	5.00	Ektachrome	400/	N		410/P		Gianforte,J.S	F
21.425	851206	0.058	1.4		34.5 x 23.4	2.00	Kodak Tri-X		N	T	12/C	2	Priester,D.C	G
21.427	851207	0.058	1.4		34.5 x 23.4	1.00	Kodak Tri-X		N	T	13/C	2	Priester,D.C	G
21.428	851208	0.058	1.4		34.5 x 23.4	0.50	Kodak Tri-X		N	T	14/C	2	Priester,D.C	G
21.434	851209	0.200	4.5		10.3 x 6.9	1.50	Kodak Tri-X		N	T	16/C	2	Priester,D.C	G

DATE: 21 MAR 1986

DATE: 21 MAR 1986

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
21.435	851210	0.200	4.5		10.3 x 6.9	0.75	Kodak Tri-X		N	T	17/C	2	Priester,D.C	G
21.493	851211	0.210	4		9.8 x 6.5	10.00	Konica	1600/	Y	S	1/S	1	Pacholka,W	
21.497	851212	0.165	2.8		12.5 x 8.3	10.00	Kodak 2415		Y	S	152/P	3	Yen,B	H
21.502	851213	0.210	4		9.8 x 6.5	6.00	Konica 1600		N		6/P	1	Pacholka,W	I
21.503	851214	0.500	3.6	0.140	4.1 x 2.7	5.00	3M 1000	1000/	N	O	14/N	9	Eddberg,S.J	
21.503	851215	0.210	4		9.8 x 6.5	10.00	Konica 1600		N		5/P	1	Pacholka,W	I
21.505	851216	0.210	4		9.8 x 6.5	13.00	Konica 1600		N		4/P	1	Pacholka,W	I
21.508	851217	0.500	3.6	0.140	4.1 x 2.7	10.00	3M 1000	1000/	N	O	15/N	9	Eddberg,S.J	
21.509	851218	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	151/P	3	Yen,B	J
21.513	851219	0.500	3.6	0.140	4.1 x 2.7	1.00	3M 1000	1000/	N	O	16/N	9	Eddberg,S.J	
21.514	851220	0.500	3.6	0.140	4.1 x 2.7	0.50	3M 1000	1000/	N	O	17/N	9	Eddberg,S.J	
21.515	851221	0.210	4		9.8 x 6.5	13.00	Konica	1600/	Y	S	3/S	1	Pacholka,W	
21.522	851222	0.260	5.2	0.050	7.9 x 5.3	10.00	3M 1000	1000/	N	O	18/N	9	Eddberg,S.J	
21.522	851223	0.085	3.8		23.9 x16.1	10.00	Ektachrome	400/	N	O	11/N	9	Eddberg,S.J	K
21.526	851224	0.210	4		9.8 x 6.5	6.00	Konica	1600/	Y	S	5/S	1	Pacholka,W	
21.528	851225	0.400	6.3		5.2 x 3.4	4.00	Fujicolor HR	1600/	N		26/N	1	Persell,D	
21.531	851226	0.400	6.3		5.2 x 3.4	2.00	Fujicolor HR	1600/	N		27/N	1	Persell,D	
21.535	851227	0.400	6.3		5.2 x 3.4	2.00	Fujicolor HR	1600/	N		28/N	1	Persell,D	
21.537	851228	0.400	6.3		5.2 x 3.4	1.00	Fujicolor HR	1600/	N		29/N	1	Persell,D	
21.542	851229	0.400	6.3		5.2 x 3.4	2.00	Fujicolor HR	1600/	N		30/N	1	Persell,D	
21.543	851230	0.400	6.3		5.2 x 3.4	1.00	Fujicolor HR	1600/	N		31/N	1	Persell,D	
21.685	851231	0.085	2.0		23.9 x16.1	25.00	Kodak 2415		Y	O	42/S	2	Garradd,G	L
21.712	851232	0.180	2.8		11.4 x 7.6	10.50	Kodak 2415		Y	O	43/S	2	Garradd,G	L
21.725	851233	0.180	2.8		11.4 x 7.6	25.00	Kodak 2415		Y	O	44/S	2	Garradd,G	L
21.750	851234	0.180	2.8		11.4 x 7.6	30.50	Kodak 2415		Y	O	45/S	2	Garradd,G	L

NOTE A (Observer's image identifier is 6d. Ed.)

NOTE B Instrument is Schmidt camera.

NOTE C (Observer's image identifier is 3.3/86. Ed.) Photograph has been taken from the area of the Observatorio del Teide, Tenerife (Canary Islands).

NOTE D Instrument is Zeiss Tessar. Format size 38 mm x 128 mm.

NOTE E (Observer's image identifier is 114-11. Ed.) UT start time approximate.

NOTE F (Observer's image identifier is 114-10. Ed.) UT start time approximate.

NOTE G Push processed to 800 ASA.

NOTE H (Observer's image identifier is 15B. Ed.)

NOTE I Push processed to 4000 ASA. (Start time appears to be approximate. Ed.)

NOTE J (Observer's image identifier is 15A = 3. Ed.) Instrument is Schmidt camera.

NOTE K 120 size film used (6x6 cm).

NOTE L Temperature for hypersensitization 60-65 deg. C.



DATE: 22 MAR 1986

DATE: 22 MAR 1986

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	817670	3.0	B	AAVSO	9		7	267	0.05	R	4	7				Chernis,K		
22.01	817671	3.8	B	M	9				0.05	B		7				Konstantinov,S		
22.021	817672	3.3	M	4B			6	4.1	272	EY			5.7	Y	1	Fleet,R.W		
22.090	817673	3.6	M	4B	13		6	4.4	261	0.08	B	11	5.7	Y	1	Fleet,R.W		
22.094	817674	4.0	B	4B	30		7	5.5	270	0.076	R	18	56	6.1	Y	1	McBain,J	A
22.095	817675			4B	8		6		0.04	B			12	5.6	Y	1	Henshaw,C	B
22.113	817676	3.5	M	4B					0.035	B			9	5.3T	Y	1	Begbie,M.J.R	
22.118	817677	3.5	S	4B	7.0		7	5.00	262	0.13	R	4	21	5.7	Y	1	Campos,J	C
22.122	817678				8.2		8		259	0.30	N	8.5	102	5.3T	Y	1	Begbie,M.J.R	D
22.214	817679	3.5	M	4B	60		5	3	0.05	R	11	30		Y	2	Mendez,J	E	
22.249	817680	2.6	M	4B	60		8	10		EY			6.0	Y	5	Gallejo,J	F	
22.249	817681	3.0	M	4B	60		8		0.256	N	5.6	45	6.0	Y	5	Gallejo,J	G	
22.250	817682						6			EY			6.5		3	Martinez,C		
22.287	817683	3.0	B	145			4		0.050	B		20	5.5	Y	1	Castroillon,M.E		
22.361	817684	3.8	B	121	10		3		0.040	B		8	4.0	N	1	Levai,R		
22.363	817685						6		0.05	B		20	2.0	Y	1	da Silva,L.A.L		
22.385	817686	4.2	B	145	5.6		4	2.2	225	0.05	B	20	5.5	Y	2	Ludewig O.,F.L	I	
22.39	817687	3.3	B	IHW BAA					0.035	B		7				Green,D.W.E		
22.39	817688	3.4	B	IHW BAA					0.050	B		7				Green,D.W.E		
22.39	817689	3.1	S	IHW BAA	6		8		0.050	B		7				Green,D.W.E	J	
22.396	817690	3.6	S	4B	5.3		8		0.203	N	6	101	5.5	Y	3	Hudak,D.M		
22.410	817691	4.0	B	4B			1		0.035	B		7	5.0	Y	4	Gilchrist,D.K	K	
22.414	817692	3.4	S	4B	12		5	1.2	270	0.035	B	7	4.0	Y	3	Morrison,W	L	
22.417	817693	4.0	B	4B	10		6	1	0.15	N	8	60	5.0	Y	4	Gilchrist,D.K	M	
22.426	817694	4.0	B	4B	6.8		6		0.05	B		7	3.3C	Y	1	Dodd,W.J	N	
22.434	817695	3.1	B	145					0.080	B		20	5.5	Y		Smith,D	O	
22.438	817696	4.0	S	4B	14		6	1.2	280	0.030	B	7	4.5	Y	2	Jacobs,T		
22.441	817697	4.0	B	4B			6			EY			4.5	Y	2	Jacobs,T		
22.465	817698	3.4	B	4B	14		5	8.0	260	0.05	B	10	6.5	Y	7	Hays Jr,R.H	P	
22.48	817699	2.4	B	4B	20		6	7	270	EY			6.5	Y	3	Keen,R	Q	
22.495	817700	2.5	M	4B				9.17	270	EY			6.0	Y	16	Cook,A.J		
22.50	817701	2.6	B	BSC			7	13	275	EY			6.5	Y	26	Morris,C.S		
22.507	817702	3.3		4B				7		EY					19	Edberg,S.J	R	
22.510	817703	2.4	S	4B	38		9	2.5	273	0.035	B	7	4.5C	Y	1	Gronck,J.D	S	
22.51	817704	2.7	M	BSC				5	270	0.050	B	10	6.5	Y	26	Morris,C.S		
22.53	817705	2.9	B	4B				5	270	0.05	B	10	5.5M	Y	22	Hale,A	T	
22.53	817706							5	270	0.05	B	10	5.5M	Y	22	Hale,A	T	
22.604	817707	2.9	B	4B			5	2.6	280	EY			6.1	Y	5	Krisciunas,K	U	
22.70	817708	3.8	S	SAO	15		8	7	270	0.05	B	1	5	Y		Ashdown,M		
22.73	817709	2.7	B	4B						EY			6.1	Y	2	Clark,M.L	V	
22.75	817710	2.6	S	4B						EY			6.5	Y	11	Bouma,R.J		
22.75	817711	2.8	S	4B	14		7	6	258	0.05	B	10	6.5	Y	11	Bouma,R.J	W	
22.750	817712	2.6	S	4C				5	273	EY			6.1	Y	1	Seargent,D	X	
22.76	817713	3.1	B	4B					0.050	B		10	6.5	Y	11	Bouma,R.J		
22.76	817714	3.4	S	4B	17		7	3.6	284	0.25	N	5	38	6.1	Y	11	Clark,M.L	
22.77	817715				10			0.25	0	0.152	N	5	29	6.5	Y	11	Bouma,R.J	Y
22.77	817716	2.4	S	4B				9.0		EY			7.0	Y	1	Lovejoy,T		
22.771	817717	2.8		4B						EY				Y	4	Tregaskis,T.B	Z	
22.771	817718	2.8		4B			6		0.05	B		10		Y	1	Tregaskis,T.B	a	
22.785	817719	2.9	S	4B			5			EY			6.5	Y	2	Garradd,G	b	
22.788	817720						9		0.05	B		7				Garradd,G		
22.97	817721	2.7	B	AAVSO					0.08	B						Churyumov,K		
22.98	817722	2.0	V	AAVSO						EY						Churyumov,K		

NOTE A Kink at end of new gas tail: 4.4 deg. at PA 261. End of kink to old gas tail: 5.3 deg. at PA 263. End of old gas tail: 9.0 deg. at PA 263. Midpoint in dust tail 3.6 deg. at PA 276. End point of dust tail: 7.4 deg. at PA 280.

NOTE B Seeing good.

NOTE C Gas tail at PA 262. Dust tail at PA 277. Comet's motion against background stars was easily noticed after about 10 minutes of observing, at the eyepiece.

NOTE D Tail measurement refers to dust tail only.

NOTE E Visible naked eye. Coma diameter is lower limit. Tail length is lower limit.

NOTE F Superb sky.

NOTE G Stellar nucleus.

NOTE H Magnitude estimate uncertainty +/-0.2 mag.

NOTE I Clouds. (Translated by IHW staff. Ed.)

NOTE J Coma diameter approximate.

NOTE K Haze. Tail length is rough estimate.

NOTE L Comet altitude 9 deg., comparison stars' altitudes 14 deg., comet's uncorrected magnitude is 3.8.

NOTE M Haze. Coma diameter and tail length are rough estimations.

NOTE N No definite tail seen.

NOTE O Comet elevation 12 deg.

NOTE P Gas tail always more prominent than dust tail on March mornings. Maximum lengths were also noted with naked eye in March.

NOTE Q Extinction correction applied.

NOTE R Estimate made through window. Estimate made from MD-80 at 35000 ft. near Las Vegas, NV.

NOTE S Exc. see.

NOTE T Observation possibly affected slightly by moonlight.

NOTE U Tail length from photo.

NOTE V Tails photo'd. to 6.9 deg. and 13.4 deg.

NOTE W Gas tail at PA 258. Dust tail at PA 270.

NOTE X 5 deg. tail is dust tail. 6 deg. tail is ion tail.

NOTE Y PA value approximate.

NOTE Z Tail 3-4 deg. long. Seen briefly through drifting cloud.

NOTE a Tail length approximate. Seen briefly through drifting cloud.

NOTE b 9 deg. tail is gas; 6 deg. tail is dust.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
22.090	830977	4	0.08	B		11		5.7	1	Fleet,R.W	A
22.128	830978	0.09	0.30	N	8.5	102,212,425	9	5.3	1	Begbie,M.J.R	B
22.20	830979		0.356	SC	11	200				Soc. Astro. de France	C
22.205	830980							6.0	5	Cardiel,N	D
22.208	830981		0.256	N	5.6	45		6.0	5	Cardiel,N	E
22.249	830982		0.256	N	5.6	45			5	Gallejo,J	F
22.367	830983								1	Zanette,D	G
22.745	830984		0.254	N	6	61, 7	45			Pawlutschenko,B	H
22.780	830985						5			McNaught,R.H	I

NOTE A Gas tail kink at PA 261. Gas tail kink at PA 263. Gas tail end point at PA 263. Dust tail end point at PA 280. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

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- NOTE B Jet and fan centered PA 90, streamers centred at PA 272. Vertex distance 3.5 arc min.; semi latus rectums  $P_1 = 3.5$  arc min.,  $P_2 = 3.5$  arc min. For internal envelopes  $P_1 = 2.5$  arc min.,  $P_2 = 2.5$  arc min. Prominent jet and fan sunward of central condensation. Prominent internal envelopes apparent. Inner tail composed of several streamers flowing from coma. Drawing completed in twilight.
- NOTE C Drawing made by M. Verdenet (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)
- NOTE D Tail 8-10 deg. Naked eye observation. (Duration not indicated. Time of observation is assumed to be mid time. Ed.)
- NOTE E Stellar nucleus. The tail have an equal luminosity. [sic] (Duration not indicated. Time of observation is assumed to be mid time. Ed.)
- NOTE F Stellar nucleus perfectly visible. Two jets (?) in opposite sides of the "nucleus", one is long and narrow and the other is broad and diffuse.
- NOTE G Drawing made from a negative exposed 5 minutes on Agfapan 400 ASA, 50 mm lens. The large number of stars seen on the negative are depicted as they appear in the Atlas Coeli. Tail I has widened and is much larger. Tail II is seen brighter, widening farther from the nucleus. (Translated by IHW staff. Ed.) Scale = 12.1"/mm.
- NOTE H Distinctive lopsided fan protrusion; clear bright nucleus; 3-3.5 faint broad fantail; comet head. Between the hours of 4:30 am and 5:15 am EST on 23rd March 1986, the comet was noted to show a bright lopsided fan, protruding from the nucleus (which was comparable in clarity to nearby stars). The comet appeared to be larger in volume than on the previous observation on 11th March, 1986, but was fainter. The fantail extended out to 3-3.5 through averted vision and there was noticeable movement of the comet against the starry background, within a half hour period. However on the following morning between the hours of 3:40 am and 5:15 am EST on 24th March, 1986, the comet once again showed a hidden nucleus shrouded in dust that was unfocusable. 7x50 binoculars also used. (Drawing data inferred from written description. Ed.)
- NOTE I Bright near stellar nucleus which looks elongated in low power. Poor seeing but stars sharp in 28 mm. (Three drawings supplied. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdag	Id/Typ	Site	Observer(s)	Notes
22.207	851235	0.135	2.8		15.2 x10.2	10.00	Kodak 2415		Y	S	22/P	5	Portela,A	A
22.293	851236	0.700	5	0.140	2.9 x 2.0	15.00	Tri-X Pro	320/	N	X	5/T	1	Travnik,N.A.S	B
22.314	851237	0.105	3.5		19.5 x13.0	5.00	Kodak VR1000	1000/	N		1/P	1	Taylor,D.L	
22.323	851238	0.105	3.5		19.5 x13.0	10.00	Kodak VR1000	1000/	N		2/P	1	Taylor,D.L	
22.342	851239	0.700	5	0.140	2.9 x 2.0	65.00	Ektachrome	100/	N	X	1/S	1	Travnik,N.A.S	C
22.347	851240	0.63	1.8	0.35	3.3 x 2.2	4.00	103a-F		N		7/P	2	Ferrin,I	D
22.375	851241	0.198	4.5		10.4 x 6.9	5.00	3M 400	400/	N		25/P		Pizzi,R	
22.390	851242	0.198	4.5		39.6 x27.0	6.00	Kodak 2415		Y	S	25/P	1	Sabia,J.D	E
22.394	851243	0.300	4.5		6.9 x 4.6	10.00	Fujicolor	400/	C	X	1/P		Crossley,G	
22.399	851244	0.050	1.4		39.6 x27.0	6.00	Kodak 2415		Y	S	27/P	1	Sabia,J.D	F
22.406	851245	0.050	1.4		39.6 x27.0	7.00	Kodak 2415		Y	S	28/P	1	Sabia,J.D	
22.413	851246	0.300	4.5		6.9 x 4.6	10.00	Kodak 2415		Y	S	10/C	4	Chester,G.R	G
22.429	851247	0.058	1.4		34.5 x23.4	2.00	Kodak Tri-X		N	T	19/C	3	Priester,D.C	H
22.431	851248	0.058	1.4		34.5 x23.4	1.00	Kodak Tri-X		N	T	20/C	3	Priester,D.C	H
22.431	851249	0.058	1.4		34.5 x23.4	0.50	Kodak Tri-X		N	T	21/C	3	Priester,D.C	H
22.435	851250	0.200	4.5		10.3 x 6.9	4.00	Kodak Tri-X		N	T	22/C	3	Priester,D.C	H
22.438	851251	0.200	4.5		10.3 x 6.9	2.00	Kodak Tri-X		N	T	23/C	3	Priester,D.C	H
22.442	851252	0.100	2.8		20.4 x13.7	2.00	Kodak VR	1000/	N	T	17/C	3	Priester,D.C	I
22.443	851253	0.100	2.8		20.4 x13.7	1.00	Kodak VR	1000/	N	T	18/C	3	Priester,D.C	I
22.493	851254	0.165	2.8		12.5 x 8.3	10.00	Kodak 2415		Y	S	162/P	3	Yen,B	J
22.502	851255	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	161/P	3	Yen,B	K
22.502	851256	0.050	1.8		39.6 x27.0	3.00	Agfachrome	1000/	N	S	22/P	16	Cook,A.J	
22.507	851257	0.050	1.8		39.6 x27.0	8.00	Agfachrome	1000/	N	S	23/P	16	Cook,A.J	
22.524	851258	0.500	5		4.1 x 2.7	10.00	Fujichr.1600		N		5/P	3	Sanford,J	L
22.524	851259	0.500	5		4.1 x 2.7	10.00	FujichromePZ		N		6/S	3	Sanford,J	M
22.524	851260	2.000	10	0.200	1.0 x 0.7	0.50	Kodacolor	400/	N	S	23/N	1	Gronck,J.D	N
22.530	851261	0.500	5		4.1 x 2.7	5.00	Fujichr.1600		N		4/P	3	Sanford,J	O
22.530	851262	0.500	5		4.1 x 2.7	5.00	FujichromePZ		N		7/S	3	Sanford,J	M
22.726	851263	0.180	2.8		11.4 x 7.6	10.00	Kodak 2415		Y	O	46/S	2	Garradd,G	P
22.741	851264	0.180	2.8		11.4 x 7.6	19.50	Kodak 2415		Y	O	47/S	2	Garradd,G	P
22.769	851265	0.180	2.8		11.4 x 7.6	25.50	Kodak 2415		Y	O	48/S	2	Garradd,G	P
22.789	851266	0.024	3.5		73.7 x53.1	18.50	Kodak 2415		Y	O	49/S	2	Garradd,G	P

NOTE A (Time supplied by observer may have been start time or mid-exposure time Ed.)

NOTE B Instrument is Zeiss Tessar. Format size 88 mm x 128 mm.

NOTE C Instrument is Zeiss Tessar.

NOTE D Instrument is Schmidt camera.

NOTE E Gelatin 47A filter used.

NOTE F Gelatin 21 filter used.

NOTE G (Observer's image identifier is 10A. Ed.)

NOTE H Push processed to 800 ASA.

NOTE I Auxiliary Soligor lens used. Original instrument characteristics are FL = 0.050, f/1.4.

NOTE J (Observer's image identifier is 16B = 17. Ed.)

NOTE K (Observer's image identifier is 16A = 10. Ed.) Instrument is Schmidt camera.

NOTE L Start time approximate. "Push" processed 2 stops.

NOTE M Start time and exposure duration approximate. Push processed 2 stops. Normal ASA 1600.

NOTE N City lights interfered with the observation.

NOTE O "Push" processed 2 stops.

NOTE P Temperature for hypersensitization 60-65 deg. C.

DATE: 23 MAR 1986

DATE: 23 MAR 1986

## 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
23.156	817723	3.9	S	145				256	0.05	B		7	5.1		3	Benavides,A	
23.165	817724	3.6	S	122	9.0	6	2.0	265	0.08	B		15	3.8T	Y	2	Haver,R	
23.165	817725	3.2	S	122	12					EY			3.8T	Y	2	Haver,R	
23.167	817726			4B	20				0.05	B		10	3.0T	Y	1	Melandri,F	A
23.24	817727	2.7		DCS 9						EY			6.5	Y	7	Bus,E.P	
23.24	817728	3.1	S	DCS 9	17	7	10	264	0.018	B		3	6.5	Y	8	Bus,E.P	B
23.25	817729	3.3	B	DCS 9					0.018	B		3	6.5	Y	7	Bus,E.P	
23.250	817730	3.7		4B	25	6	6	95	0.050	B		10	5.5	Y	3	Thomas,A	C
23.322	817731	3.3	B	145		5	2.7	264	0.05	B		20	6.0	Y	6	da Silva,L.A.L	
23.323	817732	3.4	B	145	6	2	5	260	0.06	R	12	56	5.3	Y	1	Onofre D.,D	D
23.35	817733	3.8	B	AAVSO					0.04	B		7				Kiselev,N	
23.354	817734	2.6	M	4B		8	5.5		0.05	B		20	4.8	Y	1	Diaz P.,E	
23.392	817735	3.6	B	145	5.5	4	4.3		0.05	B		7	5.8	Y	3	Ludewig O.,F.L	
23.396	817736	3.7	S	4B		0		300	0.050	B		7	3.0	Y	1	Lifgren Jr,M	E
23.40	817737	3.0	S	IHW BAA	6				0.050	B		7				Green,D.W.E	F
23.40	817738	3.4	B	4B		5	4.0	270	0.050	B		10	5.5	Y	1	Bortle,J.E	G
23.41	817739	3.1	V	4B	11		3.0	270		EY				Y	1	Bortle,J.E	G
23.41	817740				8	6	1	270	0.120	B		20		Y	1	Bortle,J.E	
23.438	817741	2.5	S	4B	6	4			0.035	B		7	5	Y	1	Lewis,D.E	
23.47	817742	3.6	B	4B	10	8	1.5	300	0.080	B		20		Y		Kronk,G	H
23.5174	817743	2.7	M	4B	10	6	5.3	264		EY			6.0	Y	16	Cook,A.J	I
23.5208	817744	2.7	M	4B	10	6	5.38		0.05	B		7	5.5	Y	16	Cook,A.J	J
23.69	817745	3.1	S	4B					0.023	B		3				Jones,A	K
23.69	817746						3.5		0.080	B		11				Jones,A	L
23.74	817747	2.7		4B/C			12	258		EY			6.5	Y	11	Bouma,R.J	M
23.74	817748	3.2	B	4B/C	16	6	0.33	5	0.05	B		10	6.5	Y	11	Bouma,R.J	
23.74	817749	2.6	S	4B	20		12.0			EY			6.3	Y	1	Lovejoy,T	
23.743	817750	2.7	S	4C						EY			6.2	Y	1	Seargent,D	
23.743	817751				15				0.08	B		15				Seargent,D	
23.778	817752					6			0.05	B		7	6.5	Y	2	Garradd,G	N
23.780	817753	2.9	S	4B						EY						Garradd,G	
23.792	817754	3.3	S	4B	9	5	3	270	0.050	B		12		Y	1	Batza,H	O
23.83	817755	3.2	M	4B					0.05	B		7	4.5M	Y	2	Suzuki,K	
23.837	817756	3.5	S	4B	20	5	6	270	0.07	B		10	5.5	Y	1	Kobayashi,J	

NOTE A I haven't seen the tail with the binoculars.

NOTE B Tail at PA 264 exceeds 10 deg. Tail 2 exceeds 6.5 deg. at PA 250-285.

NOTE C Tail length approximate. (Observer indicated "A" method [Argelander?]. Ed.)

NOTE D Cirrus.

NOTE E Unspectacular tail. (PA value appears to be incorrect. Ed.)

NOTE F Coma diameter approximate.

NOTE G Extinction correction applied.

NOTE H Tail PA approximate.

NOTE I Tail greatest length and south boundary at PA 264; tail north boundary 5.3 deg. at PA 276.

NOTE J Tail south boundary at PA 259; tail north boundary at PA 280.

NOTE K Brief clearing in clouds.

NOTE L Tail PA 258-280.

NOTE M Gas tail at PA 258. Dust tail at PA 270.

NOTE N 6 deg. tail is gas; 5 deg. tail is dust.

NOTE O Clouds. (Observer gave limit as 8.5. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
23.420	830986	3.0	0.040	B		8	20	4.5	1	Bailey,G	A
23.442	830987		0.203	N	6	40	12	6.5	7	Troiani,D.M	B
23.524	830988	3	0.050	B		7	10	5.5	16	Cook,A.J	C
23.536	830989	0.46	0.41	N	5	113	15	6.5	1	Levy,D.H	D
23.792	830990	0.13	0.20	N	6.3	250			5	Lovejoy,T	E
23.793	830991									McNaught,R.H	F

NOTE A Tail PA 92.

NOTE B Transparency (1-5): 5. Seeing (1-3): 5. [sic] Sky darkness (1-5): 5. Streamer PA 270 deg. DC = 6.5. Nucleus was star-like. Tail was visible for just over 3 deg. long. [sic]

NOTE C Dawn interference.

NOTE D Scale is approximate.

NOTE E (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE F V. faint near stellar nucleus. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
23.026	851267	0.300	1.5	0.203	6.9 x 4.6	5.00	Kodak 2415		Y	X	10/P	1	Marafie,A.H	A
23.110	851268	0.200	2		10.3 x 6.9	8.00	Kodak 103a-E		N	S	12/P	1	Dragesco,J	
23.363	851269	0.63	1.8	0.35	3.3 x 2.2	10.00	Kodak 2415		N		8/P	2	Ferrin,I	A
23.368	851270	0.050	1.4		39.6 x 27.0	0.25	Kodak Tri-X	400/	N		7/P	1	Pena,E.D	
23.377	851271	0.149	4.5		13.8 x 9.2	4.00	3M 400	400/	N		24/P		Pizzi,R	
23.385	851272	2.30	10	0.23	0.9 x 0.6	60.00	ORWO ZU-21		N	O	1/P	1	Zalles,R	B
23.406	851273	0.050	1.4		39.6 x 27.0	0.25	Kodak Tri-X	400/	N	X	36/P	1	Rodriguez,J	
23.462	851274	0.205	4		10.0 x 6.7	5.00	Fujicolor	1600/	N	X	1/P	1	Tuten,J	C
23.736	851275	0.085	2.8		23.9 x 16.1	24.17	Kodak 2415		Y	O	50/S	2	Garradd,G	D
23.752	851276	0.180	2.8		11.4 x 7.6	6.00	Kodak 2415		Y	O	51/S	2	Garradd,G	E
23.761	851277	0.180	2.8		11.4 x 7.6	5.00	Kodak 2415		Y	O	52/S	2	Garradd,G	E
23.770	851278	0.180	2.8		11.4 x 7.6	20.00	Kodak 2415		Y	O	53/S	2	Garradd,G	E
23.789	851279	0.180	2.8		11.4 x 7.6	19.50	Kodak 2415		Y	O	54/S	2	Garradd,G	E

NOTE A Instrument is Schmidt camera.

NOTE B Astronomical emulsion used.

NOTE C City lights. Photograph made by M. Searles and J. Tuten.

NOTE D Lens aperture stopped down from f/2.0 to f/2.8. Temperature for hypersensitization 60-65 deg. C.

NOTE E Temperature for hypersensitization 60-65 deg. C.

DATE: 24 MAR 1986

DATE: 24 MAR 1986

## 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	
24.119	817757	4.1	M	4B	11	5	5	250	0.04	B		12	5.6	Y	1	Henshaw,C	A	
24.146	817758	2.9	B	4B	25	7	5			EY			5.5	N	3	Fischer,D	B	
24.146	817759	2.8	M	4B	28				0.030	B		8	5.5	Y	10	Villa,M		
24.149	817760	4.3	M	4B	13	7			0.07	B		20		Y	2	Tanti,T	C	
24.150	817761	3.9	S	145				261	0.05	B		7	5.1	Y	3	Benavides,A		
24.160	817762			4B					0.030	B		8	5.5	Y	10	Villa,M		
24.336	817763	3.1	B	145	6	3		8.5	255	0.06	R	12	56	5.5	Y	1	Onofre D.,D	
24.357	817764	3.4	B		8	4		2.40	255	0.05	B		7	3.8			Lalret,R	
24.358	817765	3.1	B	4B		6			0.050	B		7	5.5	Y	1	Ocampo M.,N		
24.411	817766	4.2	S	4B	11	5			0.035	B		7	4.2M	N	3	Morrison,W	D	
24.441	817767	3.9	B	4B	6.8	5			0.05	B		7	3.3MTC	Y	1	Dodd,W.J	E	
24.72	817768	3.3	S	4B					0.023	B		3	5.5			Jones,A	F	
24.72	817769					8	3.2		0.080	B		11				Jones,A	G	
24.722	817770	3.3:		4B						EY				Y	1	Tregaskis,T.B	H	
24.74	817771	8.3	V	SAO					0.317	N	5	86				Jones,A	I	
24.778	817772	3.0	S	4B				5		EY			6.0M	Y	2	Garrada,G		
24.779	817773							5	0.05	B		7	6.0	Y	2	Garrada,G	J	
24.78	817774	2.4	S	4B	21			11.0		EY			6.3	Y	1	Lovejoy,T		
24.785	817775	2.7	S	4C						EY			6	Y	1	Seargent,D		
24.785	817776				16	7			0.08	B		15				Seargent,D	X	
24.787	817777				5	5	0.2	270	0.10	N	10	55	3.0C	Y	1	Kato,T	L	
24.79	817778	3.8	S	AAVSO	6	6	1	275	0.07	B		10	4.0M	Y	1	Hayashi,A		
24.794	817779	3.7	S	4B	4.1	8	1.5	270	0.05	B		7	3.5M	Y	1	Kanai,K		
24.800	817780	3.5	B	4B	4.1	8	1.5	270	0.05	B		7	3.5M	Y	1	Kanai,K		
24.800	817781	3.0	B	4B	8	5	4		0.05	B		7	4.5	Y	1	Hayashi,H	C	
24.80	817782	3.0			20	8			0.23	B	4.4	40	4.0	Y	1	Washi,I	M	
24.802	817783	3.5	M	4C	5.5	8			0.08	B		11	4	M	Y	1	Mitsuma,S	N
24.802	817784								0.16	N	6.3	31	4	M	Y	1	Mitsuma,S	O
24.802	817785							2.5	0.05	B		7	4	M	Y	1	Mitsuma,S	
24.81	817786	2.7		4B/C						EY			6	Y	12	Bouma,R.J		
24.81	817787	3.2	B	4B/C	15	6	6	259	0.05	B		10	6	Y	12	Bouma,R.J	P	
24.81	817788	3.5	S	AAVSO	8	6	0.5	275	0.13	N	6.3	24	4.0M	Y	1	Hayashi,A		
24.813	817789	4.9	B	4B	6.9	6	4	290	0.05	R	7.6	19	3.5MT	Y	2	Kitamura,K		
24.819	817790	3.3	B	4B					0.035	B		7		Y	2	Okada,M	Q	
24.82	817791	3.2	M	4B				3.0	0.05	B		7	4.5M	Y	1	Suzuki,K		
24.82	817792			4B	4.2	1.9	5		0.25	B	4.2	88	4.5M	Y	1	Suzuki,K	R	
24.82	817793	3.0			15	6	3		0.12	B		20	5.5	Y	1	Washi,S	S	
24.824	817794	3.3	M	4B	8	6	0.5	270	0.030	B		8	3.5C	Y	1	Kato,T	L	
24.831	817795	3.2	S	4B	10	5	1.5	260	0.07	B		10	5.0	Y	1	Kobayashi,J		

NOTE A Gas tail 5 deg at PA 250; dust tail 5 deg. at PA 270.

NOTE B Tail length exceeds 5 deg. DC in 5"-Newton: 8.5'.

NOTE C Moon.

NOTE D Comet altitude 9 deg., comparison stars' altitudes 14 deg., comet's uncorrected magnitude is 4.5.

NOTE E No definite tail seen.

NOTE F Tail visible by direct vision but not intense to naked eye.

NOTE G Tail PA 262-278. Ray 262-267 longest and brightest.

NOTE H Tail straight and broad, 2-3 deg. long. Glimpsed briefly through drifting cloud.

NOTE I Nucleus.

NOTE J 5 deg. tail is gas; 4 deg. tail is dust.

NOTE K Sharp kink in ion tail to SW about 3 deg. from coma. [sic]

NOTE L Diffuse cloud.

NOTE M Instrument is Wright-Schmidt. (Observer indicated "Y" method. Ed.)

NOTE N m2 = 7.1.

NOTE O m2 = 7.7.

NOTE P Gas tail at PA 259. Dust tail at PA 271. Coma diameter approximate.

NOTE Q Near full moon. (Translated by IHW staff. Ed.)

NOTE R Meter. (Coma diameter. Ed.) Instrument is Wright-Schmidt.

NOTE S Type II. (Observer indicated "Y" method. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes	
24.542	830992	0.49	0.41	N	5	113	30	5	1	Levy,D.H	A	
24.814	830993	0.32	0.050	R	7.6	42		5	3.5	1	Kitamura,K	B

NOTE A Scale is approximate.

NOTE B Unspecified feature at PA 290. DC 6. Tail length is not clear of moonlight. Coma total magnitude 4.9. Moonlight and twilight interfered with the observation.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
24.165	851280	0.200	4.5		10.3 x 6.9	4.00	3M Slide	400/	N	X	4/P	10	Villa,M	A
24.409	851281	0.050	2.8		39.6 x 27.0	8.00	Fujicolor	400/	N	X	9/P	1	Villate,F	
24.743	851282	0.180	2.8		11.4 x 7.6	10.00	Kodak 2415		Y	O	55/S	2	Garradd,G	B
24.772	851283	0.180	2.8		11.4 x 7.6	9.25	Kodak 2415		Y	O	56/S	2	Garradd,G	B
24.788	851284	0.180	2.8		11.4 x 7.6	20.00	Kodak 2415		Y	O	57/S	2	Garradd,G	B

NOTE A Enlargement of the print 2x.

NOTE B Temperature for hypersensitization 60-65 deg. C.

DATE: 25 MAR 1986

DATE: 25 MAR 1986

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
25.146	817796	3.2	B	IHW			3.5		0.050	B		10	5.0	Y	3	Guthier,O	
25.149	817797	3.8	M	4B		7	1		0.089	R	5.5	18	5.0M	N	1	Ventura,F	
25.163	817798	3.0	M	4B	14	8	2.0		0.030	B		8	5.0	Y	10	Villa,M	
25.359	817799	3.3	B	145		4			0.050	B		20	4.9	Y	1	Castrillon,M.E	
25.38	817800	3.3	B	IHW BAA					0.050	B		7				Green,D.W.E	
25.38	817801	3.1	S	IHW BAA	7	6			0.050	B		7				Green,D.W.E	
25.389	817802	3.4	B		8	3	1.80	261	0.05	B		7	4.0			Lairret,R	A
25.39	817803	3.1	B	IHW BAA					0.035	B		7				Green,D.W.E	
25.39	817804	2.7	S	IHW BAA	7.5	6			0.035	B		7				Green,D.W.E	
25.392	817805	3.3	B	4B		6			0.050	B		7	5.5	Y	1	Ocampo M.,W	
25.40	817806	2.7	S	IHW BAA	8.1	5			0.080	B		20				Green,D.W.E	A
25.40	817807	3.2	B	4B	8	5			0.050	B		10	5.5	Y	1	Bortle,J.E	B
25.40	817808	2.9	S	4B						EY		7	5.5	Y	1	Bortle,J.E	B
25.442	817809	3.5	B	4B	6.8	6			0.05	B		7	3.3MTC	Y	1	Dodd,W.J	C
25.52	817810	2.9		4B, BSC		7	4	265	0.050	B		10	4.0MC	Y	10	Morris,C.S	D
25.52	817811	3.0	M	4B, BSC		8	2	280	0.035	B		7	4 CT	Y	1	Morris,C.S	D
25.521	817812	2.6	S	4B	36	8						7				Gronet,J.D	E
25.625	817813															Lovejoy,T	F
25.69	817814	3.3	S	4B		8			0.023	B		3	5			Jones,A	G
25.69	817815				9	8	1.8		0.078	R	7.5	30				Jones,A	H
25.691	817816			4B						EY				Y	1	Tregaskis,T.B	I
25.691	817817	3.2	B	4B	12	8	3	270	0.05	B		10		Y	1	Tregaskis,T.B	J
25.71	817818	8.5	V	SAO					0.317	N	5	86				Jones,A	K
25.768	817819	3.0	S	4B						EY			5.0M	Y	6	Garradd,G	
25.771	817820						3		0.05	B		7				Garradd,G	
25.788	817821	4.6	B	4B					0.07	B		10	3.3M	Y	1	Date,M	
25.79	817822	3.8	S	AAVSO	5	6	1	280	0.07	B		10	3.0M	Y	1	Hayashi,A	
25.79	817823	3.2	M	4B	10	5			0.080	B		11	3 M	Y	1	Watanabe,N	L
25.799	817824	3.4	M	4B	7.2	6	1.5	270	0.1	N	10	25	4.0	Y	1	Ichikawa,K	
25.799	817825	3.4	M	4C	7.2	7			0.08	B		11	4 M	Y	1	Mitsuma,S	M
25.799	817826								0.16	N	6.3	31	4 M	Y	1	Mitsuma,S	N
25.799	817827						1.5	270	0.05	B		7	4 M	Y	1	Mitsuma,S	
25.801	817828	3.4	S	4B, 4C	6.9	7	0.7	280	0.05	B		7	3.5M	Y	1	Kanai,K	
25.806	817829	3.4	B	4B, 4C	6.9	7	0.7	280	0.05	B		7	3.5M	Y	1	Kanai,K	
25.808	817830	3.3	M	4B	10	6	1.0	270	0.030	B		8	4.0C	Y	1	Kato,T	
25.81	817831	3.4	S	AAVSO	7	6	0.5		0.13	N	6.3	24	3.0M	Y	1	Hayashi,A	O
25.813	817832	3.5	B	4B	6.0	5	6.0	280	0.062	R	14.6	46	3.0MT	Y	2	Kitamura,K	
25.82	817833	3.4	S	4B	6	7			0.07	B		10	3.0M	Y	1	Yasuki,M	

NOTE A Coma diameter approximate.

NOTE B Extinction correction applied.

NOTE C No tail seen. High, thin haze possibly reaching to horizon.

NOTE D Differential extinction correction of -0.3 was applied.

NOTE E Good see.

NOTE F Naked eye tail length. Brilliant moonlight.

NOTE G Moon 15 d. low west.

NOTE H Tail PA 259-279.

NOTE I Seen faintly. Bright moonlight.

NOTE J Coma diameter approximate. Tail straight and broad. PA approximate. Binocular limit approximately mag. 8. Bright moonlight.

NOTE K Nucleus.

NOTE L Coma diameter uncertain.

NOTE M m2 = 7.6.

NOTE N m2 = 9.0.

NOTE O PA 250 to 280.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
25.174	830994		0.125	R	6	44			4	Guthier,O	A
25.424	830995	0.12	0.204	N	8	81,677	50	3.0	1	Robinson,P.C	B
25.516	830996	0.49	0.41	N	5	64	75	5	1	Levy,D.H	C
25.738	830997	0.254	N	6	61,	7	55			Pawlutschenko,B	D
25.823	830998	0.39	0.062	R	14.6	46	10	3.0	1	Kitamura,K	E

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Wide dust tail &gt;20' long at PA 275; bright spot at PA 5; bright spot at PA 35; bright spot at PA 15; jets at PAs 20, 5, and 50; dust tails at PA 0 and PA 170; enhancement in tail at PA 10. The central condensation was stellar. East half of coma was bright, with 3 parts. Northern part between jets at PAs 5 and 50 was brightest. The southern part dimmest. The bright spot at PA 15 was very faint. Bright spots at PAs 15 and 35 were only seen at high power. Moonlight and city lights interfered with the observation.

NOTE C Scale is approximate.

NOTE D Protruding jet of gas or material; bright nucleus; glowing shroud of dust. Comet head only definable due to full moon. No visible tail. Between the hours of 4:15 am and 5:10 am on 26th March, 1986, the comet, although flooded by full moon light, appeared to show a projecting jet of material from the nucleus in the approximate direction of the invisible tail. Averted vision was used to distinguish this phenomenon from other possibilities. Viewing conditions were not as clear as desired for this observation due to dust cover within the comet head and moonlight. 7x50 binoculars also used. (Drawing data inferred from written description. Ed.)

NOTE E Unspecified feature at PA 280. DC 5. Central condensations draw near the south. Shape of coma is not clear of moonlight. Coma total magnitude 3.5. Moonlight and twilight interfered with the observation.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Eyp	Gdng	Id/Typ	Site	Observer(s)	Notes
25.137	851285	0.050	2.8		39.6 x27.0	5.00	Ektachrome	1600/	N	M	360/P	1	Stolzen,P	A
25.144	851286	0.135	2.8		15.2 x10.2	5.00	Ektachrome	1600/	N	M	362/P	1	Stolzen,P	A

NOTE A (Observer's image identifier is preceded by prefix 2. Ed.)

DATE: 26 MAR 1986

DATE: 26 MAR 1986

## 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
26.069	817834	3.7	S	4B	13.0	6	2.25	278	0.08	B		30	4.9	Y	1	Campos,J	A
26.073	817835	3.2		4B			2.00			EY			4.9	Y	1	Campos,J	B
26.181	817836	2.9	B	SAO,IHW	16.0	7	3.0		0.050	B		10	4.6	Y	3	Guthier,O	
26.1875	817837	4.5:	B	4B	3	5			0.05	B		10	4.5TCM		2	Franciosi,C	C
26.208	817838	4.0	M	4B	60	6			0.05	R	11	30		N	3	Mendez,J	D
26.250	817839	3.5		4B	5	6	2.5		0.030	B		8	4.5	Y	2	Kerber,F	E
26.351	817840	3.0	B	145	16	5			0.05	B		20	3.5	Y	1	da Silva,L.A.L	F
26.39	817841	3.1	B	IHW BAA					0.035	B		7				Green,D.W.E	
26.39	817842	2.7	S	IHW BAA	9	5			0.080	B		20				Green,D.W.E	G
26.39	817843	2.8	S	IHW BAA	6	6			0.035	B		7				Green,D.W.E	G
26.41	817844	3.2	B	4B	11	5			0.050	B		10	5	Y	1	Bortle,J.E	H
26.54	817845								0.305	R	16.4	476	3.5MC	Y	27	Morris,C.S	I
26.70	817846	3.2	S	4B, 120					0.023	B		3	4.2			Jones,A	J
26.70	817847				6	5	1.3		0.078	R	7.5	30				Jones,A	K
26.71	817848	9.1	V	SAO					0.317	N	5	86				Jones,A	L
26.792	817849	3.2	S	4B	10	5	3.0	250	0.050	B		12		Y	1	Batza,H	
26.799	817850	3.2	S	4B, 4C	6.7	6	0.4	295	0.05	B		7	3.0M	Y	1	Kanai,K	
26.806	817851	3.4	B	4B, 4C	6.7	6	0.4	295	0.05	B		7	3.0M	Y	1	Kanai,K	
26.809	817852				4.8	4	4	270	0.062	R	14.6	46	2.5MT	Y	2	Kitamura,K	
26.819	817853	3.8	B	4B					0.02	R	6	8	2.5MT	Y	2	Kitamura,K	

NOTE A Moonlight interfering.

NOTE B Moonlight. Elevation of comet = 48 deg.

NOTE C No nucleus. Coma diameter approximate.

NOTE D Coma diameter is lower limit. Full moon.

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

NOTE F Full moon and twilight.

NOTE G Coma diameter approximate.

NOTE H Extinction correction applied.

NOTE I At least two jets were seen coming from the condensation in PAs 30: and 90:. The jets were straight. Lengths not determined.

NOTE J Tail PA 266-281.

NOTE K Nucleus.

NOTE L Clouds. (Observer gave limit as 8.5. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
26.505	830999	0.56	0.41	N	5	64	45	5	1	Levy,D.H	A
26.823	831000	0.30	0.062	R	14.6	46	10	2.5	1	Kitamura,K	B

NOTE A Scale is approximate.

NOTE B Unspecified feature at PA 270. DC 4. Coma and tail direction is not clear of moonlight. Coma total magnitude 3.8. Make out the nucleus of moonlight!? Moonlight and twilight interfered with the observation.

DATE: 27 MAR 1986

DATE: 27 MAR 1986

## 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
27.094	817854	3.8	S	4B	7.0	6	3.00	268	0.035	B		7	4.8	Y	1	Campos,J	
27.143	817855	2.8	B	IHW	19.0	7	3.0		0.050	B		10	5.0	Y	3	Guthier,O	A
27.145	817856	2.8	B	IHW		7				EY				Y	3	Guthier,O	
27.1979	817857	4.5	B	4B	3	5			0.05	B		10	5.0TCM	Y	2	Franciosi,C	B
27.212	817858	3.4	B	4C		2			0.03	B		8	3.3MC	Y	2	Giraudi,J.D	
27.215	817859	3.6	B	4C		2			0.03	B		8	3.3MC	Y	2	Giraudi,J.D	
27.218	817860	3.4	B	4C		2			0.03	B		8	3.3MC	Y	2	Giraudi,J.D	
27.229	817861	3.5		4B	8	5	0.5		0.030	B		8	4.2	Y	2	Kerber,F	C
27.340	817862	3.9	B	145	10	2			0.040	B		8	4.5	Y	1	Levai,R	D
27.48	817863	3.0		4C					0.040	B		8	4.0	Y	1	Keen,R	E
27.52	817864	3.0		4C,						EY			3.5MC	Y	10	Morris,C.S	F
27.52	817865	3.1	M	4C	14	6	5		0.050	B		10	3.5MC	Y	10	Morris,C.S	F
27.66	817866	3.3	S	145, 4B					0.023	B		3	4.2	Y		Jones,A	G
27.66	817867				6	6	1		0.078	R	7.5	30				Jones,A	H
27.67	817868	8.6	V	SAO					0.317	N	5	86				Jones,A	I
27.677	817869						3		0.05	B		7				Garradd,G	
27.677	817870	3.1		4C						EY			5.0M		6	Garradd,G	J
27.681	817871						3		0.05	B		7				Garradd,G	
27.736	817872	3.3		4B			1			EY					1	Tregaskis,T.B	K
27.736	817873	3.3	B	4B	10	7	3	270	0.05	B		10		Y	1	Tregaskis,T.B	L
27.78	817874	3.3	S				4.0			EY			5.3M	N	1	Lovejoy,T	M
27.80	817875	3.1		4B/C						EY			5 M	Y	12	Bouma,R.J	
27.80	817876	3.5	B	4B/C		6	2.5	270	0.05	B		10	5 M	Y	12	Bouma,R.J	N

NOTE A Moonlight.

NOTE B No nucleus. Coma diameter approximate.

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

NOTE D Magnitude estimate uncertainty +/-0.2 mag.

NOTE E Modified Sidgwick method used. Full moon. Extinction correction applied.

NOTE F Differential extinction correction of -0.3 was applied.

NOTE G Moon 17 d.

NOTE H Tail PA 259-273. Short tail faint to unaided eye.

NOTE I Nucleus.

NOTE J Moon.

NOTE K Tail length approximate. Bright moonlight.

NOTE L Tail straight and broad, PA approximate.

NOTE M Naked eye tail length.

NOTE N Dust tail.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
27.174	831001		0.125	R	6	37			4	Guthier,O	A
27.283	831002	0.55	0.30	N	6	40	6		1	Monopoli,M.O	B
27.505	831003	0.51	0.20	N	7	79	15	4.5	6	Levy,D.H	C

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Moonlight, city lights.

NOTE C Scale is approximate.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
27.172	851287	0.050	2.8		39.6 x27.0	5.00	Ektachrome	1600/	N	M	384/P	1	Stolzen,P	A
27.193	851288	0.135	2.8		15.2 x10.2	5.00	Ektachrome	1600/	N	M	390/P	1	Stolzen,P	A

NOTE A (Observer's image identifier is preceded by prefix 2. Ed.)

DATE: 28 MAR 1986

DATE: 28 MAR 1986

## 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
28.128	817877	3.3	M	4C		5				EY			4.6M	Y	1	Fleet,R.W	A
28.131	817878	3.9	M	4C	12	6			0.08	B		11	4.6M	Y	1	Fleet,R.W	
28.168	817879	4.4	B	4B	6	1	0.3	60	0.03	B		8	6.2MT	Y	1	Dominici,A	
28.250	817880	3.4	B	AAVSO		3			0.040	B		10	4.0	Y	1	Alves,A.A	
28.250	817881	3.5	B	145,144					0.05	B		7	4.5CM	N	2	Martinez,C	
28.326	817882	3.9	B	145	17	2	1.5	272	0.040	B		8	5.2	Y	1	Levai,R	B
28.403	817883	2.6	M	4C	15	5	4.0	271	0.05	B		7	3.3M	Y	1	DeYoung,J.A	
28.442	817884	4.1	B	4B	5.3	1			0.05	B		7	3.3MTC	Y	1	Dodd,W.J	C
28.49	817885	3.1		4C	12	6			0.040	B		8	4.0	Y	1	Keen,R	D
28.667	817886	3.2	S	4C	12.0	5	2	250	0.080	B		20		Y	1	Batza,H	E
28.79	817887	3.1		4C			8.0			EY			5.5M	N	1	Lovejoy,T	F
28.792	817888	3.2		4C						EY			5.0M		6	Garradd,G	G
28.81	817889	3.0		4B/C						EY			5 M	Y	12	Bouma,R.J	
28.81	817890	3.4	B	4B/C	15	6	2		0.05	B		10	5 M	Y	12	Bouma,R.J	H
28.823	817891			4C				270	0.05	B		10		N	5	Tregaskis,T.B	I
28.991	817892	4.2	M	4B	10	6	2.33	270	0.04	B		12	4.8	N	2	Henshaw,C	G

NOTE A After cloud.

NOTE B Magnitude estimate uncertainty +/-0.2 mag.

NOTE C No tail seen.

NOTE D Modified Sidgwick method used. Extinction correction applied.

NOTE E Moonlight. (Observer gave limit as 9.5. Ed.)

NOTE F Naked eye tail length.

NOTE G Moon.

NOTE H Coma diameter approximate.

NOTE I DC = not visible. Tail length = faint smear. PA approximate. Binocular limit approximately mag. 4. Clear but dawn breaking. In city.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
28.171	831004	0.2	0.030	B		8	6	6.2	1	Dominici,A	A

NOTE A Moonlight and twilight interfered with observation. "Luminous strip in the tail" at PA 60 deg.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
28.160	851289	0.050	2.7		39.6 x27.0	0.17	Kodak Tri-X	400/27	N		8/P	1	Afeltra,J	A
28.174	851290	0.050	2.8		39.6 x27.0	10.00	Ektachrome	1600/	N	M	396/P	1	Stolzen,P	B
28.175	851291	0.135	2.8		15.2 x10.2	5.00	Ektachrome	1600/	N	M	397/P	1	Stolzen,P	B
28.198	851292	0.135	4		15.2 x10.2	0.27	Kodak Tri-X	400/27	N		7/P	1	Afeltra,J	C
28.211	851293	0.135	4		15.2 x10.2	0.17	Kodak Tri-X	400/27	N		6/P	1	Afeltra,J	C

NOTE A Moonlight and city lights.

NOTE B (Observer's image identifier is preceded by prefix 2. Ed.)

NOTE C City lights.



DATE: 29 MAR 1986

DATE: 29 MAR 1986

## 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
29.05	817893	3.1	S	4C					0.05	B		7	3.5		9	Shanklin,J.D	
29.146	817894			4B	15				0.030	B		8	4.0M	Y	10	Villa,M	
29.156	817895	3.0	S	4C, 126	3	6			0.114	N	7.9	45	4.0M	Y	1	Di Meglio,F	
29.167	817896	3.0	M	4B					0.030	B		8	4.0M	Y	10	Villa,M	
29.169	817897	3.5	B	SAO,IHW	25.0		3.0		0.050	B		10	5.0	Y	3	Guthier,O	
29.208	817898	3.0	S	4C	32	5	3.9	276	0.04	B		8	6.0	Y	6	Parisio,R	A
29.279	817899	3.2	B	144	14	6			0.05	B		20	3.5	Y	8	da Silva,L.A.L	B
29.292	817900	3.9	B	4C		3			0.03	B		8	4.1M	Y	3	Giraudi,J.D	
29.295	817901	3.9	B	4C		3			0.03	B		8	4.1M	Y	3	Giraudi,J.D	
29.296	817902	3.8	B	4C		3			0.03	B		8	4.1M	Y	3	Giraudi,J.D	
29.410	817903	2.9	M	4C	15	5	3.0	280	0.05	B		7	3.3M	Y	1	DeYoung,J.A	
29.417	817904	5.0	B	4B					0.08	B		11	2.5	Y	4	Gorski,L	
29.573	817905	4	B	4C	10	7	1	270	0.05	B		10		N	5	Tregaskis,T.B	C
29.573	817906			4C					0.08	B		10		N	5	Tregaskis,T.B	D
29.625	817907	3.2	S	4C	12	7			0.080	B		20		Y	1	Batza,H	E
29.747	817908					9			0.31	N		129				Garradd,G	
29.747	817909	2.9		4C					0.31	N		129	5.0M	Y	6	Garradd,G	
29.750	817910					9			0.31	N	5.4	129				Garradd,G	
29.76	817911	2.7		4C			7.0		0.31	N			5.5M	N	1	Lovejoy,T	F
29.792	817912	3.3	S	4C	7		1.8	280	0.05	B		7	4.6M	N	1	Bryant,K	G
29.823	817913	3.5	M	4B	9	5			0.030	B		8	3.0C	Y	1	Kato,T	

NOTE A Centro Atlantico Da Air Jumbo.

NOTE B Moonlight.

NOTE C PA approximate. Bright moon and cloud. In city. (Observer gave limit as approximately 8. Ed.)

NOTE D Comet not visible. Bright moon and cloud. In city.

NOTE E Moonlight. (Observer gave limit as 9.5. Ed.)

NOTE F Naked eye tail length.

NOTE G DC = strong.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
29.152	831005		0.125	R	6	37			4	Guthier,O	A
29.510	831006		0.41	N	5	64	30	5	1	Levy,D.H	

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	ACN#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
29.400	870133	600G-O	CL	0.135	2.8		5.00	Kodak 2415		Y	C	213/S	4	Buchanan,W.T	A

NOTE A Moonlight interfered with the observation. Halley invisible to naked eye. (Observer's image identifier is E-122-13. Ed.)  
Window on front of instrument selected to correspond with aperture: 54 mm for f/2.8, 38 mm for f/4.8.

DATE: 30 MAR 1986

DATE: 30 MAR 1986

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
30.006	817914	3.7	M	4C					0.035	B		9	4.7M	Y	1	Begbie,M.J.R	
30.021	817915				8.9	7		272	0.30	N	8.5	102	4.7M	Y	1	Begbie,M.J.R	A
30.031	817916	3.1	B	4C	15 12	5		269	0.06	B		15	4.8	Y	2	Vincent,J	B
30.042	817917	3.3	M	4C		6	2.4	283		EY			4.9M	Y	1	Fleet,R.W	
30.066	817918	4.2	M	4C	12	6	2.5	270	0.04	B		12	5.4	N	2	Henshaw,C	C
30.076	817919	3.7	M	4C	12	6	0.5	270	0.08	B		11	4.9M	Y	1	Fleet,R.W	D
30.11	817920	3.4	S	4C					0.08	B		20	3.0		10	Shanklin,J.D	
30.13	817921	3.4	B	4C		6			0.050	B		7	M	Y	3	Jannink,D.W	E
30.160	817922	2.9	M	4C	14	8			0.030	B		8	3.5M	Y	11	Villa,M	
30.233	817923	3.4	B	4C	5	5			0.06	R	8	15	3.0M	Y	2	Schambeck,C.M	
30.292	817924	3.3	B	145	12	5	1		0.05	B		7	4.5CM	Y	2	Martinez,C	
30.358	817925	3.3	B		8	2	1.47		0.05	B		7	3.8			Lairret,R	
30.410	817926	3.5	S	4C					0.05	B		10	3 M	Y	1	House,R.R	F
30.417	817927	3.1	B	4B					0.08	B		11	2.5	Y	4	Gorski,L	
30.46	817928	3.3	B	4C	6	8	0.25	315	0.154	N	8.0	68	3.5	Y		Kronk,G	G
30.49	817929	2.8		4C					0.040	B		8	4.0	Y	1	Keen,R	H
30.67	817930	2.6		4B, 4C			5.5			EY			5.5M	N	1	Lovejoy,T	I
30.69	817931	3.1	S	4C					0.023	B		3				Jones,A	J
30.69	817932				10	7	1.5	259	0.078	R	7.5	30				Jones,A	
30.70	817933	2.7	V	4C									4.7			Jones,A	K
30.74	817934	9.8	V	RASN2					0.317	N	5	86				Jones,A	L
30.74	817935	8.1	S	RASN2		7			0.317	N	5	86				Jones,A	M
30.743	817936	2.9		4C						EY			5.0M	Y	6	Garradd,G	
30.792	817937	3.2		4C			1	270		EY			4	Y	5	Tregaskis,T.B	N
30.792	817938	3.2	B	4C	20	5		270	0.05	B		10		Y	5	Tregaskis,T.B	O
30.80	817939	2.7		4C						EY			4.5M	Y	12	Bouma,R.J	
30.80	817940	3.0	B	4C	20	5	2	267	0.05	B		10	4.5M	Y	12	Bouma,R.J	P

NOTE A Tail measurement refers to dust tail only.

NOTE B Bright moonlight. Reduced tail? Comp. star Eta Sgr. Tail 3.5 to 4 deg. long.

NOTE C Moon.

NOTE D Spike: 0.5 deg. at PA 270. Midpoint on dust tail: 2.7 deg. at PA 280. End point of dust tail: 4.5 deg. at PA 283.

NOTE E Binocular limit is 6.5.

NOTE F 10 minutes into astron. twilight.

NOTE G Tail PA approximate. Moon and twilight.

NOTE H Modified Sidgwick method used. Extinction correction applied.

NOTE I Easily visible to naked eye with (rest of note illegible. Ed.). Coma diameter through 15x80 binoculars: 15'.

NOTE J Moon 20 d.

NOTE K Bifocal spectacles - viewed stars through distance section and comet out of focus in close-up section.

NOTE L Nucleus.

NOTE M Condensation.

NOTE N Tail length and PA approximate. Clear, bright moon.

NOTE O Coma diameter approximate. Tail length 3-4 deg., PA approximate. Clear, bright moon. (Observer gave limit as approximately 8. Ed.)

NOTE P Coma diameter approximate.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
30.063	831007	0.29	0.30	N	8.5	102,212,425	12	4.7	1	Begbie,M.J.R	A
30.076	831008	4	0.08	B		11		4.9	1	Fleet,R.W	B
30.097	831009	2.97	0.035	B		9		4.7	1	Begbie,M.J.R	C
30.169	831010	0.07	0.125	N	5.8	24, 28, 40	12	4.0	4	Riccabone,G	D

NOTE A Jet in PA 90. Vertex distance 4 arc min., semi latus rectums P1 = 4 arc min., P2 = 4 arc min. Coma and near nuclear tail symmetrical. A prominent jet in PA 90 is very straight and 51 arc sec. long. Besides the jet, the coma appears very dust free - slightly bluish in colour.

NOTE B Spike at PA 270. Dust tail end point at PA 283. Suspected tail at PA 284. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C Gas tail 6 deg. in PA 260. Dust tail 4 deg. in PA 275 deg. (brightest part of dust tail in PA 275 deg.). Dust tail PA 260-280. Both gas and dust tails shorter as Halley now lies in Milky Way.

NOTE D Comet very low above the horizon; haze over the valley. Couldn't measure diameters due to sunrise. Therefore the image scale is approximate. Moonlight, twilight, and city lights interfered with the observation. (Translated by IHW staff. Ed.)

SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
30.415	870134	600G-O	CL	0.135	4.8		30.00	Kodak 2415		Y	C	223/S	4	Buchanan,W.T	A

NOTE A Moonlight interfered with the observation. (Observer's image identifier is E-122-23. Ed.) Window on front of instrument selected to correspond with aperture: 54 mm for f/2.8, 38 mm for f/4.8.

DATE: 31 MAR 1986

DATE: 31 MAR 1986

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
31.000	817941	3.1	B	4C			5	270	0.06	B		15	5.2	Y	2	Vincent,J	
31.04	817942	2.7	S	4C					0.05	B		7	3.3		11	Shanklin,J.D	A
31.063	817943	3.3	M	4C		6	2.5	286		EY			4.8M	Y	1	Fleet,R.W	
31.069	817944	4.2	M	4C	15	6	2.25	270	0.04	B		12	5.4	N	2	Henshaw,C	B
31.104	817945	3.6	M	4C	15	6	0.9	266	0.08	B		11	4.8M	Y	1	Fleet,R.W	C
31.112	817946	3.5	M	5A					0.035	B		9	4.7M	Y	1	Begbie,M.J.R	
31.122	817947				8.8	6		275	0.30	N	8.5	102	4.7M	Y	1	Begbie,M.J.R	D
31.160	817948	2.6	M	4C	26	7			0.030	B		8	3.5M	Y	11	Villa,M	
31.172	817949	2.8	B	144					0.05	B		7	4.6		2	Galli,A	
31.173	817950	3.1	B	1HW	30.0		4.0		0.050	B		10	5.0	Y	3	Guthier,O	
31.174	817951	3.3	B	144		2			0.05	B		7	4.0CM	Y	2	Martinez,C	E
31.178	817952	3.3	B	1HW			6.0			EY				Y	3	Guthier,O	
31.208	817953	3.4	B	AAVSO		3			0.040	B		10	4.0	Y	1	Alves,A.A	
31.219	817954	3.3	B	4C		6			0.06	R	8	15	4.0M	Y	2	Schambeck,C.M	
31.250	817955	3.6	B	144	18	2			0.05	B		7	3.2CM	Y	2	Lupianez,B	
31.252	817956	3.7	B	4C		3			0.03	B		8	3.1	Y	3	Giraudi,J.D	
31.259	817957	3.6	B	4C		3			0.03	B		8	3.1	Y	3	Giraudi,J.D	
31.266	817958	3.5	B	4C		3			0.03	B		8	3.1	Y	3	Giraudi,J.D	
31.269	817959	3.3	B	4C		3			0.03	B		8	3.1	Y	3	Giraudi,J.D	
31.286	817960	3.6	S	144				281	0.05	B		7	3.8		2	Benavides,A	
31.294	817961	3.0	B	144	11	6			0.05	B		20	4.0	Y	1	da Silva,L.A.L	F
31.360	817962	3.3	B		16	2	1.67		0.05	B		7	4.0			Lalret,R	
31.395	817963	3.3	S	4C	13	1			0.05	B		10	3.5M	Y	1	Bouma,R.R	
31.404	817964	4.0	S	4C	15				0.035	B		7	3.0M	N	3	Morrison,W	G
31.54	817965	2.6	B	4C	35	7	4	275	0.030	B		8	6.5	Y	2	Ward,A	
31.55	817967	2.7		4C	40	7		270	0.20	SC	10	77	6.5	Y	2	Ward,A	
31.56	817968	2.6		4C, BSC	30	6	1	300	0.050	B		10	4.0M	Y	28	Morris,C.S	
31.625	817969	3.2		4C		4				EY			4.0M	Y	28	Morris,C.S	
31.625	817970	3.2	S	4C	25					EY			4	N	1	Tregaskis,T.B	H
31.649	817971	3.0		4C		5			0.05	B		10		N	1	Tregaskis,T.B	I
31.71	817972	3.1	S	4C						EY			5.0M	Y	6	Garradd,G	
31.71	817973				14	5			0.023	B		3				Jones,A	J
31.71	817974				6			0.5	0.050	B		7				Jones,A	
31.72	817975	2.8		4C					0.078	R	7.5	30				Jones,A	K
31.72	817976	3.2	B	4C	20	5	2		0.05	B		10	5 M	Y	12	Bouma,R.J	
31.73	817977	8.2	V	SAO					0.317	N	5	86				Bouma,R.J	L
31.77	817978	2.6		4C		7	5.0			EY			5.0M	N	1	Jones,A	M
31.781	817979	3.6	M	4C	7.7	6			0.08	B		11	3.5M	Y	1	Lovejoy,T	N
31.781	817980								0.16	N	6.3	31	3.5M	Y	1	Mitsuma,S	O
31.788	817981	3.4	B	4C					0.035	B		7		Y	1	Mitsuma,S	P
31.79	817982	4.1	S	AAVSO	8	5			0.07	B		10	4.5M	Y	1	Okada,M	
31.792	817983	3.6	S	4C	5.4	7	0.2	320	0.05	B		7	3.0M	Y	1	Hayashi,A	
31.792	817984	3.1	S	4C	10	4	1	270	0.07	B		10	3.0	Y	1	Kanai,K	
31.800	817985	4.1	B	4C	5.4	7	0.2	320	0.05	B		7	3.0M	Y	1	Kobayashi,J	
31.80	817986	3.9	S	AAVSO	9	5			0.13	N	6.3	24	4.5M	Y	1	Kanai,K	
31.82	817987	3.1	M	4C					0.05	B		7	4.5M	Y	1	Hayashi,A	
31.833	817988	4.9	S	4C		6			0.153	N	8.6	33	3.5	Y	1	Suzuki,K	Q
31.860	817989	3.0	S	144	12					EY			4.1M	Y	7	Iwaki,Y	R
31.860	817990	3.2	S	144	16.0	6	1.0	270	0.05	B		7	4.1M	Y	7	Haver,R	
31.927	817991	3.0	B	4C		2		270	0.06	B		15	4.6	Y	2	Vincent,J	S
31.99	817992	3.2	S	4C					0.05	B		7	4.0		12	Shanklin,J.D	Q

NOTE A Comp. star Eta Sgr. Bright moon.

NOTE B Moon.

NOTE C Spike: 0.9 deg. at PA 266. End gas tail: 3.9 deg. at PA 266. Midpoint dust tail: 3.5 deg. at PA 285. End point of dust tail: 6.2 deg. at PA 289.

NOTE D Tail measurement refers to dust tail only.

NOTE E Cirrus.

NOTE F Moon near to the comet.

NOTE G Altitude 5 deg.

NOTE H Clear, bright moon.

NOTE I Coma diameter approximate. Very faint tail 3-4 deg. long, PA approximate. Tail fan-like. Clear, bright moon. (Observer gave limit as approximately 8. Ed.)

NOTE J Moon 21 d. +/-14 degrees distant.

NOTE K Tail PA 262-288.

NOTE L Coma diameter approximate.

NOTE M Nucleus.

NOTE N Coma diameter through 15x80 binoculars: 30'.

NOTE O m2 = 7.5.

NOTE P m2 = 8.2.

NOTE Q Cloud.

NOTE R Not real dark (dusk). Saw bottom moon. [sic] (Translated by INW staff. Ed.)

NOTE S Tail shapeless. PA approximate. Bright moon.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
31.104	831011	4	0.08	B		11		4.8	1	Fleet,R.W	A
31.133	831012	0.30	0.30	N	8.5	102,212,425	20	4.7	1	Begbie,M.J.R	B
31.153	831013		0.125	R	6	44			4	Guthier,O	C

NOTE A Gas tail spike at PA 266. Gas tail end point at PA 266. Tail end point at PA 289. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Fan PA 45-160. Inner tail at PA 274. Vertex distance 4.5 arc min., semi latus rectums P1 = 5 arc min., P2 = 4 arc min. Yesterday's sharp jet appears to have developed into a broad asymmetrical fan - more dense and brighter to the northeast.

NOTE C Material in the form of "streamers" appears to flow from the coma into the tail, producing a bright narrow inner tail. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdag	Id/Typ	Site	Observer(s)	Notes
31.212	851294	0.135	2.8		15.2 x10.2	10.00	Ektachrome	1600/	N	M	410/P	1	Stolzen,P	A

NOTE A (Observer's image identifier is preceded by prefix 2. Ed.)

DATE: 1 APR 1986

DATE: 1 APR 1986

## 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
1.099	817993	3.6	M	5A					0.035	B		9	4.9M	Y	1	Begbie,M.J.R	
1.101	817994	3.2	M	4C			3.5	284		EY			4.7M	Y	1	Fleet,R.W	
1.108	817995				7.8	7		250	0.30	N	8.5	102	4.9M	Y	1	Begbie,M.J.R	A
1.115	817996	3.7	M	4C	15	6	1.9	283	0.08	B		11	4.7M	Y	1	Fleet,R.W	
1.139	817997	2.9	B	IHW	27.0	7	4.0		0.050	B		10	5.0	Y	3	Guthier,O	
1.14	817998	3.7	B	4C		5			0.050	B		7	M	Y	3	Jannink,D.W	
1.15	817999	4.5	M	4C	12	2			0.05	B		7				Keszthelyi,S	B
1.160	818000	2.9	M	4C	13	8			0.030	B		8	3.5M	Y	11	Villa,M	C
1.365	818001		B		20	2	0.80		0.05	B		7	4.0			Lairret,R	
1.528	818002	2.6	S	4C	20	5				EY				Y	1	Seargent,D	
1.53	818003	2.5	4C			5		278		EY		6		Y	13	Bouma,R.J	
1.53	818004	2.9	B	4C	18	6	9	283	0.05	EY		10	6	Y	13	Bouma,R.J	
1.53	818005	2.7	4C		18	6	9	283		EY		10	5.5	Y	29	Morris,C.S	
1.53	818006	2.8	M	4C	12	5	8	283	0.050	B		10	5.5	Y	29	Morris,C.S	
1.56	818007	2.5	4C			30	6	4	0.030	B		8	5.3M	N	1	Lovejoy,T	D
1.60	818008	2.7	4C			12	7		0.080	B		20	6.5	Y	1	Batz,J	E
1.604	818009	3.0	S	4C		20	7	4	0.080	B		11	8	Y	8	Pryal,J	F
1.615	818010	3.5	S	4C		20	7	4	0.080	B			5.2	Y		Clark,M.L	G
1.62	818011	2.6	B	4C		22	7	0.9	0.25	N	5	38	5.2	Y	6	Clark,M.L	R
1.63	818012	3.4	S	4C						EY			5.5M	Y	6	Garradd,G	
1.635	818013	3.0	4C				1	270		EY		4		Y	1	Tregaskis,T.B	I
1.646	818014	3.0	4C			5	3	270	0.05	B		10		Y	1	Tregaskis,T.B	J
1.646	818015	3.0	B	4C	20	7		270	0.20	SC	10	77	6.5	Y	2	Ward,A	
1.65	818016	2.7	4C		30				0.023	B		3	4.6			Jones,A	K
1.71	818017	2.9	S	4C		18	6		0.050	B		7				Jones,A	
1.71	818018						0.5		0.078	R	7.5	30				Jones,A	L
1.729	818020	3.7	B	100	0.2	5	0.51	208	0.28	SC	5	70	4.7	Y	1	Amoretti,M	
1.74	818021	9.8	V	SPV					0.317	N	5	86				Jones,A	M
1.780	818022	3.0	S	4C	30	5	1	280	0.07	B		10	5.5	Y	1	Kobayashi,J	
1.78	818023	3.0	B		10	7			0.05	B		10	3.0	Y	1	Uda,K	
1.79	818024	3.0	M	4C			1.0		0.05	B		7	5.0M	Y	1	Suzuki,K	
1.79	818025		4C		4.6	2.5	5		0.25		4.2	88	5.0M	Y	1	Suzuki,K	N
1.79	818026	3.2	S	4C	7	7			0.07	B		10	4.0M	Y	1	Yasuki,M	
1.795	818027	2.9	4C							EY			5.5M	Y	6	Garradd,G	
1.813	818028		4C			5		270	0.05	B		10		Y	1	Tregaskis,T.B	O
1.823	818029		4C		8	5		270	0.15	N	8	64		Y	1	Tregaskis,T.B	P
1.896	818030	3.5	S	4C	10.0	6	3.00		0.13	R	4	21	6.0	Y	5	Campos,J	Q
1.900	818031	3.3	4C		20.0	8				EY			6.0	Y	5	Campos,J	R
1.905	818032	2.8	S	143	12					EY			4.5M	Y	7	Haver,R	
1.910	818033	3.0	S	143	14.5	5	4.4	280	0.05	B		7	4.5M	Y	7	Haver,R	

NOTE A Tail measurement refers to dust tail only.

NOTE B Binocular limit is 6.5.

NOTE C Moon!

NOTE D Coma diameter through 15x80 binoculars: 30'. Tail length is lower limit.

NOTE E Moonlight and haze. (Observer gave limit as 9.5. Ed.)

NOTE F Moon only about 10 deg. above, "visible to naked eye".

NOTE G Moon up.

NOTE H Moon up. PA of 0.9 deg. tail 320 to 295.

NOTE I PA approximate. Hazy, bright moon.

NOTE J Coma diameter approximate. PA approximate. Hazy, bright moon. (Observer gave limit as approximately 8. Ed.)

NOTE K Moon 22 d. +/-14 degrees below comet.

NOTE L Tail PA 264-294.

NOTE M Nucleus.

NOTE N Instrument is Wright-Schmidt.

NOTE O Tail difficult to see, PA approximate. Clouds and bright moon. Limit in binoculars approximately mag. 7.

NOTE P 11 mag. stellar-like nucleus. Tail difficult to see, PA approximate. Magnification of 120 also used. Cloud and bright moon.

(Observer gave limit as approximately 11. Ed.)

NOTE Q Bluish coma. Very faint tail.

NOTE R Tail not visible with naked eye.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
1.115	831014	4	0.08	B		11		4.7	1	Fleet,R.W	A
1.127	831015		0.30	N	8.5	102,212,425	25	4.9	1	Begbie,M.J.R	B
1.150	831016	1	0.050	B		7	10	3.5	5	Keszthelyi,S	
1.157	831017		0.125	R	6	44			4	Guthier,O	C
1.723	831018		0.254	N	6	61, 7	133			Pavlutschenko,B	D

NOTE A Main tail at PA 283. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Vertex distance 4.5 arc min.; semi latus rectums P1 = 3.5 arc min., P2 = 3 arc min. A prominent jet is once more visible - 1.5 arc min. long in PA 130. Material flows from the coma into a prominent narrow tail in PA 250. The coma appeared quite dusty. (New jets have appeared approximately every two days during March. Without taking into account the length of jets, but taking into account only the position angles, an estimate of the rotation period of Halley's nucleus yielded a result of 52 hours 18 minutes - agreeing favourably with that obtained by Sekanina/Larson.) (Two drawings are included in this listing: one made at magnifications of 102 and 212 and scale 0.30 arc min./mm and one made at a magnification of 425 and scale 0.13 arc min./mm. Ed.)

NOTE C (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Distinctive bright fan protruding from the nucleus; small star like nucleus; no visible tail; comet head with very faint and tenuous coma. Between the hours of 3:14 am and 5:27 am EST on 2nd April, 1986, the comet was seen to have a faint tenuous head with a bright fan protruding from the nucleus. Tail was not visible due to the close proximity and brightness of the last quarter moon. The nucleus seemed distinctively bright but smaller than on previous occasions. The comet showed a rapid angular movement against the background stars within a 15 min. period. The apparent motion of the comet, on the morning of 2nd April, 1986, is shown. The pattern of stars defined were clear points of light but were reduced in magnitude due to the position and brightness of the last quarter moon. The comet moves substantially now within a 15 minute period as demonstrated. The constellation affected should be at the border of Scorpius. Star alignments were calculated by visual triangulation. 7x50 binoculars also used. (Two drawings included in this listing. Drawing data inferred from written description. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
1.491	851295	0.080	2.8		25.4 x17.1	10.00	Kodak Tri-X		N	X	210/P	2	Ward,A	A
1.916	851296	0.050	1.8		39.6 x27.0	2.50	Kodak VR	1000/	N	C	1/P	3	Vincent,F	

NOTE A (Observer's image identifier is 12/10. Ed.) UV filter used.

DATE: 2 APR 1986

DATE: 2 APR 1986

## 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	
2.000	818034	3.2	B	4C			5	275	0.06	B		15		Y	2	Vincent,J	A	
2.041	818035	2.9	B	4C	20	6	1		0.03	B		8	4.7M	Y	3	Fischer,D	B	
2.073	818036	3.7	M	5A	13	5	2	270	0.04	B		12	5.2	N	1	Henshaw,C	C	
2.10	818037	5.0	M	4C	15	2			0.05	B		10				Keszthelyi,S	D	
2.10	818038	3.0	V	4C	30	6	4.00	270		EY			6.0	Y	4	Merlin,J.-C		
2.115	818039	3.3	M	4C		6	2.2	308		EY			4.9M	Y	1	Fleet,R.W		
2.122	818040	3.6	M	4C	18	6	4.3	275	0.08	B		11	4.9M	Y	1	Fleet,R.W	E	
2.125	818041	2.8	B	IHW	31.5	6	3.0		0.050	B		10	5.0	Y	3	Guthier,O		
2.125	818042	2.9	S	4C	33	6	4.2		0.08	B		20	5.5	Y	7	Parisio,R		
2.146	818043	3.6	M	4C					0.040	B		7	3.5M	Y	11	Westlund,M		
2.146	818044				13	8			0.09	M	11	56	3.5M	Y	11	Westlund,M		
2.20	818045	2.8	V	4C	30	6				EY			6.0	Y	4	Merlin,J.-C		
2.358	818046	3.6	B		20	2	0.83		0.05	B		7	3.8			Lairret,R		
2.396	818047	3.4	S	4C	19				0.035	B		7	3.2	Y	3	Morrison,W	F	
2.42	818048	2.7		4C	30	7		275	0.20	SC	10	77	6.5	Y	2	Ward,A		
2.42	818049	2.8		4C	30	7	4	270	0.030	B		8	6.5	Y	2	Ward,A		
2.51	818050	2.4	B	IHW BAA						EY						Green,D.W.E		
2.51	818051	2.5	B	IHW BAA					0.035	B		7				Green,D.W.E		
2.51	818052	2.4	S	IHW BAA	26	5	5		0.035	B		7				Green,D.W.E	G	
2.52	818053	3.2	B	5A		1			0.050	B		7	4.3C	N	1	Matchett,V		
2.53	818054	2.3		4C	27	5	8	280		EY			6.5	Y	30	Morris,C.S		
2.53	818055	2.4	M	4C			8	280	0.050	B		10	6.5	Y	30	Morris,C.S		
2.542	818056	2.4	S	4C						EY				Y	3	Seargent,D		
2.56	818057	2.4		4C						EY			7	Y	14	Bouma,R.J		
2.56	818058	2.8	B	4C	18	4	4	285	0.05	B		10	7	Y	14	Bouma,R.J		
2.56	818059	2.4		4C			10.5			EY			6.0M	Y	1	Lovejoy,T	H	
2.563	818060	2.9	S	4C						EY			6.0	Y	7	Garradd,G		
2.563	818061	2.5					2.1		0.050	B		10	6	Y	3	Minton,R.B	I	
2.563	818062	3.0	B	4C	25	5	3	270	0.05	B		10		Y	6	Tregaskis,T.B	J	
2.566	818063						3		0.05	B		7				Garradd,G		
2.566	818064	3.0		4C			1	270		EY			6	Y	6	Tregaskis,T.B	K	
2.569	818065			4C	13	5		270	0.10	N	6	24		Y	6	Tregaskis,T.B	L	
2.580	818066					9			0.31	N	5.4	129				Garradd,G		
2.604	818067	3.0	S	4C	12	8	2.5	250	0.080	B		20		Y	1	Batza,H	M	
2.604	818068	3.8	S	4C	20	6	3.5	75	0.080	B		11	8	Y	8	Pryal,J	N	
2.65	818069	2.6	B	4C						EY			5.4	Y		Clark,M.L	O	
2.66	818070	3.0	S	4C	25	7	1.4		0.05	B		10	5.4	Y		Clark,M.L	P	
2.68	818071	2.8	S	4C					0.023	B		3	4.9			Jones,A	Q	
2.68	818072				20	7			0.050	B		7				Jones,A		
2.68	818073						1.0		0.078	R	7.5	30				Jones,A	R	
2.708	818074	3.5	B	4C	15	7	2.0	265	0.05	B		7	4.1	Y	3	Bembrick,C		
2.76	818075	3.6	M	SAO	18				0.065	R	8	16	4.0M	Y	6	Nakamura,A	S	
2.792	818076	3.0		4C		5	1	270		EY			6	Y	7	Tregaskis,T.B	T	
2.80	818077	2.9	S		13	6	2	270	0.080	B		11	4.5	Y	1	Akita,I	U	
2.80	818078	3.1	M	4C			3.0		0.05	B		7	4.5M	Y	1	Suzuki,K		
2.80	818079			4C	4.2	1.9	4		0.25	B	4.2	88	4.5M	Y	1	Suzuki,K		
2.809	818080	2.9	B	4C					0.035	B		7		Y	2	Okada,M		
2.81	818081	3.2	M	4C	10.2	4			0.080	B		11	3	M	Y	1	Watanabe,N	
2.863	818082	3.0		4C	40.0					EY			6.0	Y	5	Campos,J		
2.940	818083	3.4	S	4C	14.0	6	2.75		0.13	R	4	21	6.0	Y	5	Campos,J	V	
2.948	818084	3.0		4C	65.0	7				EY			6.0	Y	5	Campos,J	W	
2.955	818085	3.3	S	4C	25.0	6	3.00	285	0.035	B		7	6.0	Y	5	Campos,J	V	

NOTE A Comp. star 3.2 nearby.

NOTE B Milky Way hampers viewing (often the worst influence once the moon is gone). Tail length exceeds 1 deg.

NOTE C Moon.

NOTE D Moon!

NOTE E Gas tail at PA 275. Dust tail at PA 290.

NOTE F Comet altitude 3 deg., comparison stars' altitudes 6 deg., comet's uncorrected magnitude is 4.1.

NOTE G Coma diameter approximate. Tail length is lower limit.

NOTE H Naked eye tail length.

NOTE I I used 10x50 binoculars out-of-focus. Same mag. as Kappa Sco. Comet was 65 deg. above S horizon.

NOTE J Coma diameter approximate. Tail faint. Low in SE. (Observer gave limit as approximately 10. Ed.)

NOTE K Tail faint. Averted vision needed to see tail. Length is upper limit.

NOTE L PA approximate. (Observer gave limit as approximately 12. Ed.)

NOTE M Moonlight. (Observer gave limit as 10.0. Ed.)

NOTE N Moon still out but east of comet.

NOTE O Moon up.

NOTE P Moon up. PA of 1.4 deg. tail 325 to 298.

NOTE Q Moon 23 d.

NOTE R Tail PA 268-292.

NOTE S Tail length = yes. PA 260 to 320.

NOTE T Tail faint. Length is upper limit. Clear zenith. Thick crescent moon.

NOTE U Moon age 23.2 (Translated by IHW staff. Ed.)

NOTE V Tail very faint.

NOTE W Comet some 30 deg. above E horizon.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
2.108	831019	0.94	0.050	B		10	33	5.0	6	Keszthelyi,S	
2.122	831020	4	0.08	B		11		4.9	1	Fleet,R.W	A
2.144	831021	1.6	0.090	M	11	56	5	3.5	11	Westlund,M	B
2.146	831022		0.125	R	6	37			4	Guthier,O	C
2.177	831023	0.17	0.31	N	8	61	10	6.0	4	Merlin,J.-C	D
2.516	831024	0.54	0.41	N	5	64	45	6.5	1	Levy,D.H	E

NOTE A Gas tail at PA 275. Dust tail at PA 290. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Disturbing lights: moon.

NOTE C (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Tail at PA 273; jet at PA 335, then curved to PA 20. Large fan-shaped structure toward south/southeast.

NOTE E Scale is approximate.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
2.145	851297	0.500	3.5		4.1 x 2.7	5.00	Kodak 2415		Y		1/P	4	Guthier,O	A
2.210	851298	0.050	2.8		39.6 x 27.0	5.00	Ektachrome	1600/	N	M	415/P	1	Stolzen,P	B

DATE: 2 APR 1986

DATE: 2 APR 1986

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
2.215	851299	0.135	2.8		15.2 x10.2	10.00	Ektachrome	1600/	N	M	416/P	1	Stolzen,P	C
2.516	851300	0.085	2.4		23.9 x16.1	20.17	Kodak 2415		Y	O	58/S	7	Garradd,G	D
2.518	851301	0.300	4.5		6.9 x 4.6	15.00	Kodak Tri-X		N	X	113/P	2	Ward,A	E
2.556	851302	0.180	2.8		11.4 x 7.6	13.67	Kodak 2415		Y	O	59/S	7	Garradd,G	F
2.560	851303	0.135	2.8		15.2 x10.2	6.00	Kodak 2415		Y	S	33/P	3	Minton,R.B	G
2.563	851304	0.200	3.5		10.3 x 6.9	20.00	Kodak 2415		N	O	42/N	1	Haagh,N	
2.851	851305	0.050	1.8		39.6 x27.0	2.00	Kodak VR	1000/	N	C	2/P	3	Vincent,F	

NOTE A Photograph made by F. Wilken and O. Guthier.

NOTE B (Comet visible through hole in clouds. Observer's image identifier is preceded by prefix 2. Ed.)

NOTE C (Observer's image identifier is preceded by prefix 2. Ed.)

NOTE D Lens aperture stopped down from f/2.0 to f/2.4. Temperature for hypersensitization 60-65 deg. C.

NOTE E (Observer's image identifier is 11/3. Ed.) UV filter used.

NOTE F Temperature for hypersensitization 60-65 deg. C.

NOTE G (Observer's image identifier is preceded by prefix PX. Ed.)

DATE: 3 APR 1986

DATE: 3 APR 1986

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
3.000	818086	2.9	B	4C		5	4		0.03	B		8	4.9	Y	3	Fischer,D	A
3.042	818087	3.2	B	4C		5	5	285	0.06	B		15	4.9	Y	2	Vincent,J	B
3.073	818088	2.8	S	4C	34	6	4.3		0.08	B		20	5.0	Y	7	Parisio,R	
3.09	818089	2.7	S	4C					0.05	B		7	6.5		13	Shanklin,J.D	
3.104	818090	2.9	B	IHW	37.0	6			0.050	B		10	5.2	Y	3	Guthier,O	C
3.11	818091	2.6	V	4C	40	5	3.00	278		EY			6.5	Y	4	Merlin,J.-C	
3.123	818092	3.5	M	4C	20	5	2.25	290	0.04	B		12	5.2	N	1	Henshaw,C	D
3.135	818093	3.6	B	4C					0.05	B		7	6.5	Y	2	Kukkonen,I.T	
3.146	818094				35	3	3.0	300	0.050	B		7	6.5	Y	2	Kukkonen,I.T	E
3.146	818095	3.0	B	5A						EY			6.5	Y	3	Hasubick,W	
3.146	818096	3.0	B	5A			6	295	0.03	B		8	6.5	Y	3	Hasubick,W	F
3.146	818097			5A*	29	5	3.2	295	0.08	B		20	6.5	Y	3	Hasubick,W	F
3.159	818098	3.0	B	4C	18	5	2.8	321		EY			5.5M	Y	8	Linder,J	G
3.174	818099	2.8	B	4C	23	6	3.8	287		EY			5.5M	Y	4	Bottger,B	
3.212	818100	2.6	B	144					0.05	B		7	5		2	Galli,A	
3.215	818101	3.5	M	4C	60				0.05	B		20	4.0	N	3	Gallego,J	B
3.219	818102	3.3	B	4C						EY			6.5M	Y	2	Kukkonen,I.T	
3.356	818103	3.7	B		20	2	1.20		0.05	B		7	3.8			Lairret,R	
3.39	818104	2.8		4C	30	6	3.5	270	0.030	B		8	6.5	Y	2	Ward,A	
3.396	818105	3.5	S	4C	24				0.035	B		7	3.0	Y	3	Morrison,W	I
3.45	818106	2.7		4C	30	7		265	0.20	SC	10	77	6.5	Y	2	Ward,A	
3.483	818107	3.6	B	4C	15	7	7.00	330	0.050	B		20	6.0	Y	2	Auckbur,R	J
3.487	818108	2.7	M	4C		3			0.080	B		11	5.1	Y	1	Glassett,W	K
3.49	818109	3.6	S	SAO	15	7	5	270	0.05	B		7	5.5	Y	2	Ashdown,M	L
3.517	818110	2.5		4C	36		8	285		EY			6.2	Y	3	Seargent,D	
3.517	818111					6	0.3	30	0.08	B		15				Seargent,D	M
3.52	818112	3.2	B	5A		1			0.050	B		7	4.8C	Y	1	Matchett,V	
3.52	818113	2.5		4C	30	6	10	270		EY			6.5	Y	30	Morris,C.S	
3.53	818114	2.4		4C			6	285		EY			7		14	Bouma,R.J	N
3.53	818115	2.5	M	4C	15	6	4	270	0.050	B		10	6.5	Y	30	Morris,C.S	
3.537	818116	2.6	S	4C			5			EY			6.0	Y	2	Garradd,G	
3.54	818117	2.6	M	4C	23	4			0.05	B		10	7	Y	14	Bouma,R.J	
3.540	818118					8			0.31	N	5.4	129				Garradd,G	O
3.55	818119	2.9	B	4C					0.063	B		9	7	Y	14	Bouma,R.J	
3.56	818120				23	5	5		0.035	B		7				Green,D.W.E	P
3.56	818121	3.0	B	IHW BAA						EY						Green,D.W.E	
3.56	818122	2.4		4C			9.0			EY			6.0	Y	1	Lovejoy,T	Q
3.563	818123	3.5	S	4C	22	7	4.5	70	0.080	B		11		Y	8	Pryal,J	R
3.58	818124	2.5	M	4C					0.050	R		8	6.5	Y	30	Morris,C.S	
3.604	818125	3.0	S	4C	12	8	3.0	250	0.080	B		20		Y	1	Batza,H	S
3.61	818126	2.5	B	4C						EY			5.5	Y		Clark,M.L	T
3.62	818127	3.3	S	4C						EY			5.5	Y		Clark,M.L	U
3.70	818128	3.0	B	IHW BAA	24	7	1.1		0.25	N	5	38	5.5	Y		Green,D.W.E	
3.729	818129	3.3		4C						EY			4.5	Y	1	Tregaskis,T.B	V
3.736	818130	3.3		4C	25	3	3	270	0.05	B		10		Y	1	Tregaskis,T.B	W
3.743	818131			4C	15	3		270	0.15	N	8	64		Y	1	Tregaskis,T.B	X
3.80	818132	3.3:	M	4C			1.5	315	0.05	B		10	3.5C	N	34	Hale,A	Y
3.847	818133		S				6.20		0.13	R	4	21	6.0	Y	5	Campos,J	Z
3.854	818134		S				5.00		0.035	B		7	6.0	Y	5	Campos,J	Z
3.875	818135	3.0		4C	60.0		6.80	312		EY			6.0	Y	5	Campos,J	a
3.927	818136	3.8	S	4C	16.0	5	5.63	278	0.13	R	4	21	6.0	Y	5	Campos,J	b
3.958	818137	3.7	M	4C	23 20	4			0.04	B		12	5.9	Y	1	Henshaw,C	

NOTE A Coma diameter = 20"-25". Tail length approximate. Milky Way hampers viewing.

NOTE B 4.9 star just beyond coma.

NOTE C Type I tail 6 to 7 deg. long, type II tail 3.0 deg. long.

NOTE D Moon.

NOTE E Coma diameter determined by comparing with neighboring stars.

NOTE F Tail I plasma; tail II gas. [sic]

NOTE G Tail type I.

NOTE H Very low.

NOTE I Comet altitude 2.5 deg., comparison stars' altitudes 4.5 and 6.5 deg., comet's uncorrected magnitude is 4.5.

NOTE J PA found by plotting and measuring on a star chart.

NOTE K Too windy for use of telescopes. Large, ill-defined coma visible at this time, but no clearly defined tail was visible from this location??? [sic] Tail possibly pointing away from viewing site??? [sic]

NOTE L PA = 270+.

NOTE M Anti-tail.

NOTE N PA value approximate.

NOTE O Central condensation much larger than April 2.

NOTE P Coma diameter approximate. Tail length is lower limit.

NOTE Q Naked eye tail length.

NOTE R Nice - easy! (Observer gave limit as 9. Ed.)

NOTE S (Observer gave limit as 10.0. Ed.)

NOTE T Street lights.

NOTE U Street lights. PA of 1.1 deg. tail 326-302.

NOTE V Through broken cloud. Crescent moon.

NOTE W Through broken cloud. Crescent moon. (Observer gave limit as approximately 8. Ed.)

NOTE X No detail in fairly broad fan-shaped tail; barely visible. PA approximate. Through broken cloud. Crescent moon.

NOTE Y Comet observed from center of large metropolitan area. Observation probably severely hampered by light pollution and lack of dark adaptation. Magnitude estimate is suspect, as is direction of tail. The comet could just be glimpsed with the naked eye.

NOTE Z Tail very faint.

NOTE a Faint curved dust tail at PA 312. Very faint gas straight tail at PA 276. The outer edge of the curved dust tail was best seen with naked eye than the gas, straight tail which was much fainter and slightly shorter in length. Broad tail from PA 276 deg. to PA 312 deg.

NOTE b Straight gas tail, very faint.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)
3.505	831025		0.41	N	5	64	15	5	1	Levy,D.B
3.66	831026		0.31	N	7	233	14	4	1	Tanikawa,M

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
3.095	851306	0.500	3.5		4.1 x 2.7	5.00	Kodak 2415		Y		2/P	4	Guthier,O	A
3.099	851307	0.500	3.5		4.1 x 2.7	10.00	Kodak 2415		Y		3/P	4	Guthier,O	A
3.123	851308	0.035	1.9		54.4 x 37.8	6.00	Fujichrome	400/	N	O	07/P	8	Bottger,B	B

DATE: 3 APR 1986

DATE: 3 APR 1986

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
3.123	851309	0.050	1.7		39.6 x27.0	5.00	Fujichrome	400/	N	O	20/P	8	Bottger,B	C
3.138	851310	0.200	2.8		10.3 x 6.9	5.00	Fujichrome	400/	N	O	08/P	8	Bottger,B	B
3.138	851311	0.200	3.5		10.3 x 6.9	5.00	Fujichrome	400/	N	O	21/P	8	Bottger,B	C
3.158	851312	0.050	2.0			4.00	Kodak Tri-X	400/	N	C	7/P		Falsarella,N	
3.161	851313	0.085	2.0		23.9 x16.1	5.00	Kodak Tri-X	400/	N	O	15/P	8	Bottger,B	C
3.501	851314	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak Tri-X	400/	N	X	002/P	1	Rosenthal,D	D
3.502	851315	2.306	5	0.45	0.9 x 0.6	13.00	Kodak Tri-X		N	M	21/P	1	Webb,R	E
3.514	851316	0.200	4		10.3 x 6.9	11.00	Kodak Tri-X		N	M	23/P	1	Webb,R	F
3.549	851317	0.200	3.5		10.3 x 6.9	20.00	Kodak Tri-X	400/	N	O	41/N	1	Haagh,N	
3.558	851318	0.180	2.8		11.4 x 7.6	11.67	Kodak 2415		Y	O	60/S	2	Garradd,G	G
3.560	851319	0.050	2		39.6 x27.0	3.50	Ektachrome	400/	N		10/S		Pryal,J	
3.568	851320	0.135	2.8		15.2 x10.2	6.50	Ektachrome	400/	N		11/S		Pryal,J	
3.576	851321	0.085	2.4		23.9 x16.1	23.00	Kodak 2415		Y	O	61/S	2	Garradd,G	H
3.603	851322	0.180	2.8		11.4 x 7.6	14.17	Kodak 2415		Y	O	62/S	2	Garradd,G	G
3.944	851323	0.225	1.7	0.140	9.1 x 6.1	2.00	Kodak 2415		Y	O	001/T	2	Battaini,P	D
3.950	851324	0.225	1.7	0.140	9.1 x 6.1	3.00	Kodak 2415		Y	O	002/T	2	Battaini,P	D

NOTE A Photograph made by F. Wilken and O. Guthier.

NOTE B Observation made by J. Linder and B. Bottger.

NOTE C Photograph made by J. Linder and B. Bottger.

NOTE D Instrument is Schmidt camera.

NOTE E Wind vibration/low altitude/poor seeing. Film pushed to ASA 1000. Standard 3 min.-3 min. processing.

NOTE F Windy/poor seeing. Film pushed to ASA 1000. Standard 3 min.-3 min. processing.

NOTE G Temperature for hypersensitization 60-65 deg. C.

NOTE H Lens aperture stopped down from f/2.0 to f/2.4. Temperature for hypersensitization 60-65 deg. C.



DATE: 4 APR 1986

DATE: 4 APR 1986

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
4.000	818138	3.2	B	4C		5			0.03	B		8	4.8	Y	3	Fischer,D	A
4.052	818139	3.3	B	5A		5	3	285	0.06	B		15		Y	2	Vincent,J	B
4.09	818140	3.5	S	5A	20	4	2.0		0.050	B		10	6.5	Y	8	van Loo,F.R	
4.090	818141	3.7	B	IHW	34.0	6			0.050	B		10	5.4	Y	3	Guthier,O	
4.10	818142	2.9	V	5A	30	4				EY			6.5	Y	4	Merlin,J.-C	
4.12	818143	3.8	S	DCS 9	25	6	2.0	315	0.080	B		15	7	Y	3	Wills,P	
4.133	818144	4	B	143		3			0.050	B			5.5	Y	1	Lovera,A	C
4.134	818145	4	B	143		3			0.05	B		20	5.5	Y	1	Carellio,S	D
4.142	818146	4.0	B	4C					0.05	B		7	6.5	Y	2	Kukkonen,I.T	
4.159	818147	3.2	B	4C	10	5	0.4	305	0.050	B		7	4.5C	N	9	Linder,J	E
4.160	818148	3.0	B	4C	16	6	1.8	290	0.05	B		10	5.0C	Y	5	Bottger,B	
4.167	818149				20	3	3.0	300	0.050	B		7	6.5	Y	2	Kukkonen,I.T	F
4.177	818150	2.8	S	5A	35	6	4.4		0.08	B		20	6.0	Y	7	Parisio,R	
4.191	818151	3.8	M	4C					0.040	B		7	4.0C	Y	6	Westlund,M	
4.191	818152				9	5			0.09	M	11	56	4.0C	Y	6	Westlund,M	
4.311	818153	3.5	B	143				310	0.05	B		7	3.3		2	Benavides,A	
4.365	818154	3.4	B		24	2	0.75		0.05	B		7	4.0			Lairret,R	
4.41	818155	2.8		4C	30	7		270	0.20	SC	10	77	6.5	Y	2	Ward,A	
4.45	818156	2.9		4C	15	5	3	310	0.040	B		8	5.0	Y	1	Keen,R	G
4.45	818157	2.6	B	4C	20	5				EY			5.0	Y	1	Keen,R	H
4.465	818158	4	B	143		3			0.050	B		20	5.5	Y	1	Castrillon,M.E	
4.48	818159	2.8		4C	25	6	3.5	270	0.030	B		8	6.5	Y	2	Ward,A	
4.49	818160	3.2	B	5A		1			0.050	B		7	4.6C	Y	1	Matchett,V	
4.494	818161	2.6	M	4C		3			0.080	B		11	5.2	Y	1	Glassett,W	I
4.507	818162	2.7	S	4C			6			EY			6.5	Y	1	Garradd,G	
4.51	818163	2.3	B	4C						EY			6.7	Y		Clark,M.L	J
4.510	818164						7		0.05	B		7				Garradd,G	K
4.51	818165	3.3	B	IHW BAA						EY						Green,D.W.E	
4.53	818166	3.1	S	4C	34	7	2.1		0.25	N	5	38	6.7	Y		Clark,M.L	L
4.54	818167	2.4		4C	30					EY			7	Y	14	Bouma,R.J	M
4.542	818168	2.5	S	4C	36		6	285		EY			6.2	Y	1	Seargent,D	
4.55	818169						0.3	30	0.065	B		20				Seargent,D	N
4.55	818170	2.6	M	4C	24	4			0.05	B		10	7	Y	14	Bouma,R.J	
4.56	818171								0.317	N		308	6.5	Y	31	Morris,C.S	O
4.56	818172	2.4		4C	30	6	7	280		EY			7.0	Y	31	Morris,C.S	
4.57	818173	2.4	M	4C	15	6	0.25	10	0.050	B		10	7.0	Y	31	Morris,C.S	P
4.602	818174	2.3		4C			12.5			EY			6.7	Y	1	Lovejoy,T	Q
4.62	818175	4.2	M	4B		4	4	290	0.05	B		10		Y	11	Edberg,S.J	R
4.71	818176	2.8	B	5A						EY			6.5	Y	35	Hale,A	S
4.71	818177	3.6	S	143, 4C					0.023	B		3		Y		Jones,A	T
4.71	818178				15	5			0.050	B						Jones,A	
4.71	818179								0.078	R	7.5	30				Jones,A	U
4.75	818180	9.9	V	SAO					0.317	N	5	86				Jones,A	V
4.774	818181	3.7	S	4C	30	5	2	270	0.07	B		10	3.0	Y	1	Kobayashi,J	
4.774	818182	3.9	M	5A	12	5		295	0.08	B		11	3	Y	1	Mitsuma,S	W
4.860	818183	2.6	S	143	36		5	305		EY			6.4	Y	7	Haver,R	
4.865	818184	2.8	S	143	32	4	5.4	305	0.05	B		7	6.4	Y	7	Haver,R	

NOTE A Coma diameter = 20'-25'. Milky Way extremely bad.

NOTE B Comp. star 3.2.

NOTE C Without tail. (Translated by IHW staff. Ed.)

NOTE D The tail is not divided. (Translated by IHW staff. Ed.)

NOTE E Type I tail.

NOTE F Coma diameter determined by comparing with neighboring stars.

NOTE G Modified Sidgwick method used. Extinction correction applied.

NOTE H Extinction correction applied.

NOTE I Too windy for use of telescopes. Large, ill-defined coma visible at this time, but no clearly defined tail was visible from this location??? [sic] Tail possibly pointing away from viewing site??? [sic]

NOTE J Tails photo'd. to 5.2 deg. and 5.5 deg.

NOTE K 7 deg. tail is gas; 3 deg. tail is dust.

NOTE L PA of 2.1 deg. tail is 348-297.

NOTE M Coma diameter approximate.

NOTE N Anti tail.

NOTE O Two jets were observed: 0.77' in PA 70 and 0.2' in PA 150. The first was narrow and straight. Coma appeared distorted in the direction of the jets.

NOTE P Main tail not measured. Indicated tail was a fuzzy extension to the coma. Central condensation was offset toward the north.

NOTE Q Naked eye tail length.

NOTE R Tail length approximate. Much more diffuse with lower surface brightness.

NOTE S Measured coma diameter 45' in 10x50 binoculars.

NOTE T Moon 25 d. low E.

NOTE U Tail definite to 1 degree, suspected to 2 degrees. Tail PA 277-297.

NOTE V Nucleus.

NOTE W Tail length = 1 deg. &gt;. [sic]

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
4.097	831027		0.125	R	6	44			4	Guthier,O	A
4.186	831028	1.6	0.090	M	11	56	15	4.0	6	Westlund,M	B
4.70	831029		0.31	N	7	53	14	5	1	Tanikawa,M	

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Disturbing lights: city lights.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
4.084	851325	0.050	2.8		39.6 x 27.0	20.00	Ektachrome	400/	N	M	429/P	1	Stolzen,P	A
4.090	851326	0.135	2.8		15.2 x 10.2	20.00	Ektachrome	400/	N	M	430/P	1	Stolzen,P	A
4.097	851327	0.500	3.5		4.1 x 2.7	10.00	Kodak 2415		Y		4/P	4	Guthier,O	B
4.109	851328	0.500	3.5		4.1 x 2.7	15.00	Kodak 2415		Y		5/P	4	Guthier,O	B
4.324	851329	0.050	2.0			0.33	Fujicolor HR 1600/	N	X		6/P	4	Wallace,B.G	C
4.368	851330	0.200	3.5		10.3 x 6.9	10.00	Fujichrome	400/	N	S	703/S	3	Woodyla,B	D
4.371	851331	0.050	1.8		39.6 x 27.0	2.00	Fujichrome	400/	N	T	704/S	3	Woodyla,B	D
4.374	851332	0.050	2.0			0.33	Fujicolor HR 1600/	N	X		11/P	4	Wallace,B.G	E
4.374	851333	0.050	1.8		39.6 x 27.0	2.00	Fujichrome	400/	N	T	705/S	3	Woodyla,B	D
4.378	851334	0.050	2.0			0.33	Fujicolor HR 1600/	N	X		12/P	4	Wallace,B.G	F
4.388	851335	0.200	3.5		10.3 x 6.9	8.00	Fujichrome	400/	N	S	708/S	3	Woodyla,B	D
4.398	851336	0.200	3.5		10.3 x 6.9	13.00	Fujichrome	400/	N	S	709/S	3	Woodyla,B	D

DATE: 4 APR 1986

DATE: 4 APR 1986

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
4.415	851337	0.200	3.5		10.3 x 6.9	15.00	Fujichrome	400/	N	S	672/S	3	Woidyla,B	D
4.491	851338	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak Tri-X	400/	N	X	003/P	1	Rosenthal,D	G
4.592	851339	0.508	5	0.100	4.1 x 2.7	12.00	Kodak IIA-D		N		028/P	4	Royer,R	H
4.592	851340	0.105	2.5		19.5 x13.0	12.00	Fujichrome	1600/	N		1/S	4	Royer,R	
4.607	851341	0.508	5	0.100	4.1 x 2.7	15.00	Kodak 098		N		029/P	4	Royer,R	
4.623	851342	0.180	2.8		11.4 x 7.6	15.00	Kodak 2415		Y	O	63/S	1	Garradd,G	I
4.861	851343	0.050	2.8		39.6 x27.0	0.50	Kodak Tri-X	400/	N	T	5/P	2	Jones,B.W	J
4.861	851344	0.050	2.8		39.6 x27.0	1.00	Kodak Tri-X	400/	N	T	6/P	2	Jones,B.W	J
4.863	851345	0.050	2.8		39.6 x27.0	2.00	Kodak Tri-X	400/	N	T	7/P	2	Jones,B.W	K
4.865	851346	0.050	2.8		39.6 x27.0	4.00	Kodak Tri-X	400/	N	T	8/P	2	Jones,B.W	K
4.870	851347	0.050	2.8		39.6 x27.0	8.00	Kodak Tri-X	400/	N	T	9/P	2	Jones,B.W	K
4.879	851348	0.050	2.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	10/P	2	Jones,B.W	K
4.889	851349	0.050	2.8		39.6 x27.0	0.50	Kodak Tri-X	400/	N	T	11/P	2	Jones,B.W	L
4.889	851350	0.050	2.8		39.6 x27.0	1.00	Kodak Tri-X	400/	N	T	12/P	2	Jones,B.W	L
4.891	851351	0.050	2.8		39.6 x27.0	2.00	Kodak Tri-X	400/	N	T	13/P	2	Jones,B.W	L
4.893	851352	0.050	2.8		39.6 x27.0	4.00	Kodak Tri-X	400/	N	T	14/P	2	Jones,B.W	L
4.898	851353	0.050	2.8		39.6 x27.0	8.00	Kodak Tri-X	400/	N	T	15/P	2	Jones,B.W	L
4.907	851354	0.050	2.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	16/P	2	Jones,B.W	L
4.917	851355	0.050	2.8		39.6 x27.0	0.50	Kodak Tri-X	400/	N	T	17/P	2	Jones,B.W	M
4.917	851356	0.050	2.8		39.6 x27.0	1.00	Kodak Tri-X	400/	N	T	18/P	2	Jones,B.W	M
4.919	851357	0.050	2.8		39.6 x27.0	2.00	Kodak Tri-X	400/	N	T	19/P	2	Jones,B.W	M
4.962	851358	0.225	1.7	0.140	9.1 x 6.1	7.00	Kodak 2415		Y	O	1/T	2	Furia,S	G
4.993	851359	0.225	1.7	0.140	9.1 x 6.1	20.00	Ilford FP 4	125/	N	O	2/T	2	Furia,S	G

NOTE A (Observer's image identifier is preceded by prefix 2. Ed.)

NOTE B Photograph made by F. Wilken and O. Guthier.

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

NOTE D (Observer's image identifier is preceded by prefix 1. Ed.)

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

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

NOTE G Instrument is Schmidt camera.

NOTE H Exposure duration uncertain: +3 or -0 minute. Wr. 4 filter used.

NOTE I Temperature for hypersensitization 60-65 deg. C.

NOTE J The UT start time is accurate. [sic] The stand was not accurately set up, so we have off-centre start trails. [sic] Film roll Tri-X/1.

NOTE K The UT start time is estimated. The stand was not accurately set up, so we have off-centre start trails. [sic] Film roll Tri-X/1.

NOTE L The UT start time is estimated. Wratten 47A (blue) filter used. The stand was not accurately set up, so we have off-centre start trails. [sic] Film roll Tri-X/1.

NOTE M The UT start time is estimated. Wratten 21 (orange) filter used. The stand was not accurately set up, so we have off-centre start trails. [sic] Film roll Tri-X/1.

DATE: 5 APR 1986

DATE: 5 APR 1986

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
5.000	818185	2.9	B	4C		5			0.03	B		8	4.9	Y	3	Fischer,D	A
5.031	818186	3.2	M	5A		4	2.1	297	0.08	EY		11	5.4	Y	1	Fleet,R.W	
5.035	818187	4.1	M	5A	21	6	1.8	299	0.08	B		11	5.4	Y	1	Fleet,R.W	
5.061	818188	3.6	B	IHW						EY			6.0	Y	3	Guthrie,O	
5.070	818189	4.1	M	5A					0.035	B		9	6.3	Y	1	Begbie,M.J.R	
5.072	818190	4.0	M	4C, 5A	15	6	1.32	300	0.04	B		12	6.1	Y	1	Henshaw,C	
5.08	818191	3.1	S	5A	30	6	2.0		0.050	B		10	7	Y	8	van Loo,F.R	
5.094	818192				11.0	6	4.5	295	0.30	N	8.5	102	6.5	Y	1	Begbie,M.J.R	B
5.108	818193	4.6	B	4C		2			0.03	B		8	4.5C	Y	1	Giraudi,J.D	
5.11	818194	2.8	V	5A	20	4	2.00	290		EY			6.5	Y	4	Merlin,J.-C	
5.130	818195	4.5	B	4C		2			0.03	B		8	4.5C	Y	1	Giraudi,J.D	
5.135	818196	3.7	B	4C		2			0.03	B		8	4.5C	Y	1	Giraudi,J.D	
5.15	818197	4.3	B	4C		5			0.050	B		7		Y	3	Jannink,D.W	C
5.17	818198	2.9	S	DCS 9	25	7	2.5		0.080	B		15	7.5	Y	3	Wills,P	D
5.191	818199	4.0	B	4C	10	6			0.06	R	8	15	5.0	Y	3	Schambeck,C.M	
5.253	818200	3.8	M	4C					0.040	B		7	3.5C	Y	6	Westlund,M	
5.253	818201				10	5			0.09	M	11	56	3.5C	Y	6	Westlund,M	
5.260	818202	2.8	S	5A	37	6	4.5		0.08	B		20	5.5	Y	7	Parisio,R	
5.264	818203	4.3		143					0.04	B		30		Y	1	Moreno,G	
5.267	818204	3.2	B	143		5	4.5		0.05	B		7	5.5	Y	3	Lupianez,B	
5.365	818205	3.8	B		24	2	0.67		0.05	B		7				Lairret,R	
5.40	818206	2.8		4C	25	5	3	290	0.030	B		8	6.5	Y	2	Ward,A	
5.44	818207	2.9		4C	15	4	2	310	0.040	B		8	5.0	Y	1	Keen,R	E
5.45	818208	2.6	B	4C	25	3	1	10		EY			5.0	Y	1	Keen,R	F
5.48	818209	2.7		4C	25	6		285	0.20	SC	10	77	6.5	Y	2	Ward,A	
5.531	818210	3.4		5A		3	3		0.05	B		10		Y	1	Tregaskis,T.B	G
5.542	818211	3.7	S	4C	18	6	5	50	0.080	B		11		Y	8	Pryal,J	H
5.56	818212	2.3		4C	30	2				EY			7	Y	14	Bouma,R.J	I
5.56	818213					4	4.5	280	0.05	B		10	7	Y	14	Bouma,R.J	J
5.57	818214	2.4		4C	30	7	4	285		EY			7.0	Y	31	Morris,C.S	
5.57	818215	2.5	M	4C	15	6	3	280	0.050	B		10	7.0	Y	31	Morris,C.S	K
5.57	818216	2.5	M	4C					0.050	R		8	7.0	Y	31	Morris,C.S	
5.576	818217	2.4	S	4C						EY			6.1	Y	1	Seargent,D	L
5.576	818218						0.5		0.08	B		15				Seargent,D	M
5.58	818219	2.5		4C			5.5			EY			6.7	Y	1	Lovejoy,T	N
5.59	818220	3.8	S	SAO	20	8	6	280	0.05	B		7	5.5	Y	2	Ashdown,M	O
5.625	818221	3.6	B	5A	20	8	1.5	295	0.05	B		7	4.2	Y	3	Bembrick,C	
5.63	818222	2.4	B	4C						EY			6.5	Y		Clark,M.L	P
5.646	818223	3.9	M	5A, 4A	7.6	6	0.50	270	0.1	N	10	40	4.5	Y	1	Ichikawa,K	
5.65	818224	3.2	S	4C	31	7	2.2		0.25	N	5	38	6.5	Y		Clark,M.L	Q
5.660	818225	2.5	S	5A			2			EY			6.0	Y	5	Garradd,G	
5.66	818226				23	7	4		0.035	B		7				Green,D.W.E	R
5.66	818227	3.2	B	IHW BAA		3	4.5			EY			6.5	Y	35	Green,D.W.E	S
5.70	818228	2.7	B	5A			3	310		EY						Hale,A	
5.72	818229	4.0		4C	16	5	2		0.120	B		20		T	Y	Okada,M	T
5.747	818230	3.5	M	5A, 5B	16	5	3	295	0.08	B		11	5	Y	3	Mitsuma,S	U
5.75	818231	4.0	S	5A		3			0.08	B		11	2.0	Y	1	Momose,M	
5.760	818232	3.3	B	5A					0.05	B		7	5.5	Y	5	Hayashi,H	
5.76	818233	3.5	M	SAO	18	6	1.1		0.065	R	8	16	4.5	Y	1	Nakamura,A	V
5.771	818234	4.5	B	5A					0.02	R		8	3.0C	Y	2	Kitamura,K	
5.778	818235				5.5	3	5		0.062	R	14.6	46	3.0C	Y	2	Kitamura,K	
5.78	818236	4.3	S	AAVSO	7	5			0.07	B		10	5.0M	Y	1	Hayashi,A	W
5.79	818237	4.0	S	AAVSO	9	4			0.13	N	6.3	24	4.5M	Y	1	Hayashi,A	W
5.79	818238	3.3	M	5A			3.0		0.05	B		7	5.5	Y	1	Suzuki,K	
5.795	818239	3.2	B	5A			0.5		0.035	B		7		Y	2	Okada,M	
5.806	818240	3.5	M	5A		7	4	306	0.12	C	10	40	4.5	Y	6	Cifuentes,E	
5.812	818241	3.0	S	4C	30	4	2.5	295	0.07	B		10	5.5	Y	1	Kobayashi,J	
5.854	818242	2.5	M	5A	36	9	2.8		0.05	B		10	6.5	Y	12	Melandri,F	X
5.865	818243	2.8	B	5A		7	5.0	300		EY				Y	1	Abbott,J	Y
5.865	818244	3.6	B	5A			4.5	295	0.06	B		15	4.8	Y	2	Vincent,J	Z
5.878	818245	3.5	B	5A	17	7	5.0	319	0.050	B		10	5.4	Y	1	Abbott,J	a
5.889	818246	3.1	M	5A		6	2.6	303		EY			5.3	Y	1	Fleet,R.W	
5.903	818247	3.6	M	5A	22	6	3.4	304	0.08	B		11	5.3	Y	1	Fleet,R.W	b
5.915	818248	2.6	S	143	36	3	3	305		EY			6.6	Y	7	Haver,R	
5.915	818249	2.8	S	143	32	4	3.5	305	0.05	B		7	6.6	Y	7	Haver,R	
5.938	818250	4.2	B		29	2			0.060	R	16	50	4.2	Y	1	Bagla,J.S	c
5.965	818251	3.8	M	5A					0.035	B		9	6.2	Y	1	Begbie,M.J.R	
5.965	818252	3.8	S	5A	16.0	5	4.00	316	0.13	R	4	21	5.9	Y	6	Campos,J	d
5.997	818253				14.1	7	4.0	285	0.30	N	8.5	102	6.2	Y	1	Begbie,M.J.R	B

NOTE A Milky Way still a problem. Coma diameter = 20'-25'.

NOTE B Tail measurement refers to dust tail only.

NOTE C Binocular limit is 7.

NOTE D PA 320 to 340.

NOTE E Modified Sidgwick method used. Extinction correction applied.

NOTE F Extinction correction applied.

NOTE G Through broken cloud. (Observer gave limit as approximately 10. Ed.)

NOTE H Tail appears forked. (Observer gave limit as 10. Ed.)

NOTE I Coma diameter approximate.

NOTE J Gas tail at PA 280. Broad dust fan includes other tail listings.

NOTE K Multiple tails define the shape of the fan tail. Edge of fan in PA 45 was very sharply defined.

NOTE L Drifting clouds.

NOTE M Anti-tail longer and brighter, length approximate.

NOTE N Naked eye tail length.

NOTE O PA = 280+.

NOTE P Street lights.

NOTE Q Street lights. PA of 2.2 deg. tail 335-310.

NOTE R Coma diameter and tail length approximate.

NOTE S Tail length approximate.

NOTE T Large extend tail. [sic].

NOTE U Tail I = 3 deg. Tail II = 1 deg.

NOTE V PA 280 to 320.

NOTE W Tail detected?

NOTE X With naked eye I can see a tail length of 1.5 deg., the tail is open like a fan, the data can be influenced by the Milky Way. Tail length is for ion tail.

NOTE Y Comparison stars 2.9, 1.9. Milky Way. PA given for mid-tail (3 deg.).

NOTE Z Tail streamer 5 deg. long. PA 270.

NOTE a Comparison stars (2.8, 3.6), (3.3, 3.6), (3.1, 4.1). Coma too large to adequately defocus stars except by using one half of binoculars (the right). PA given for tail at 3 deg. distance. Milky Way background.

NOTE b Material out to 0.5 deg., PA 30.

NOTE c Tail not visible.

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NOTE d Very faint tail.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
5.035	831030	4	0.08	B		11		5.4	1	Fleet,R.W	A
5.157	831031	0.25	0.20	N	8	120	61	5	1	Vargas B.,A.G	B
5.252	831032	1.6	0.090	M	11	56		3.5	6	Westlund,M	C
5.781	831033	0.29	0.062	R	14.6	46	10	3.0	1	Kitamura,K	D
5.809	831034	2.18	0.12	C	10	40	40	4.5	6	Cifuentes,E	E
5.882	831035		0.050	B		10	10	5.4	1	Abbott,J	F
5.903	831036	4	0.08	B		11		5.3	1	Fleet,R.W	G
5.941	831037		0.060	R	16	50	9		1	Bagla,J.S	

NOTE A Tail end point at PA 307. Leading edge at PA 292. Trailing edge at PA 312. Tail features lost in Milky Way. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Central tail at approx. PA 300. The tail was very wide and almost no visible to naked eye. A central tail was brighter than in extremes. The tail is too diffuse and wider than before, is almost no visible to the naked eye. A central tail is more bright the contour is very hazy. [sic] DC 5; coma diameter: 8' approx.

NOTE C Disturbing lights: city lights.

NOTE D DC 3. Tail and PA is not clear of city light and the atmosphere. A little err "coma total magnitude" of city light and the atmosphere. [sic] (Observer may be indicating uncertainty of magnitude estimate because of city lights and low position above horizon. Ed.) Coma total magnitude 4.5. City lights interfered with the observation.

NOTE E Tail 4 deg., PA 306.

NOTE F Central condensation approximately 5.6 arc min. diameter. Type II tail root at PA 310 deg., approximately 17 arc min. across; at 1 deg. from central condensation, PA 313 deg., approximately 30 arc min. across; at 2 deg. from central condensation, PA 316 deg., approximately 45 arc min. across; at 3 deg. from central condensation, PA 319 deg., approximately 55 arc min. across; at 4 deg. from central condensation, PA 330 deg., approximately 80 arc min. across; at 5 deg. from central condensation tail merging into Milky Way. There was Milky Way interference. Semi latus rectums (both) 8.6'. Vertex distance 6.5'. Type II tail width measured perpendicular to PA at that point. PA measured along tail axis. All dimensions and angles derived from AAVSO chart drawing. The central condensation (c.c.) appeared rather pearly, not quite planetary but certainly disclike. The c.c. was set within a well defined circular coma of diameter 17' and was placed forward of centre. No distinct type I tail could be seen and thus the tail was assumed to be type II. This tail was observed to gently curve northward and could be traced for some 5 deg. before the merger of surface brightness with a locally prominent part of the Milky Way. The tail was observed to have a sharper edge on the western side, although the first degree or so was quite sharply defined on both sides and of significant brightness relative to the coma.

NOTE G Main tail at PA 304. Type III [sic] at PA 30. Gas tail (?) at PA 289. Fan (?). Tail features lost in Milky Way. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
5.003	851360	0.225	1.7	0.140	9.1 x 6.1	5.00	Kodak 2415		Y		73/P	3	Koch,B	A
5.024	851361	0.200	2		10.3 x 6.9	8.00	Kodak 2415		Y	S	15/P	2	Dragesco,J	B
5.115	851362	0.500	3.5		4.1 x 2.7	10.00	Kodak 2415		Y		6/P	4	Guthier,O	C
5.289	851363	0.050	2.0			3.00	Kodak Tri-X	400/	N	C	8/P		Falsarella,N	
5.605	851364	0.050	2		39.6 x27.0	3.50	Fuji	400/	N		12/S		Pryal,J	
5.617	851365	0.135	2.8		15.2 x10.2	4.75	Fuji	400/	N		13/S		Pryal,J	
5.815	851366	0.180	2.8		11.4 x 7.6	5.00	Kodak 103a-O		N	O	1/C	5	Cimatti,A	
5.833	851367	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	2/C	5	Cimatti,A	
5.842	851368	0.050	2.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	8/P	2	Jones,B.W	D
5.853	851369	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	9/P	2	Jones,B.W	E
5.868	851370	0.050	1.8		39.6 x27.0	17.00	Kodak Tri-X	400/	N	T	10/P	2	Jones,B.W	F
5.882	851371	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	11/P	2	Jones,B.W	G
5.905	851372	0.225	1.7	0.140	9.1 x 6.1	10.00	Kodak 2415		Y	O	001/T	2	Battaini,P	
5.913	851373	0.050	2.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	16/P	2	Jones,B.W	H
5.924	851374	0.225	1.7	0.140	9.1 x 6.1	20.00	Ilford FP4	125/	N	O	002/T	2	Battaini,P	I
5.954	851375	0.050	2.8		39.6 x27.0	8.00	Agfa 1000 RS	1000/	N	T	213/S	2	Jones,B.W	J
5.999	851376	0.300	1.5	0.203	6.9 x 4.6	8.00	Kodak 2415		Y	X	11/P	1	Marafie,A.H	

NOTE A (Observer's image identifier preceded by prefix 100/. Ed.)

NOTE B (Observer supplied nonessential notes on original report form. Ed.)

NOTE C Photograph made by F. Wilken and O. Guthier.

NOTE D UT start time is accurate. Film roll Tri-X/2.

NOTE E UT start time is estimate. Film roll Tri-X/2.

NOTE F UT start time is estimate. Wratten 47A (blue) filter used. Film roll Tri-X/2.

NOTE G UT start time is estimate. Wratten 21 (orange) filter used. Film roll Tri-X/2.

NOTE H UT start time is estimate. Drive failed; hand driven. Film roll Tri-X/2.

NOTE I Instrument is Schmidt camera.

NOTE J (Observer's image identifier is Agfa/2/13. Ed.)

DATE: 6 APR 1986

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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
6.041	818254	3.0	B	IHW	29.0	6			0.050	B		10	6.0	Y	3	Guthier,O	A
6.059	818255	4.5	B	SA	30	7	6	0	0.065	B		20	6.2	Y	1	McBain,J	B
6.073	818256	3.7	M	4C, SA		6	1.98	290	0.04	B		12	6.1	Y	1	Henshaw,C	
6.09	818257	2.9	S	4C					0.05	B		7	4.0		14	Shanklin,J.D	C
6.094	818258	2.7	B	SA						EY		8	6.5	Y	3	Hasubick,W	
6.094	818259	2.7	B	SA			8		0.03	B		8	6.5	Y	3	Hasubick,W	D
6.094	818260			SA	29	5	5.3		0.08	B		20	6.5	Y	3	Hasubick,W	D
6.100	818261	2.6	B	4C	25	8	4		0.03	B		8	5.5	Y	3	Fischer,D	E
6.10	818262	2.9	S	SA	20	6	2.5		0.080	B		15	7	Y	8	van Loo,F.R	
6.104	818263	4.0	M	SA		6			0.050	B		12	5.0	N	1	Ventura,F	
6.111	818264	3.6	B	SA					0.05	B		7	6.5	Y	2	Kukkonen,I.T	
6.125	818265			SA	7.5	6			0.216	N	7.6	65	6.0	Y	4	Rogers,J.H	F
6.125	818266	3.3	B	SA	18					EY			6.0	Y	4	Rogers,J.H	G
6.125	818267	2.8	S	SA	38	6	4.6		0.08	B		20	5.5	Y	7	Parisio,R	
6.125	818268	3.0	S	SA	10	6	2.3	295	0.050	B		10	4.0	Y	8	Vanin,G	
6.128	818269	4.0	M	SA	14	6			0.05	B		12	5.5	Y	2	Tanti,T	H
6.13	818270	3.5	S	DCS 10		3	3	300	0.080	B		15	4.5C	Y	4	Scholten,A	I
6.132	818271				35	4	4.0	300	0.050	B		7	6.5	Y	2	Kukkonen,I.T	J
6.142	818272	3.1	B	SA		3	2.5	290	0.050	B		10	6.0	Y	4	Rogers,J.H	K
6.153	818273	3.3	S	SA	12	6			0.090	M	11	111	6.5	Y	2	Kukkonen,I.T	L
6.167	818274				9	6			0.080	B		15	7.5	Y	3	Wils,P	M
6.17	818275	2.9	S	DCS 10	25	6	3.0			EY		5.5	Y	6	Bottger,B		
6.174	818276	2.7	B	SA	27	6	3.0	300		EY		5.5	Y	6	Westlund,M	N	
6.194	818277				11	8	0.3	290	0.09	M	11	56	6.0	Y	7	Martinez,C	O
6.208	818278	3.4		143						EY		5.0C	Y	2	Villegas,S		
6.208	818279	3.5		143						EY		5.0	Y	1	Westlund,M	N	
6.229	818280	3.6	M	SA			3.8	282	0.040	B		7	6.0	Y	7	Lupianez,B	
6.257	818281	3.1	B	143	16	5	1.5		0.05	B		7	4.8C	Y	2	Linder,J	P
6.333	818282	2.9	B	SA	32	5	2.7	318		EY		5.0	Y	10	Benavides,A		
6.382	818283	3.8	B	161				282	0.05	B		7	5.0		3	Kaila,K	
6.415	818284	3.4	S	SA			4		0.050	B		10	6.4	Y	3	Keen,R	Q
6.45	818285	2.4		4C	12	6	3	310	0.040	B		8	4.5	Y	1	Ward,A	
6.45	818286	2.8		SA	25	6		290	0.20	SC	10	77	6.5	Y	2	Keen,R	R
6.46	818287	2.1	B	4C	15	5	1	310		EY		3	5.6		1	Jones,A	S
6.47	818288	3.0	S	SA					0.023	B		11			4	Jones,A	T
6.47	818289				18	8	1.5		0.080	B		86			8	Jones,A	R
6.48	818290	8.6	V	RASNZ					0.317	N	5				4	Bortle,J.E	
6.52	818291	2.7	B	4C	23					EY		6		Y	4	Foulkes,M	
6.535	818292	2.9	S	143			0.5	320		EY		5.5		N	8	Tregaskis,T.B	U
6.545	818293	3.3	S	SA	35	3	3	310	0.05	B		10		N	1	Tregaskis,T.B	V
6.545	818294	3.3	S	SA		3				EY		5		N	1	Ward,A	
6.55	818295	2.9	S	SA	25	5	2.5	300	0.030	B		8	6.5	Y	2	Bouma,R.J	
6.56	818296	2.4		SA		3				EY		7		Y	14	Lovejoy,T	W
6.58	818297	2.3		4C						EY		6.5		Y	1	Pryal,J	X
6.583	818298	4.0	S	SA	15	5	3	45	0.080	B		11		Y	8	Akita,I	Y
6.67	818299	2.6	S		35	6	12	295	0.080	B		11	6.5	Y	3	Garradd,G	Z
6.750	818300	2.3	S	SA						EY		6.5		Y	36	Hale,A	
6.75	818301	2.2	B	SA			2.5	310		EY		7		Y	2	Garradd,G	
6.753	818302								0.05	B		7		Y	2	Okada,M	
6.753	818303	3.2	B	SA					0.035	B		8	4.5M	Y	1	Kato,T	
6.757	818304	3.0	M	SA	13	5	0.5	300	0.030	B		20	4.5	Y	1	Okada,A	
6.76	818305	3.0	M	SA	15	6			0.08	B		16	4.5	Y	5	Nakamura,A	a
6.77	818306	3.5	M	SAO	21	5			0.065	R	8	7	2.0C	Y	1	Kanai,K	
6.771	818307	4.1	B	SA	6.6	6	0.2	335	0.05	B		7	2.0C	Y	1	Kanai,K	
6.771	818308	3.9	S	SA	6.6	6	0.2	335	0.05	B		10	5.0	Y	1	Kobayashi,J	
6.798	818309	3.3	S	SA	20	4	2.3	300	0.07	B		5		Y	1	Tregaskis,T.B	b
6.802	818310	2.7	S	SA		3				EY		10		Y	1	Tregaskis,T.B	c
6.805	818311	2.7	B	SA	40	3	3	310	0.05	B		10	4.0	Y	1	Nakamura,Y	
6.806	818312	4.0	B	SA	20	6			0.070	B		64		Y	1	Tregaskis,T.B	d
6.806	818313			SA	12	5			0.15	N	8	6.5		Y	36	Hale,A	z
6.81	818314	1.9	B	SA			4	310		EY		10	6.5	Y	12	Melandri,F	e
6.875	818315	2.2	M	SA	31	8	2.0		0.05	B		40	4.5	Y	6	Cifuentes,E	f
6.888	818316	3.3	M	SA	16.1	7		305	0.12	C	10	5.5		Y	1	Fleet,R.W	
6.889	818317	2.8	M	SA		7	2.0			EY		11	5.5	Y	1	Fleet,R.W	g
6.892	818318	3.3	M	SA	23	6	3.0	299	0.08	B		10	6.2	Y	3	Guthier,O	h
6.951	818319	2.7	B	IHW	45.0	7	5.0		0.050	B		7	4.5		15	Shanklin,J.D	C
6.96	818320	2.9	S	SA					0.05	B							

NOTE A Type I tail 7 deg. long, type II tail 4 to 5 deg. long.

NOTE B Seen 2 tails. [sic] 4 deg. tail at PA 370 [sic] noted at 6.063 April.

NOTE C Cloud.

NOTE D PA 315-330. Tail I plasma, tail II gas. [sic]

NOTE E Tail length approximate. Brilliant, fanned central condensation!!

NOTE F Not quite circular. Bright nucleus. Hint of tail.

NOTE G Coma diameter approximate. Faint stub of tail.

NOTE H Seeing good, transparency good. Haze.

NOTE I PA approximate.

NOTE J Coma diameter determined by comparing with neighboring stars.

NOTE K Tail very faint, broad and diffuse.

NOTE L Coma diameter determined as an average of two transit time observations.

NOTE M PA 330 to 350.

NOTE N Milky Way.

NOTE O Cloudy.

NOTE P Type I tail? Shadow behind nucleus.

NOTE Q Modified Sidgwick method used. Extinction correction applied.

NOTE R Extinction correction applied.

NOTE S Tail PA 285-310. Tail suspected to 2 degrees.

NOTE T Nucleus.

NOTE U Tail very faint and broad. PA approximate. Through broken cloud. (Observer gave limit as approximately 10. Ed.)

NOTE V Through broken cloud.

NOTE W Naked eye tail length.

NOTE X Getting nearer but fainter? (Observer gave limit as 10. Ed.)

NOTE Y Australia. (Translated by IHW staff. Ed.)

NOTE Z The 0.5 magnitude rise between the previous night's estimate and the first estimate on this night is believed real. During the next hour and a half the brightness appeared to rise an additional 0.3 magnitude, but the reality of this is not confirmed. An intense bright area in the central coma with two jets was observed with the 20 cm reflector; this appeared to be slightly more fanned out by the beginning of dawn.

NOTE a Tail length = yes. PA 290 to 350.

NOTE b Misty cloud.

NOTE c Tail very faint. Misty cloud. (Observer gave limit as approximately 9. Ed.)

NOTE d Misty cloud. (Observer gave limit as approximately 11.5. Ed.)

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NOTE e I can see all the 2 deg. of tail with naked eye. Tail length is for ion tail.  
 NOTE f Tail length 4 deg. to 4.5 deg.  
 NOTE g Material out to 1.8 deg., PA 313.  
 NOTE h Tail I + II length.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
6.076	831038		0.125	R	6	44			4	Guthier,O	A
6.118	831039		0.125	R	6	44			4	Guthier,O	A
6.125	831040		0.216	N	7.6	135,230		6.0	4	Rogers,J.H	B
6.130	831041	6.32	0.050	B		7	15	6.5	2	Kukkonen,I.T	C
6.191	831042	1.6	0.090	M	11	56	10	6.0	7	Westlund,M	D
6.214	831043		0.216	N	7.6	135,230	15	6.0	4	Rogers,J.H	E
6.227	831044	6	0.040	B		7	5	6.0	7	Westlund,M	F
6.556	831045	0.42	0.090	M	11	40	10	6.0	8	Foulkes,M	G
6.623	831046	1.64	0.065	B		12	4	6.0	8	Foulkes,M	H
6.885	831047	2.66	0.12	C	10	40	60	4.5	6	Cifuentes,E	I
6.892	831048	4	0.08	B		11		5.5	1	Fleet,R.W	J
6.949	831049		0.125	R	6	44			4	Guthier,O	A
6.951	831050	0.48	0.060	R	11.6	35	30		1	Shankar,A	K
6.964	831051	0.11	0.060	R	11.6	30, 35	65		1	Shankar,A	L

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Broad diffuse jet at PA about 90 to 120, length 0.75'. Probably another jet, ever more diffuse at PA about 210. Bright unresolved nucleus visible. Coma diameter 3'. (Duration not indicated. Time of observation is start time. Ed.)

NOTE C Tail length 4 deg, PA 300. Tail brightness considerably lower than coma brightness. The SW edge of the tail was slightly brighter than other parts of tail. The central parts of coma brightest. Degree of condensation approximately 4.

NOTE D Disturbing lights: Milky Way.

NOTE E Broad jet or fan at PA about 90 to 150. Narrower jet on edge at PA 90, length 0.3'. Coma diameter 5.4-6.0'. Nucleus - still very bright but not quite stellar.

NOTE F Field of view 9 deg. Disturbing lights: Milky Way.

NOTE G Bright almost star-like central condensation which was displaced to PA about 45 deg. from the coma centre. Kink in south west edge of tail. Tail PA 320-330.

NOTE H 2 degree tail, PA 320, from coma. Coma outer envelope 25' across, fuzzy. Single tail through slight broadening near the head at PA about 45 deg. Tail projected onto Milky Way which may have affected its visibility. DC = 6 to 7.

NOTE I Tail 4 deg. to 4 deg. 30', PA 305.

NOTE J Main tail at PA 299. Trailing edge at PA 313. Tail features lost in Milky Way. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE K 10x50 binoculars also used.

NOTE L (The observer supplied a detailed explanation of his intensity contour sketch. A summary prepared by the IBW staff could not do justice to the original sketch and explanation. Extreme ends of observer's start and end times given. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
6.009	851377	0.300	1.5	0.203	6.9 x 4.6	15.00	Kodak 2415		Y	X	12/P	1	Marafie,A.H	
6.043	851378	0.050	2.8		39.6 x27.0	5.00	Ektachrome	400/	N	M	434/P	1	Stolzen,P	A
6.052	851379	0.500	3.5		4.1 x 2.7	10.00	Kodak 2415		Y		7/P	4	Guthier,O	B
6.059	851380	0.135	2.8		15.2 x10.2	10.00	Ektachrome	400/	N	M	435/P	1	Stolzen,P	A
6.067	851381	0.500	3.5		4.1 x 2.7	20.00	Kodak 2415		Y		8/P	4	Guthier,O	B
6.105	851382	0.200	2		10.3 x 6.9	13.00	Kodak 2415		Y	S	16/P	2	Dragesco,J	C
6.106	851383	0.225	1.7	0.140	9.1 x 6.1	10.00	Kodak 2415		Y		85/P	3	Koch,B	D
6.196	851384	0.050	1.8		39.6 x27.0	5.00	3M 1000		N	S	001/P	2	Mobberley,M	E
6.228	851385	1.80	6	0.30	1.1 x 0.8	0.50	Kodak Tri-X	400/27	N	X	010/P	3	Castineiras,R.S.J	F
6.233	851386	0.085	4.0		23.9 x16.1	20.00	103a-O		N	C	6/S	1	Binnervies,S	
6.234	851387	0.085	2.0		23.9 x16.1	1.00	Kodak Tri-X	400/	N	O	58/P	8	Bottger,B	G
6.240	851388	0.050	1.8		39.6 x27.0	4.50	Fujichrome	400/	N	O	12/P	6	Bottger,B	H
6.240	851389	0.085	2.0		23.9 x16.1	4.50	Kodak Tri-X	400/	N	O	59/P	8	Bottger,B	G
6.240	851390	0.200	3.5		10.3 x 6.9	4.50	Fujichrome	400/	N	O	23/P	8	Bottger,B	G
6.246	851391	0.200	3.5		10.3 x 6.9	3.50	Fujichrome	400/	N	O	25/P	8	Bottger,B	G
6.258	851392	0.050	2.0			3.50	Kodak Tri-X	400/	N	C	9/P		Falsarella,N	
6.335	851393	0.135	2.8		15.2 x10.2	5.50	Fujichrome	400/	N		619/P		Gianforte,J.S	I
6.462	851394	0.050	2		39.6 x27.0	10.00	Konica	1600/	Y	S	7/S	1	Pacholka,W	
6.639	851395	2.100	7	0.30		10.00	Sakura SR	1600/	N		14/P	2	Kojima,T	J
6.824	851396	0.050	2.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	7/P	2	Jones,B.W	K
6.835	851397	0.180	2.8		11.4 x 7.6	5.00	Kodak 103a-O		N	O	3/C	5	Cimatti,A	
6.836	851398	0.050	1.8		39.6 x27.0	3.00	Kodak VR	1000/	N	C	3/P	3	Vincent,F	L
6.838	851399	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	8/P	2	Jones,B.W	M
6.851	851400	0.050	1.8		39.6 x27.0	15.75	Kodak Tri-X	400/	N	T	9/P	2	Jones,B.W	N
6.868	851401	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	12/P	2	Jones,B.W	N
6.873	851402	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	4/C	5	Cimatti,A	
6.882	851403	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	13/P	2	Jones,B.W	M
6.888	851404	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	5/C	5	Cimatti,A	
6.896	851405	0.050	2.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	14/P	2	Jones,B.W	K
6.916	851406	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	6/C	5	Cimatti,A	
6.934	851407	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	7/C	5	Cimatti,A	
6.960	851408	0.225	1.7	0.140	9.1 x 6.1	6.00	Kodak 2415		Y		88/P	3	Koch,B	D
6.992	851409	0.500	3.5		4.1 x 2.7	20.00	Kodak 2415		Y		9/P	4	Guthier,O	B

NOTE A (Observer's image identifier is preceded by prefix 2. Ed.)

NOTE B Photograph made by F. Wilken and O. Guthier.

NOTE C (Observer supplied nonessential notes on original report form. Ed.)

NOTE D (Observer's image identifier preceded by prefix 100/. Ed.)

NOTE E This color slide film was processed as a negative and push processed to approximately ASA 4000.

NOTE F City lights.

NOTE G Photograph made by J. Linder and B. Bottger.

NOTE H Observation made by J. Linder and B. Bottger.

NOTE I (Observer's image identifier is 116-9. Ed.) UT start time approximate.

NOTE J Jet structure.

NOTE K Film roll Tri-X/3.

NOTE L Some patchy cloud.

NOTE M Wratten 47A (blue) filter used. Film roll Tri-X/3.

NOTE N Wratten 21 (orange) filter used. Film roll Tri-X/3.

DATE: 7 APR 1986

DATE: 7 APR 1986

## 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
7.04	818321	2.6	S	5A	30	7	2.5		0.050	B		10	7	Y	8	van Loo, F.R	A
7.07	818322	2.4	V	5A	25	5	1.50	325		EY		8	6.5	Y	4	Merlin, J.-C	
7.101	818323	3.9	M	5A	25	5	1.5	270	0.04	B		16	4.9C	Y	3	Taylor, M.D	B
7.101	818324	4.4	S	5A	20	6	1.5		0.07	B		16	4.9C	Y	3	Taylor, M.D	C
7.111	818325				13	6			0.09	M	11	56	5.0	Y	7	Westlund, M	D
7.12	818326	3.5	M	4C	15	4	3.0	310	0.05	B		7		Y	3	Keszthelyi, S	E
7.125	818327	2.5	B	5A	25	6	2		0.03	B		8	5.0	Y	3	Fischer, D	F
7.125	818328	3.1	B	143, 161	16	5	1.5		0.05	B		7	4.5C	Y	2	Lupianez, B	
7.125	818329	3.7	B	5A	18	5	2.6		0.06	R	8	15	5.5	Y	3	Schambeck, C.M	G
7.142	818330	3.2	B	5A					EY				5.8	Y	4	Rogers, J.H	H
7.142	818331	3.2	S	5A	18	4	1.2	290	0.050	B		10	5.8	Y	4	Rogers, J.H	I
7.146	818332	2.4	B	5A	36	6	4.5	313		EY			5.5	Y	7	Botzger, B	
7.153	818333	3.3	M	5A			2.0	294	0.040	B		7	5.0	Y	7	Westlund, M	D
7.17	818334	2.7	S	DCS 10	25	6			0.080	B		15	7.5	Y	3	Wils, P	
7.177	818335	3.5	B	143, 161	20	4	1.5	300	0.05	B		7	5.5C	Y	2	Martinez, C	
7.188	818336	2.5	B	5A	32	6	2.4	315		EY			5.5	Y	8	Linder, J	J
7.226	818337	2.9	B	161	7.5	2	0.5	240	0.06	R	12	56	5.5	Y	1	Onofre D., D	
7.24	818338	2.7	M	IHW	30	5	2	290	0.035	B		7	4.0	Y	5	Granslo, B.H	K
7.292	818339		B			8			0.08	B		11		Y	5	Gorski, L	
7.351	818340	2.7	B	161	21	5	0.6	304	0.05	B		20	4.0	Y	1	da Silva, L.A.L	L
7.4063	818341	3.1	S	DCS	32	8	2.15	328	0.080	B		20	5.4	Y	5	Machholz, D	
7.4097	818342	3.0		DCS	22	7	2.58	328		EY			5.4	Y	5	Machholz, D	
7.4201	818343	3.0	S	DCS	36	7	2.16	328	0.050	B		7	5.4	Y	5	Machholz, D	
7.44	818344	2.3	B	OH, 4C					EY				6.0	Y	4	Keen, R	M
7.48	818345	3.0	S	5A					0.023	B		3		Y	2	Jones, A	N
7.48	818346	2.8	SAO		25	4		290		EY			6.0	Y	2	Ashdown, M	
7.49	818347	2.3	S	5A	27	7			0.023	B		3	5.6	Y	2	Jones, A	O
7.49	818348				25	7	2.0		0.080	B		11		Y	8	Jones, A	P
7.51	818349	3.0	B	5A	25	6		315	0.20	SC	10	77	6.5	Y	2	Ward, A	
7.521	818350	4.1	S	5A	15	5	4	40	0.080	B		11		Y	8	Pryal, J	
7.528	818351	2.6	S	142, 143			0.75	300		EY			5.6	Y	9	Foulkes, M	
7.53	818352	3.3	B	5A		4			0.050	B		7	4.8C	Y	1	Matchett, V	
7.559	818353	2.8	B	5A	30	3				EY			6	Y	1	Tregaskis, T.B	Q
7.563	818354	2.8	B	5A	40	3	3		0.05	B		10		Y	1	Tregaskis, T.B	R
7.576	818355	2.1	S	5A	40	6				EY			6.2	Y	1	Seargent, D	
7.576	818356					4		290	0.08	B		15		Y	3	Seargent, D	
7.583	818357	3.5	B	5A	20	8	2.5	280	0.05	B		7	4.1	Y	3	Bembrick, C	
7.59	818358	2.0	M	5A	30	5	3.5	275	0.05	B		10	7	Y	14	Bouma, R.J	S
7.59	818359	1.9	S	5A		4				EY			7	Y	14	Bouma, R.J	
7.590	818360	3.0	S	5A	20		1	290	0.05	B		7	5.7	Y	1	Bryant, K	T
7.60	818361	2.6	B	IHW BAA	35	5	5			EY				Y	2	Green, D.W.E	U
7.60	818362	3.1	S	5A	20	5			0.030	B		8	6.5	Y	2	Ward, A	
7.604	818363	3.0	S	4C	14	7	3.5	250	0.080	B		20		Y	1	Batza, H	V
7.62	818364				40	7	13	300		EY			6.0	Y	32	Morris, C.S	
7.62	818365	2.3	M	4C, 5B	21	5	3.75	297	0.050	B		10	6.0	Y	32	Morris, C.S	W
7.70	818366	2.5	B	5A		7	4.7	305		EY			6.9	Y		Pearce, A	
7.71	818367	2.4	B	5A						EY			7.0	Y		Clark, M.L	X
7.711	818368	2.2	S	5A						EY			6.0	Y	2	Garradd, G	
7.715	818369								0.05	B		7		Y		Garradd, G	
7.72	818370	2.8	S	5A	41	7	1.1		0.076	B	8	15	7.0	Y		Clark, M.L	Y
7.73	818371	3.3	S	5A	35	7	3.1		0.25	N	5	38	7.0	Y		Clark, M.L	Z
7.753	818372	3.3	M	5A	15	5			0.030	B		8	5.0M	Y	1	Kato, T	
7.753	818373	3.6	M	5B	19	4		315	0.08	B		11	3.5	Y	1	Mitsuma, S	a
7.76	818374	1.9	B	5A		3		315		EY			6.5	Y	36	Hale, A	b
7.76	818375					3		315	0.05	B		10	6.5	Y	36	Hale, A	c
7.76	818376	3.6	M	SAO	22	6	0.8		0.065	R	8	16	4.5	Y	6	Nakamura, A	
7.76	818377	2.8	M	5A	20	6			0.08	B		20	5.0	Y	1	Kanai, K	
7.761	818378	3.5	S	5B	17.8	5	0.4	330	0.05	B		7	2.5C	Y	1	Kanai, K	
7.764	818379	3.4	M	5B	20	4			0.05	B		7	3.5	Y	1	Mitsuma, S	
7.769	818380	3.7	B	5B	17.8	5	0.4	330	0.05	B		7	2.5C	Y	1	Kanai, K	
7.77	818381	1.9	S	5A						EY			7	Y	15	Bouma, R.J	
7.78	818382	4.2	S	AAVSO	8	4			0.07	B		10	4.0	Y	1	Hayashi, A	
7.79	818383	4.0	S	AAVSO	10	4			0.13	N	6.3	24	4.0	Y	1	Hayashi, A	
7.79	818384	3.5	M	5A			4.0		0.05	B		7	6.0	Y	1	Suzuki, K	d
7.810	818385	2.5	S	143	42		2.5	300		EY			6.5	Y	7	Haver, R	
7.813	818386	2.6	S	5A	30	3				EY			6	N	1	Tregaskis, T.B	e
7.816	818387	3.4	S	5A	50.0	5	5.50	305	0.08	B		30	7.0	Y	7	Campos, J	f
7.819	818388		S	5A	30	3	3	315	0.05	B		10		N	1	Tregaskis, T.B	
7.820	818389	3.0	S	5A	1	3	3.0	310		EY			7.0	Y	7	Campos, J	
7.820	818390	2.6	S	143	45	3	3.3	300	0.05	B		7	6.5	Y	7	Haver, R	
7.875	818391	3.2	S	5A	30	7	5		0.05	B		7	6.0	Y	2	Dietrich, M	g
7.882	818392		S	5A	35	7			0.05	B		10	6.0	Y	12	Melandri, F	
7.894	818393	3.5	M	5A	19.0	7	2	314	0.12	C	10	40	5.0	Y	6	Cifuentes, E	
7.896	818394	2.6	B	IHW	33.0	6	6.5		0.050	B		10	6.2	Y	3	Guthier, O	h
7.896	818395	3.6	B	5A		4		310	0.06	B		15	5.7	Y	2	Vincent, J	i
7.900	818396	2.5	B	5A	25	7	5		0.03	B		8	5.5	Y	3	Fischer, D	j
7.928	818397	2.5	B	IHW						EY			6.2	Y	3	Guthier, O	
7.962	818398	3.5	M	5A	28	5	3.7	306	0.08	B		11	5.6	Y	1	Fleet, R.W	
7.965	818399	2.8	M	5A		4	2.9	314		EY			5.6	Y	1	Fleet, R.W	
7.97	818400	2.6	S	5A						EY			6.0	Y	16	Shanklin, J.D	k
7.979	818401	2.8	S	5A	39	6	4.7		0.08	B		20	6.0	Y	7	Parisio, R	

NOTE A Dust tail 2.5 deg. long, gas tail 2.0 deg. long.

NOTE B Antoniadis III. Second tail PA 270 to 300.

NOTE C Central condensation = 4.6 arc min. diameter. Tail PA 270 to 300.

NOTE D Milky Way.

NOTE E 6 mag. nucleus.

NOTE F Milky Way hampers interpretation of tail structure. Tail length exceeds 2 deg.

NOTE G PA 294 to 307.

NOTE H Tail suspected.

NOTE I Tail broad + faint, length approximate. See drawing. Coma elongated transverse to tail.

NOTE J Type I tail.

NOTE K Coma diameter and PA approximate.

NOTE L Cirrus.

NOTE M Observation from airplane near Hawaii.

NOTE N DC in 7x50 binoculars: 8.

NOTE O Coma wider than tail near head. Tail PA 285-300. Large nucleus or small condensation in 0.317 Newtonian at 86x.

NOTE P Tail much bright along west side. [sic] (Observer gave limit as 10. Ed.)

NOTE Q Coma diameter approximate. Clear.

NOTE R Tail faint. Clear. (Observer gave limit as approximately 10. Ed.)

NOTE S Gas tail at PA 275. Broad dust fan includes other tail listings. Tail length approximate at PA 50. PA 285 is approximate.

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NOTE T DC = strong.  
 NOTE U Coma diameter and tail length approximate.  
 NOTE V (Observer gave limit as 10.0. Ed.)  
 NOTE W Multiple tails define the shape of the fan tail. West edge of fan was sharply defined.  
 NOTE X Dust tail fanned with 3 main concentrations.  
 NOTE Y Tails photo'd. to 4.7 deg. and 8.8 deg. PA of 1.1 deg. tail is 332-327; PA of 1.5 deg. tail is 28-7. Instrument is catadioptric Newtonian.  
 NOTE Z PA of 3.1 deg. tail is 332-327.  
 NOTE a Tail length 1 to 2 deg.  
 NOTE b The magnitude was measured several times throughout the night, with the brightness remaining constant. In the 20 cm reflector the central bright area noted the previous night was much larger, with at least 3 or 4 jets observed.  
 NOTE c PA 300 to 350.  
 NOTE d Wind.  
 NOTE e Tail not definite. Clear.  
 NOTE f Tail PA approximate. Dawn and hazy. (Observer gave limit as approximately 9.5. Ed.)  
 NOTE g 5 deg. tail is dust, 3.5 deg. tail is ion. (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE h Tail I.  
 NOTE i 5.7 near 6193. Comp. star Eta 3.3. Naked eye magnitude 3.3. DC = 5.  
 NOTE j Tail length exceeds 5 deg. Tail straight (obviously ion).  
 NOTE k Cloud.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
7.053	831052		0.125	R	6	44			4	Guthier,O	A
7.106	831053	1.6	0.090	M	11	56	15	5.0	7	Westlund,M	B
7.135	831054		0.216	N	7.6	135,230	10	5.8	4	Rogers,J.E	C
7.142	831055		0.050	B		10		5.8	4	Rogers,J.E	D
7.149	831056	6	0.040	B		7	10	5.0	7	Westlund,M	B
7.202	831057	0.13	0.20	SC	10	226	17	5.5	3	Schambeck,C.M	
7.536	831058	1.95	0.065	B		12	16	5.5	9	Foulkes,M	E
7.648	831059		0.254	N	6	61, 11, 7	145			Pavlutschenko,B	F
7.868	831060		0.050	B		7			2	Soc. Astro. de France	G
7.884	831061	2	0.12	C	10	40	65	5.0	6	Cifuentes,E	H
7.951	831062	1.0	0.050	B		10	10	6.2	1	Abbott,J	I
7.962	831063	4	0.08	B		11		5.6	1	Fleet,R.W	J
7.965	831064		0.125	R	6	44			4	Guthier,O	A

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE B Disturbing lights: Milky Way.  
 NOTE C Nucleus - more diffuse than last night: a fuzzy blob of diameter about 15". Broad fan with sharp edge in PA 90 deg., length about 40", fan extends diffusely to PA about 150 deg. (Generally like April 6, 0500, but nucleus more diffuse.) Tail not visible, but coma elongated in that direction.  
 NOTE D Coma elongated transversely to line of tail: 0.3 deg. diameter, DC 4. Broad faint tail 1.2 deg. long. Ray visible in tail. Possible diffuse glow on north side of tail - may be Milky Way. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE E Tail at PA 290, length 3 deg. 10'. Coma inner envelope 24', outer envelope 35'. Bright spot in centre. Coma DC = 6. Tail length measured from field stars identified on AAVSO charts. Southwest edge (PA 290 deg.) very sharp and distinct. North edge fuzzy. Brighter but short tail feature at PA 330 deg.  
 NOTE F Between the hours of 1:20 and 3:45 am on 8th April, 1986, the comet appeared to have a small, pinhead nucleus with a large tenuous coma whose faint glow filled the entire mirror [sic] of my f/5.10" Newtonian using a 25 mm orthoscopic lens. Rapid movement of the comet was easily perceptible against the starry background with only 20 seconds viewing, and moved at a rate similar to an hour hand of a clock. The faint wide tail was only visible to about 2 degrees of length. These details were also confirmed at Coonabarabran on two consecutive nights, being 4/4/86 and 5/4/86, from the N.E.C. Japanese observation site through an f/4.8" Newtonian, 11x80 and 7x50 binoculars. (Listing data inferred from written description. No drawing submitted. Ed.)  
 NOTE G Drawing made by S. Thebault. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE H Tail 2 deg., PA 314.  
 NOTE I Central condensation approximately 4.0 arc min. Brighter tail spine at PA 304 deg., approximately 16 arc min. length by 8 arc min. width at root tapering to 1 arc min. Plasma tail, type I at PA 304 deg., approximately 20 arc min. width at root tapering to 16 arc min., length 2 deg. 54 arc min. Dust tail, type II, at 20 arc min. from central condensation, PA 6 deg., width 20 arc min., at 32 arc min. from central condensation PA 346 deg., width 19 arc min., at 46 arc min. from central condensation PA 329 deg., width 20 arc min. Dust tail, type III?, at leading edge PA 6 deg., width 20 arc min. There was Milky Way interference, a darker region of the Milky Way though, less interference than April 5. Vertex distance 6.6'. Semi latus rectum 11.8' (both); coma presenting a well defined 'lens'. Type II widths measured perpendicular to type I tail PA. Dimensions and angles from AAVSO chart plot. The central condensation (c.c.) was observed to be very hard and sharply defined as a planetary-like disk. The c.c. was set forward of centre within the distinct lens-shaped coma (24x14 arc min.). A tail spine was observed, but only marginally brighter than the surrounding material. A straight type I tail was observed to the northwest. It appeared rather less broad than the coma at the root, narrowing slightly over the length of nearly 3 deg. The tail appeared to show a low rate of brightness fall-off with length away from the coma. The western tail edge appeared very sharply defined. There was a fuzzy and asymmetrical type II tail to the north. This tail appeared less bright than the type I tail and was soon lost to the Milky Way background. There was a short brush of material set at a sharp angle (62 deg.) to the type I tail. Of similar brightness to the asymmetrical type II tail, this possible type III tail [sic] exhibited a quite straight leading edge. Clouds not near comet.  
 NOTE J Gas tail(?) at PA 306. Dust tail at PA 327. Tail features lost in Milky Way. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
7.010	851410	0.500	3.5		4.1 x 2.7	15.00	Kodak 2415		Y		10/P	4	Guthier,O	A
7.011	851411	0.050	1.8		39.6 x 27.0	3.00	Kodak Tri-X	400/	N	X	1/P	12	Melandri,F	
7.052	851412	0.050	2.8		39.6 x 27.0	10.00	Ektachrome	400/	N	M	440/P	1	Stolzen,P	B
7.064	851413	0.500	3.5		4.1 x 2.7	15.00	Kodak 2415		Y		11/P	4	Guthier,O	C
7.106	851414	0.225	1.7	0.140	9.1 x 6.1	10.00	Kodak 2415		Y		92/P	3	Koch,B	D
7.153	851415	0.085	2.0		23.9 x 16.1	15.00	Kodak Tri-X	400/	N	O	18/P	8	Bottger,B	E
7.168	851416	0.050	1.8		39.6 x 27.0	10.00	Fujichrome	400/	N	O	50/P	8	Bottger,B	E
7.201	851417	0.050	1.8		39.6 x 27.0	8.00	Fujichrome	400/	N	O	45/P	8	Bottger,B	E
7.232	851418	0.200	3.5		10.3 x 6.9	19.50	Fujichrome	400/	N	O	44/P	8	Bottger,B	E
7.232	851419	0.200	2.8		10.3 x 6.9	19.50	Fujichrome	400/	N	O	51/P	8	Bottger,B	E
7.276	851420	0.050	2.0			5.00	Kodak Tri-X	400/	N	C	10/P		Falsarella,N	
7.294	851421	0.085	4.0		23.9 x 16.1	20.00	103a-O		N	C	7/S	1	Binnewies,S	
7.365	851422	0.055	2.8		36.2 x 24.6	120.00	103a-E		N	S	1/S	1	Binnewies,S	F
7.410	851423	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak Tri-X	400/	N	X	004/P	1	Rosenthal,D	G
7.430	851424	0.605	1.7		3.4 x 2.3	20.00	Kodak 2415		N	T	1/P	1	Levy,A	
7.458	851425	0.605	1.7		3.4 x 2.3	17.00	Kodak 2415		N	T	2/P	1	Levy,A	
7.565	851426	0.100	2.8		20.4 x 13.7	7.00	3M 1000	1000/	N		9/S	2	Robertson,G	H
7.572	851427	0.210	4.5		9.8 x 6.5	7.00	3M 1000	1000/	N		10/S	2	Robertson,G	I
7.583	851428	0.105	2.5		19.5 x 13.0	10.00	Fujichrome	1600/	N		3/S	2	Royer,R	
7.585	851429	0.508	5	0.100	4.1 x 2.7	16.00	Kodak 098		N		030/P	2	Royer,R	
7.586	851430	0.135	2.8		15.2 x 10.2	20.00	Kodak EPD	200/	Y		2/S	1	Sabers,D	
7.590	851431	0.050	1.7		39.6 x 27.0	2.00	3M	1000/	N	O	1/T	5	Martin,D	
7.590	851432	0.050	1.7		39.6 x 27.0	2.00	Kodak Tri-X	400/	N	O	20/C	5	Martin,D	
7.594	851433	0.050	1.7		39.6 x 27.0	4.00	3M	1000/	N	O	2/T	5	Martin,D	
7.594	851434	0.050	1.7		39.6 x 27.0	4.00	Kodak Tri-X	400/	N	O	21/C	5	Martin,D	



DATE: 7 APR 1986

DATE: 7 APR 1986

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
7.601	851435	0.050	2		39.6 x27.0	20.00	Ektachrome	200/	N	T	1/S	1	Isenhardt,C	J
7.601	851436	0.050	1.7		39.6 x27.0	6.00	3M	1000/	N	O	3/T	5	Martin,D	
7.601	851437	0.050	1.7		39.6 x27.0	6.00	Kodak Tri-X	400/	N	O	23/P	5	Martin,D	
7.606	851438	0.135	2.8		15.2 x10.2	6.00	Ektachrome	400/	N		15/S		Pryal,J	
7.607	851439	0.050	1.7		39.6 x27.0	5.00	3M	1000/	N	O	4/T	5	Martin,D	
7.607	851440	0.050	1.7		39.6 x27.0	5.00	Kodak Tri-X	400/	N	O	24/C	5	Martin,D	
7.620	851441	0.050	1.7		39.6 x27.0	8.00	3M	1000/	N	O	5/T	5	Martin,D	
7.620	851442	0.050	1.7		39.6 x27.0	8.00	Kodak Tri-X	400/	N	O	26/C	5	Martin,D	
7.631	851443	0.050	1.7		39.6 x27.0	10.00	3M	1000/	N	O	6/T	5	Martin,D	
7.631	851444	0.050	1.7		39.6 x27.0	10.00	Kodak Tri-X	400/	N	O	28/C	5	Martin,D	
7.641	851445	0.050	1.7		39.6 x27.0	4.00	3M	1000/	N	O	7/T	5	Martin,D	
7.646	851446	0.050	1.7		39.6 x27.0	6.00	3M	1000/	N	O	8/T	5	Martin,D	
7.646	851447	0.050	1.7		39.6 x27.0	6.00	Kodak Tri-X	400/	N	O	31/C	5	Martin,D	K
7.651	851448	0.050	1.7		39.6 x27.0	8.00	3M	1000/	N	O	9/T	5	Martin,D	
7.651	851449	0.050	1.7		39.6 x27.0	8.00	Kodak Tri-X	400/	N	O	32/P	5	Martin,D	K
7.660	851450	0.050	1.7		39.6 x27.0	10.00	3M	1000/	N	O	10/T	5	Martin,D	
7.660	851451	0.050	1.7		39.6 x27.0	10.00	Kodak Tri-X	400/	N	O	33/C	5	Martin,D	K
7.674	851452	0.050	1.7		39.6 x27.0	2.00	Kodak Tri-X	400/	N	O	34/C	5	Martin,D	L
7.678	851453	0.200	4.5		10.3 x 6.9	4.00	3M	1000/	N	O	11/T	5	Martin,D	
7.678	851454	0.050	1.7		39.6 x27.0	4.00	Kodak Tri-X	400/	N	O	35/C	5	Martin,D	L
7.683	851455	0.050	1.7		39.6 x27.0	6.00	Kodak Tri-X	400/	N	O	36/C	5	Martin,D	L
7.689	851456	0.200	4.5		10.3 x 6.9	8.00	3M	1000/	N	O	12/T	5	Martin,D	
7.689	851457	0.050	1.7		39.6 x27.0	8.00	Kodak Tri-X	400/	N	O	37/P	5	Martin,D	L
7.697	851458	0.200	4.5		10.3 x 6.9	10.00	3M	1000/	N	O	13/T	5	Martin,D	
7.697	851459	0.050	1.7		39.6 x27.0	10.00	Kodak Tri-X	400/	N	O	38/C	5	Martin,D	L
7.824	851460	0.050	2.8		39.6 x27.0	8.00	Agfa 1000 RS	1000/	N	T	319/S	2	Jones,B,W	M
7.824	851461	0.050	1.8		39.6 x27.0	2.00	Kodak VR	1000/	N	C	4/P	3	Vincent,F	N
7.839	851462	0.180	2.8		11.4 x 7.6	7.00	Kodak 103a-O		N	O	8/C	5	Cimatti,A	
7.848	851463	0.050	2.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	5/P	2	Jones,B,W	O
7.861	851464	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	9/C	5	Cimatti,A	
7.862	851465	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	6/P	2	Jones,B,W	P
7.875	851466	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	7/P	4	Guthier,O	Q
7.884	851467	0.500	3.5		4.1 x 2.7	15.00	Kodak 2415		Y		12/P	4	Guthier,O	C
7.887	851468	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	10/C	5	Cimatti,A	
7.889	851469	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	017/P	1	Sternwarte Frankfurt	R
7.905	851470	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	018/P	1	Sternwarte Frankfurt	R
7.915	851471	0.225	1.7	0.140	9.1 x 6.1	6.00	Kodak 2415		Y		98/P	3	Koch,B	D
7.919	851472	0.050	1.8		39.6 x27.0	0.58	Ilford HP5	400/27	N	O	001/S	1	Abbott,J	S
7.924	851473	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	019/P	1	Sternwarte Frankfurt	T
7.927	851474	0.050	2.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	12/P	2	Jones,B,W	O
7.928	851475	0.300	1.5	0.203	6.9 x 4.6	10.00	Kodak 2415		Y	T	001/P	1	Berge,P,M	U
7.940	851476	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	13/P	2	Jones,B,W	P
7.942	851477	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	020/P	1	Sternwarte Frankfurt	R
7.953	851478	0.500	3.5		4.1 x 2.7	15.00	Kodak 2415		Y		13/P	4	Guthier,O	C
7.955	851479	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	14/P	2	Jones,B,W	Q
7.962	851480	0.500	3.5		4.1 x 2.7	15.00	Kodak 2415		Y		14/P	4	Guthier,O	C
7.986	851481	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	022/P	1	Sternwarte Frankfurt	V
7.988	851482	0.500	3.5		4.1 x 2.7	20.00	Kodak 2415		Y		15/P	4	Guthier,O	C
7.993	851483	0.050	2		39.6 x27.0	5.00	Kodak Tri-X		N		1/P	5	Fischer,D	W

NOTE A BG 25 filter used. Photograph made by F. Wilken and O. Guthier.

NOTE B (Observer's image identifier is preceded by prefix 2. Ed.)

NOTE C Photograph made by F. Wilken and O. Guthier.

NOTE D (Observer's image identifier preceded by prefix 100/. Ed.)

NOTE E Photograph made by J. Linder and B. Bottger.

NOTE F RG 645 red, 3 mm thick filter used.

NOTE G Instrument is Schmidt camera.

NOTE H Clear.

NOTE I Clear. Photograph made by Jack Fulmer and Glenn Robertson.

NOTE J Photograph made by Mimi Coleman, Ted Strange, Willits Sawyer, Charlie &amp; Bebe Stetson, Debbie Senft, and Chip Isenhardt.

NOTE K Blue W47 filter used.

NOTE L Orange W21 filter used.

NOTE M (Observer's image identifier is Agfa/3/19. Ed.)

NOTE N Some patchy cloud.

NOTE O Film roll Tri-X/4.

NOTE P Wratten 47A (blue) filter used. Film roll Tri-X/4.

NOTE Q Wratten 21 (orange) filter used. Film roll Tri-X/4.

NOTE R Photograph made by Y. Walter. Push processed to 2000 ISO.

NOTE S (Observer's image identifier is 20,1. Ed.)

NOTE T Photograph made by J. Popp. Push processed to 2000 ISO.

NOTE U Photograph made by G. Mahoux and P.M. Berge.

NOTE V Photograph made by P. Engel. Push processed to 2000 ISO.

NOTE W Push processed to 1000 ASA.

DATE: 8 APR 1986

DATE: 8 APR 1986

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
8.08	818402	3.5	M	4C	25	5	3.0	310	0.05	B		7				Keszthelyi,S	A
8.10	818403	3.3	S	DCS 10		3			0.080	B		15	3	C	Y	Scholten,A	
8.103	818404	4.2	M	5A		4	1.7	310	0.04	B		12	6.1		Y	Henshaw,C	B
8.111	818405				11	7			0.09	M	11	56	6.5		Y	Westlund,M	
8.115	818406	3.5	S	5A	17	7	1.1	325	0.050	B		10	3.5		Y	Vanin,G	C
8.146	818407	3.1	B	AAVSO	1.0	3	1.15	30	0.040	B		10	5.0		Y	Alves,A.A	D
8.146	818408	3.8	M	5A		5	3.0	275	0.040	B		7	6.5		Y	Westlund,M	
8.17	818409	2.3	M	IHW	28	5	3.1	320		EY		6.5			Y	Granslo,B.H	E
8.17	818410	2.6	S	DCS 10	20	7	4.5		0.080	B		15	7.5		Y	Wils,P	F
8.18	818411	2.4	M	IHW	24	7	3.5	310	0.035	B		7	6.5		Y	Granslo,B.H	
8.250	818412	3.5	B	160		4	2	285	0.05	B		10	5.0		Y	Harris,L.A	G
8.278	818413				27	6	1.0	290	0.07	B		16	5.0		Y	Taylor,M.D	H
8.302	818414		B	5A	29	8		295	0.08	B		11			Y	Gorski,L	
8.3618	818415	2.8		DCS	48	6	1.87	318		EY		5.2			Y	Machholz,D	
8.3674	818416	3.0	S	DCS	40	7	1.72	318	0.080	B		20	5.2		Y	Machholz,D	
8.396	818417	3.5	M	5A	10	4	5		0.050	B		7	5.2		Y	Robertson,T	
8.43	818418	3.0	S	5B, 141	45	5			0.023	B		3	5.6			Jones,A	
8.43	818419						1.5		0.080	B		11				Jones,A	I
8.45	818420	8.3	V	RASNZ					0.317	N	5	86				Jones,A	J
8.45	818421	3.1	SAO		30	4		280		EY		5.5		Y	2	Ashdown,M	K
8.45	818422	2.9	5A		20	5	0.5		0.030	B		8	6.5		Y	Ward,A	
8.46	818423	1.9	4C							EY		7.0		Y	4	Lovejoy,T	L
8.479	818424	3.0	S	5A	14	7			0.080	B		20		Y	1	Batza,H	M
8.51	818425	3.0	B	5B	31	5				EY		5.5		Y	5	Bortle,J.E	
8.52	818426	2.8	B	IHW BAA	35	5	1			EY						Green,D.W.E	N
8.52	818427	2.7	M	5B	23	6	6	335	0.050	B		10	5.0	Y	33	Morris,C.S	O
8.521	818428	2.0	S	5A						EY		6.2		Y	1	Seargent,D	P
8.54	818429	2.9	B	5B						EY				Y	5	Bortle,J.E	Q
8.54	818430	2.6	5B		33	6				EY		5.0		Y	33	Morris,C.S	
8.55	818431	3.0	5A		25	6		325	0.20	SC	10	77	6.5	Y	2	Ward,A	
8.576	818432	2.9	S	160,140			1	320		EY		6.1		Y	10	Foulkes,M	R
8.590	818433	1.8	S	159		5				EY		6.5		Y	2	Williams,P.F	
8.590	818434					9	3.0		0.05	B		10	6.5	Y	2	Williams,P.F	
8.62	818435	2.4	B	5A						EY		7.0		Y		Clark,M.L	
8.64	818436	2.8	S	5A	42	7	1.1		0.076	B	8	15	7.0	Y		Clark,M.L	S
8.65	818437	3.3	S	5A	37	7	2.3		0.25	N	5	38	7.0	Y		Clark,M.L	T
8.67	818438	2.1	M	5A	30	5			0.05	B		10	7	Y	14	Bouma,R.J	
8.67	818439	2.0	5A			4				EY		7		Y	14	Bouma,R.J	
8.69	818440	3.3	S	5A					0.076	B	8	15	6.9	Y		Fitzgerald,P	
8.70	818441	3.4	S	5A					0.25	N	5	38	6.9	Y		Fitzgerald,P	
8.71	818442	2.5	B	5A		5				EY		6.9		Y		Pearce,A	
8.71	818443	2.7	S	5A		7			0.030	B		8	6.9	Y		Pearce,A	
8.804	818444	4.5	B	5A	35	6	2	0	0.065	B		20	5.0	Y	1	McBain,J	
8.809	818445	2.4	5A		30	3	1	315		EY		5.5		N	1	Tregaskis,T.B	U
8.813	818446	2.5	M	5B	35	8	4.1		0.05	B		10	6.0	Y	12	Melandri,F	
8.813	818447		5A		4.5	5	3	315	0.05	B		10		Y	1	Tregaskis,T.B	V
8.819	818448	3.5	S	5A	65.0	5	6.0	307	0.08	B		30	7.0	Y	7	Campos,J	W
8.825	818449	3.0	5A		75	4	4.25	330		EY		7.0		Y	7	Campos,J	
8.854	818450	3.5	M	5A	32	8	3.55	308	0.12	C	10	40	7	Y	1	Barnabeu,M	
8.875	818451	3.3	B	5B	30	5	2	320	0.06	B		15	5.7	Y	2	Vincent,J	X
8.931	818452	3.5	M	5A	36	6	4.0	308	0.08	B		11	5.4	Y	1	Fleet,R.W	Y
8.934	818453	3.8	M	5A					0.035	B		9	5.9	Y	1	Begbie,M.J.R	
8.95	818454	2.7	S	5B						EY		6.5			17	Shanklin,J.D	
8.958	818455	3.1	5B		15	6	0.83		0.08	B		15	6.0	Y	2	Dietrich,M	Z
8.994	818456				16.0	8	4.0	325	0.30	N	8.5	102	5.9	Y	1	Begbie,M.J.R	a

NOTE A 5.5 mag. nucleus.

NOTE B Gas tail 1.7 deg. at PA 310, dust tail 1.98 deg.

NOTE C Magnitude 2.8 naked eye.

NOTE D Comet quasi-circular, slightly egg-shaped. (Translated by IHW staff. Ed.)

NOTE E PA approximate.

NOTE F PA 325 to 340.

NOTE G Tail length uncertain. I estimated the magnitude comparing the comet with Epsilon Lupus and a 4.8 mag. star of the same constellation. (Epsilon Lupus = 3.4.) (Translated by IHW staff. Ed.)

NOTE H Twilight. Antoniadi III.

NOTE I Tail PA 290-325.

NOTE J Nucleus. Diffuse coma with small, bright nucleus. Straight branch of tail 1.5 deg., curved branch suspected to 3 deg. (8.0 B 11x).

NOTE K DC in 7x50 binoculars: 7. PA = 280+.

NOTE L Naked eye tail length.

NOTE M Tail not readily apparent. (Observer gave limit as 10.0. Ed.)

NOTE N Coma diameter and tail length approximate.

NOTE O Multiple tails define the shape of the fan tail. West edge of fan was less sharply defined. Tail in PA 5 was a dust plume within the fan.

NOTE P False nucleus very bright.

NOTE Q With 7x50 binoculars: huge, condensed coma with diffuse, vague boundaries. Coma's shape fan-like and very wide (greater than 90 deg. in PA). Several long bright rays evident in fan tail. Brightest is at PA 345 and 3.3 deg. long, probable gas tail at PA 320 and 4.6 deg. long is almost as bright. Further ray at PA 30 and 1.8 deg. long is much fainter. Tail's leading and trailing edges are PA 320 and 50 respectively. Tail's edges are reasonably well defined.

NOTE R Excellent.

NOTE S Tails photo'd. to 2.9 deg. and 8.3 deg. PA of 1.1 deg. tail is 69-56. PA of 1.0 deg. tail is 34-20. Instrument is catadioptric Newtonian.

NOTE T PA of 2.3 deg. tail is 346-327.

NOTE U Clear. Dawn breaking.

NOTE V Coma diameter 4-5'. Faint, wide, tenuous tail. (Observer gave limit as approximately 10. Ed.)

NOTE W Straight tail at PA 307. Curved tail at PA 332.

NOTE X 220x35 reflector. No tail. Magn. 3.0.

NOTE Y Gas tail at PA 308. Dust tail at PA 335. Type III [sic] tail at PA 57.

NOTE Z 50' tail is dust, 1.5 deg. tail is ion. (Observer indicated "A" [Argelander?]. Ed.)

NOTE a Tail measurement refers to dust tail only.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
8.109	831065	1.6	0.090	M	11	56	5	6.5	7	Westlund,M	
8.142	831066	6	0.040	B	7	7	10	6.5	7	Westlund,M	
8.589	831067	2	0.065	B	12	12	16	6.1	10	Foulkes,M	A
8.901	831068	1.36	0.12	C	10	40	105	7	1	Barnabeu,M	B
8.931	831069	4	0.08	B	11	11	5.4		1	Fleet,R.W	C
8.971	831070	0.32	0.30	N	8.5	102,212	37	5.9	1	Begbie,M.J.R	D

DATE: 8 APR 1986

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Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
8.991	831071	3.02	0.035	B		9	11	5.9	1	Begbie, M.J.R	E

NOTE A Preceding edge of tail at PA 315, length 2.5 deg. Central tail brightening at PA 320. Following edge tail at PA 325, length 1.6 deg. Fan tail at PA 30, length 16'. Coma visible in 3 layers of brightness: 1) central bright spot/disk surrounded by 2) inner disk approximately 5', 3) outer coma about 24'. Coma DC = 7. Preceding edge of tail straight and distinct - longest section. North following edge ill-defined. Short faint fan visible at PA 30 away from main tail.

NOTE B Coma: 32 arc min. Tail 3 deg. 33 min. PA 308.

NOTE C Gas tail at PA 308. Dust tail at PA 355. Type III [sic] at PA 57. Tail features lost in Milky Way. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Type I tail centred at PA 255. Jet centred at PA 100. Vertex distance 6 arc min.; semi latus rectum P1 = 8 arc min., P2 = 10 arc min. For internal envelopes P1 = 2 arc min., P2 = 2 arc min. Jet is definitely less prominent than those observed in late March. Coma diameter is rapidly increasing at this stage.

NOTE E Type III tail at PA 70. Type II tail PA 320-330. Type I tail at PA 300. This was the first observation where a distinct type III tail was noted. The type II tail was a prominent, curved inner region of the dust tail. [sic]

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gang	Id/Typ	Site	Observer(s)	Notes
8.004	851484	0.500	3.5		4.1 x 2.7	15.00	Kodak 2415		Y		16/P	4	Guthier, O	A
8.027	851485	0.500	3.5		4.1 x 2.7	30.00	Kodak 2415		Y		17/P	4	Guthier, O	B
8.048	851486	0.500	3.5		4.1 x 2.7	11.00	Kodak 2415		Y		18/P	4	Guthier, O	A
8.049	851487	0.700	5	0.140	2.9 x 2.0	60.00	Tri-X Pro	320/	N	X	6/T	1	Travnik, N.A.S	C
8.089	851488	0.050	2.8		39.6 x 27.0	5.00	3M 1000	1000/	N	M	461/P	1	Stolzen, P	D
8.092	851489	0.035	2.8		54.4 x 37.8	5.00	Ektachrome		N	X	1/S	3	Weissferdt, F	E
8.094	851490	0.080	3.5		25.4 x 17.1	10.00	Ektachrome		N	X	2/S	3	Weissferdt, F	E
8.210	851491	0.050	2.0			3.50	Kodak Tri-X	400/	N	C	11/P		Falsarella, N	
8.219	851492	0.050	2.8		39.6 x 27.0	1.00	Polaroid 612		N	X	0/P	5	Carragan, W	F
8.302	851493	0.050	2.8		39.6 x 27.0	0.50	Polaroid 612		N	X	1/P	5	Carragan, W	F
8.342	851494	0.050	1.8		39.6 x 27.0	2.00	Kodak 2415		Y	M	017/P	2	Brutsche, E	G
8.348	851495	0.050	1.8		39.6 x 27.0	5.00	Kodak 2415		Y	M	019/P	2	Brutsche, E	G
8.361	851496	0.085	4.0		23.9 x 16.1	20.00	103a-O		N	C	8/S	1	Binnewies, S	
8.522	851497	0.508	5	0.100	4.1 x 2.7	15.00	Kodak 098		N		031/P	2	Royer, R	
8.522	851498	0.105	2.5		19.5 x 13.0	15.00	Fujichrome	1600/	N		4/S	2	Royer, R	
8.558	851499	0.050	1.7		39.6 x 27.0	6.00	3M	1000/	N	O	14/T	6	Martin, D	
8.558	851500	0.050	1.7		39.6 x 27.0	6.00	Kodak Tri-X	400/	N	O	41/P	6	Martin, D	
8.564	851501	0.050	1.7		39.6 x 27.0	8.00	3M	1000/	N	O	15/T	6	Martin, D	
8.564	851502	0.050	1.7		39.6 x 27.0	8.00	Kodak Tri-X	400/	N	O	42/C	6	Martin, D	
8.573	851503	0.050	1.7		39.6 x 27.0	10.00	3M	1000/	N	O	16/T	6	Martin, D	
8.573	851504	0.050	1.7		39.6 x 27.0	10.00	Kodak Tri-X	400/	N	O	43/C	6	Martin, D	
8.608	851505	0.750	5	0.150	2.7 x 1.8	10.00	Kodak Tri-X	400/	N	O	43/N	1	Haagh, N	
8.643	851506	0.200	3.5		10.3 x 6.9	7.00	Kodak Tri-X	400/	N	O	44/N	1	Haagh, N	
8.660	851507	0.050	1.7		39.6 x 27.0	2.00	3M	1000/	N	O	17/T	6	Martin, D	
8.664	851508	0.050	1.7		39.6 x 27.0	4.00	3M	1000/	N	O	18/T	6	Martin, D	
8.664	851509	0.050	1.7		39.6 x 27.0	8.00	Kodak Tri-X	400/	N	O	2/C	6	Martin, D	
8.689	851510	0.050	1.7		39.6 x 27.0	8.00	3M	1000/	N	O	19/T	6	Martin, D	
8.689	851511	0.050	1.7		39.6 x 27.0	8.00	Kodak Tri-X	400/	N	O	4/C	6	Martin, D	
8.697	851512	0.050	1.7		39.6 x 27.0	10.00	Kodak Tri-X	400/	N	O	5/C	6	Martin, D	
8.697	851513	0.050	1.7		39.6 x 27.0	10.00	3M	1000/	N	O	20/T	6	Martin, D	
8.706	851514	0.200	4.5		10.3 x 6.9	4.00	3M	1000/	N	O	21/T	6	Martin, D	
8.718	851515	0.050	1.7		39.6 x 27.0	6.00	Kodak Tri-X	400/	N	O	8/C	6	Martin, D	H
8.718	851516	0.200	4.5		10.3 x 6.9	6.00	3M	1000/	N	O	22/T	6	Martin, D	
8.726	851517	0.050	1.7		39.6 x 27.0	8.00	Kodak Tri-X	400/	N	O	10/C	6	Martin, D	H
8.726	851518	0.200	4.5		10.3 x 6.9	8.00	3M	1000/	N	O	23/T	6	Martin, D	
8.821	851519	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	030/P	1	Sternwarte Frankfurt	I
8.836	851520	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	11/C	5	Cimatti, A	
8.857	851521	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	12/C	5	Cimatti, A	
8.862	851522	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	032/P	1	Sternwarte Frankfurt	J
8.876	851523	0.050	1.8		39.6 x 27.0	2.00	Kodak VR	1000/	N	C	5/P	3	Vincent, F	
8.878	851524	0.225	1.7	0.140	9.1 x 6.1	10.00	Kodak 2415		Y	O	1/T	2	Furia, S	K
8.882	851525	0.609			3.4 x 2.3	20.00	Agfa 1000 RS		N	M	033/P	1	Sternwarte Frankfurt	I
8.889	851526	0.200	2		10.3 x 6.9	9.00	Kodak 2415		Y	S	17/P	2	Dragesco, J	L
8.903	851527	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	034/P	1	Sternwarte Frankfurt	M
8.913	851528	0.050	2.8		39.6 x 27.0	8.00	Agfa 1000 RS	1000/	N	T	408/S	2	Jones, B.W	N
8.965	851529	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	037/P	1	Sternwarte Frankfurt	O

NOTE A Photograph made by F. Wilken and O. Guthier.

NOTE B BG 25 filter used. Photograph made by F. Wilken and O. Guthier.

NOTE C Instrument is Zeiss Tessar. Format size 88 mm x 128 mm.

NOTE D (Observer's image identifier is preceded by prefix 2. Ed.)

NOTE E (Observer lists film as 800 ASA. Ed.)

NOTE F Film ISO 20000. Photograph made by Julie and William Carragan.

NOTE G (Observer appears to have confused C and F temperature scales for developer temperatures. Ed.)

NOTE H Blue W47 filter used.

NOTE I Photograph made by E. Neumann. Push processed to 2000 ISO.

NOTE J Photograph made by E. Templin. Push processed to 2000 ISO.

NOTE K Instrument is a Schmidt camera.

NOTE L (Observer supplied nonessential notes on original report form. Ed.)

NOTE M Photograph made by P. Engel. Push processed to 2000 ISO.

NOTE N (Observer's image identifier is Agfa/4/08. Ed.)

NOTE O Photograph made by V. Heinrich. Push processed to 2000 ISO.

DATE: 9 APR 1986

DATE: 9 APR 1986

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
9.00	818457	2.6	B	5A	30	6			0.03	B		8	6.0	Y	3	Fischer,D	A
9.000	818458	2.6	S	5B	40	7	4.8		0.08	B		20	5.0	Y	7	Parasio,R	B
9.010	818459	2.9	M	5A		6	3.5	330		EY			5.6	Y	1	Fleet,R.W	
9.053	818460	2.5	B	IHW	33.0	6	5.5		0.050	B		10	6.2	Y	3	Guthrie,O	C
9.08	818461	4.3	B	5A		5			0.050	B		7		N	4	Jannink,D.W	
9.08	818462	2.5	S	5B	25	6	5.0		0.050	B		10	7	Y	8	van Loo,F.R	D
9.083	818463	4.2	M	5A, 5B		6		290	0.04	B		12	6.1	Y	1	Henshaw,C	
9.10	818464	4.0	M	4C	15	5	3.0	320	0.05	B		7				Keszthelyi,S	E
9.110	818465	3.3	B	5B	20	4	2.7		0.063	B		9	4.0	Y	5	Kammerer,A	F
9.136	818466	2.4	B	5B	60	6	4.5	328		EY			5.5	Y	8	Linder,J	G
9.136	818467			5B		1		12		EY			5.5	Y	8	Linder,J	H
9.17	818468	2.6	S	DCS 10	20	6	4.5		0.080	B		15	7	Y	3	Wills,P	
9.194	818469	2.4	B	5A	36	6	9.7	20		EY			5.5	Y	7	Bottger,B	I
9.388	818470			B	28	6		271	0.08	B		11		Y	5	Goraki,L	
9.396	818471	3.2	M	5B	10	5	3		0.050	B		7	6.1	Y	3	Robertson,T	
9.403	818472				13	5			0.15	N	8	68	6.1	Y	3	Robertson,T	J
9.4090	818473	2.8		DCS	18	5	2.33	358		EY			6.0		6	Machholz,D	K
9.4104	818474	2.8	S	DCS	19	6	1.70	26	0.080	B		20	6.0		6	Machholz,D	L
9.42	818475	3.2	B	AA	11	0			0.05	B		10		Y	1	Campbell,R.W	M
9.479	818476	3.0	S	5B	14	7			0.080	B		20		Y	1	Batza,H	N
9.48	818477	2.7		5B		5	4	315		EY			6.5	Y	34	Morris,C.S	O
9.50	818478	3.3	B	5A		4			0.050	B		7	4.6C	Y	1	Matchett,V	
9.51	818479	2.7	B	IHW BAA	35	5	5			EY						Green,D.W.E	P
9.52	818480	2.8	B	5B	42					EY			6.5	Y	5	Bortle,J.E	
9.52	818481				20	5	2.5	323	0.050	B		7	6.5	Y	6	Bortle,J.E	Q
9.53	818482	3.0		5A	25	5		315	0.20	SC	10	77	6.5	Y	2	Ward,A	
9.531	818483	2.0	S	5A						EY			6.2	Y	1	Seargent,D	
9.531	818484				30	7	3	330	0.08	B		15				Seargent,D	R
9.54	818485	1.9		4C						EY			6.5	Y	4	Lovejoy,T	
9.54	818486	1.9		4C						EY			6.5	Y	1	Lovejoy,T	
9.542	818487	2.4		5A	30	3	1	315		EY				Y	1	Tregaskis,T.B	S
9.545	818488			5A	45	5	3	315	0.05	B		10		Y	1	Tregaskis,T.B	T
9.55	818489	2.1	M	5B	26	5	4	313	0.05	B		10	7	Y	14	Bouma,R.J	U
9.55	818490	1.9		5B	32					EY			7	Y	14	Bouma,R.J	V
9.587	818491	3.2	S	5B	20		1.3	310	0.05	B		7	5.4	N	1	Bryant,K	W
9.59	818492	2.0	B	5A			2	335		EY			6	Y	37	Hale,A	X
9.59	818493						2	335	0.05	B		10	6	Y	37	Hale,A	X
9.62	818494	2.5	B	5B						EY			7.0	Y		Clark,M.L	
9.63	818495	3.4	S	5B	38	7	2.4		0.25	N	5	38	7.0	Y		Clark,M.L	Y
9.63	818496	3.1		5A	20	5	0.5	315	0.030	B		8	6.5	Y	2	Ward,A	
9.71	818497	2.5	B	5B	33	5	1.8	326		EY			6.9	Y		Pearce,A	
9.71	818498	2.7	S	5B	20	7	1.5	326	0.030	B		8	6.9	Y		Pearce,A	
9.774	818499	2.8	S	5B	35	5	1.2	320	0.07	B		20	5.0	Y	3	Cannurri,L	Z
9.823	818500	3.3	S	5A	78	5	6.10	314	0.08	B		30	7.0	Y	7	Campos,J	a
9.830	818501	3.0		5A	90	4	4.50	350		EY			7.0	Y	7	Campos,J	
9.833	818502	3.3		5B	22	6	2		0.05	B		7	6.0	Y	2	Dietrich,M	b
9.833	818503	3.3	B	5B	50	2		320	0.06	B		15	5.9	Y	2	Vincent,J	c
9.860	818504	2.6	S	143,160	54		1.5	325		EY			6.6	Y	7	Haver,R	
9.861	818505	3.0	B	IHW						EY			6.2	Y	3	Guthrie,O	
9.870	818506	3.4	M	5B	24.9	7	2.25	322	0.12	C	10	40	5.0	Y	6	Cifuentes,E	
9.870	818507	2.5	S	143,160	45	3	1.87	325	0.05	B		7	6.6	Y	7	Haver,R	d
9.88	818508	3.2	S	5B						EY			6.0		18	Shanklin,J.D	e
9.896	818509	3.0	M	5B	30	7	3.0		0.05	B		10	5.5	Y	12	Nelandri,F	f
9.913	818510	3.3	B	5B		8				EY			6.1	Y	2	Abbott,J	g
9.920	818511	3.5	B	5B	22	8	0.9	318	0.050	B		10	6.1	Y	2	Abbott,J	h
9.935	818512	3.6	M	5A					0.035	B		9	5.8	Y	1	Begbie,M.J.R	
9.944	818513	3.0	M	5B		6	1.5	349		EY			5.5	Y	1	Fleet,R.W	
9.948	818514	3.3	M	5B	29	5	4.3	315	0.08	B		11	5.5	Y	1	Fleet,R.W	i
9.965	818515				17.3	7	3.0	328	0.30	N	8.5	102	5.8	Y	1	Begbie,M.J.R	j

NOTE A Tail length = 3-4 deg. Broad fan (approx. 50 deg.)

NOTE B Tail PA 0, 310, 328.

NOTE C Tail I.

NOTE D Binocular limit is 6.

NOTE E 6 mag. nucleus.

NOTE F Comet only 4 deg. above horizon. Broad tail, brightest 330 deg. but spans to 30 deg. Extinction differences stars - comet already taken into account.

NOTE G Type I tail. Coma diameter approximate.

NOTE H Type II tail. Tail length is lower limit.

NOTE I 9.7 deg. tail length uncertain. PA for 10 deg. dist.

NOTE J Filar micrometer used for coma diameter. Central condensation dia. using filar micrometer was 1.1'.

NOTE K Fan shaped tail: PA 337 to 18.

NOTE L Fan-shaped tail: PA 337 to 75.

NOTE M Briefly clear.

NOTE N Tail not readily apparent. (Observer gave limit as 10.5. Ed.)

NOTE O Multiple tails define the shape of the fan tail.

NOTE P Coma diameter and tail length approximate.

NOTE Q With 7x50 B: huge, well condensed, roughly circular coma. Wide, bright tail extends north, centered on PA 323 deg. and 2.5 deg. in length. To its east is a great, broad glow; the full width of the tail being 100 deg.! Tail's leading and following edges as PA 310 deg. and 50 deg. respectively.

NOTE R Coma diameter and PA 330 tail length approximate.

NOTE S Faint, wide, tenuous tail. Tail PA approximate.

NOTE T Faint, wide, tenuous tail. (Observer gave limit as approximately 10. Ed.)

NOTE U Gas tail at PA 313. Broad dust fan includes other tail listings. Coma diameter approximate.

NOTE V Coma diameter approximate.

NOTE W DC = strong.

NOTE X The magnitude was measured several times throughout the night, with the brightness remaining constant. In 10x50 binoculars the two tails appeared at nearly right angles to each other, some material between them was observed in the 20 cm reflector.

NOTE Y PA of 2.4 deg. tail is 21-340.

NOTE Z Difficulty in defocusing the comparison stars to the great size of the coma.

NOTE a Straight tail at PA 314. Curved tail at PA 350.

NOTE b 2 deg. tail is dust, 3 deg. tail is ion. (Observer indicated "A" method (Argelander?). Ed.)

NOTE c Central condensation very bright.

NOTE d Center tail. See drawing. (Observer repeats note for each tail listed on original report form. Ed.)

NOTE e Cloud.

NOTE f Tail is open like a fan with an angle of about 90 deg. Tail length is for ion tail.

NOTE g Comparison stars (3.2, 4.0), (3.1, 4.0). Milky Way background.

NOTE h Comparison stars (3.2, 4.0), (3.1, 3.4). Coma too large to adequately defocus stars except by using one half of binoculars (the right). Milky Way background. Type I tail 0.9 deg. at PA 318. Type II tail 1.7 deg. long, PA 329 at 1 deg. distance; PA measured at middle of tail. Type III [sic] tail 0.3 deg. long, PA 59 at 0.5 deg. distance, distinct leading edge measured.

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NOTE i Gas tail at PA 315. Midpoint on dust tail: 1.5 deg. at PA 345. End point of dust tail: 3.6 deg. at PA 350. Type III [sic] tail at PA 67.

NOTE j Tail measurement refers to dust tail only.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
9.111	831072		0.125	R	6	44			4	Guthier,O	A
9.167	831073	0.25	0.20	N	8	120	28	6	1	Vargas B.,A.G	B
9.181	831074		0.216	N	7.6	65,135,230	40	6.3	5	Rogers,J.H	C
9.328	831075	0.54	0.15	N	4	68	45	5.5	7	Levy,D.H	D
9.863	831076	1.58	0.12	C	10	40	65	5.0	6	Cifuentes,E	E
9.878	831077	3	0.050	B		7	10	6.6	7	Haver,R	F
9.880	831078	1.0	0.050	B		10	14	6.1	2	Abbott,J	G
9.948	831079	4	0.08	B		11		5.5	1	Fleet,R.W	H

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Tail at PA 295 approx. A very diffuse coma expands around nuclear condensation. The tail is very diffuse. DC 5; coma diameter 12' approx.

NOTE C Nucleus bright, but not as outstanding as on April 6+7. Still mostly unresolved. Coma about 15' across. Broad diffuse enhancement of inner coma to PA approximately 60; not a real jet tonight.

NOTE D Scale is approximate.

NOTE E Tail 2 deg. 15', PA 322.

NOTE F Tail centers at PA 325, 345, and 65. (Drawing shows three tail branches. Ed.)

NOTE G 'Nuclear' object stellar, reddish and approximately 5 mag. Central condensation approximately 4'. Bright tail spine at PA 320 deg., approximately 16x4 arc min. Type I tail at PA 318 deg., approximately 52x8 arc min. Type II tail 12 arc min. from central condensation at PA 326 deg., width 16 arc min. (root), 60 arc min. from central condensation at PA 329 deg., width 36 arc min. (separation from type I), 98 arc min. from central condensation at PA 336 deg., width 44 arc min. (@ end). Type III tail 28 arc min. from central condensation at PA 59 deg., width 18 arc min., 32 arc min. from central condensation at PA 46 deg., width 22 arc min., 28 arc min. from central condensation at PA 33 deg., width 14 arc min., 40 arc min. from central condensation at PA 20 deg., width 16 arc min. There was Milky Way interference. The head of the comet appeared against a dark sky but the dust tail was involved with a fainter part of the Milky Way to the N. The type II, III [sic] PA's were measured at mid tail at stated distances from the central condensation (c.c.). Semi latus rectums (both), 11 arc min. Vertex distance, 10 arc min. All PA's and dimensions derived from AAVSO chart plot. A stellar object of about +5 m. was seen at the centre of the central condensation (c.c.). Reddish in colour. Not corresponding to any field star on the AAVSO charts. The c.c. was observed to be rather pearly - not quite planetary, and set virtually central in circular coma of diameter 22'. There was a bright tail spine but only marginally brighter than the surrounding material. There was 52 arc min. type I tail which was rather indistinct from the broad, curving main tail body. The type II tail was quite straight, bright relative to the coma and well defined at the edges for the first 30' or so, appearing to split into two segments at 1 deg. from the c.c. Some 1.5 deg. of type II tail visible in total before merger with the Milky Way. The distinct type III tail [sic] had the leading edge set at some 101 deg. to the type I tail. Comparable in brightness to the last third of the type II tail and thus much fainter than the coma. A sharply defined leading edge to the type III tail with a broad brush of material to the east of the type II tail and typically 20' in width. Some stratus cloud, not interfering.

NOTE H Gas tail at PA 315. Dust tail end point at PA 350. Type III [sic] at PA 67. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Typ	Gdng	Id/Typ	Site	Observer(s)	Notes
9.006	851530	0.050	1.8		39.6 x27.0	16.00	Ilford HP5	400/27	N	O	010/S	2	Abbott,J	A
9.016	851531	0.225	1.7	0.139	9.1 x 6.1	15.00	Kodak 2415		Y	O	15/P	2	Martinez,P	B
9.020	851532	0.500	3.5		4.1 x 2.7	15.00	Kodak 2415		Y	O	19/P	4	Guthier,O	C
9.021	851533	0.110	2		18.6 x12.5	30.00	Fujichrome	400/	N	O	3/P	2	Martinez,P	D
9.051	851534	0.500	3.5		4.1 x 2.7	44.00	Kodak 2415		Y	O	20/P	4	Guthier,O	E
9.087	851535	0.500	3.5		4.1 x 2.7	21.00	Kodak 2415		Y	O	21/P	4	Guthier,O	C
9.138	851536	0.050	1.7		39.6 x27.0	10.00	Kodak 2415		Y	O	62/P	8	Bottger,B	F
9.140	851537	0.500	3.5		4.1 x 2.7	15.00	Kodak 2415		Y	O	22/P	4	Guthier,O	C
9.174	851538	0.085	2.4		23.9 x16.1	20.00	Ektachr.P800	800/	N	O	52/P	8	Bottger,B	G
9.174	851539	0.200	2.8		10.3 x 6.9	19.50	Kodak 2415		Y	O	72/P	8	Bottger,B	G
9.189	851540	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	2/C	3	Tarnutzer,A	H
9.194	851541	0.050	4		39.6 x27.0	20.00	Kodak 2415		Y	T	2/N	1	Pedersen,V.T	I
9.202	851542	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	3/C	3	Tarnutzer,A	H
9.206	851543	0.050	2.0			3.50	Kodak Tri-X	400/	N	C	12/P		Falsarella,N	
9.213	851544	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	4/C	3	Tarnutzer,A	H
9.215	851545	0.050	4		39.6 x27.0	10.00	Kodak 2415		Y	T	3/N	1	Pedersen,V.T	I
9.232	851546	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	5/C	3	Tarnutzer,A	H
9.353	851547	0.058	1.4		34.5 x23.4	0.67	Kodak VR1000	1000/	N	T	7/C	4	Priester,D.C	
9.354	851548	0.050			39.6 x27.0	0.33	Kodak VR1000	1000/	N	T	8/C	4	Priester,D.C	
9.356	851549	0.050			39.6 x27.0	0.17	Kodak VR1000	1000/	N	T	9/C	4	Priester,D.C	
9.358	851550	0.085	4.0		23.9 x16.1	30.00	103a-o		N	C	9/S	1	Binnewies,S	
9.360	851551	0.058	1.4		34.5 x23.4	0.50	Kodak Tri-X		N	T	6/C	4	Priester,D.C	J
9.361	851552	0.058	1.4		34.5 x23.4	0.25	Kodak Tri-X		N	T	7/C	4	Priester,D.C	J
9.423	851553	0.050	2.8		39.6 x27.0	5.00	3M 1000	1000/	N	O	27/N	10	Edborg,S.J	
9.428	851554	0.050	2.8		39.6 x27.0	10.00	3M 1000	1000/	N	O	28/N	10	Edborg,S.J	
9.432	851555	0.050	2.8		39.6 x27.0	1.00	3M 1000	1000/	N	O	29/N	10	Edborg,S.J	
9.462	851556	0.300	4.5		6.9 x 4.6	15.00	Kodak Tri-X		N	X	119/P	3	Ward,A	X
9.485	851557	2.000	20	0.203	1.0 x 0.7	2.00	Kodak VR1000	1000/	N		37/N	1	Persell,D	
9.491	851558	0.200	4		10.3 x 6.9	10.00	3M 1000	1000/	N	O	32/N	10	Edborg,S.J	
9.495	851559	0.200	4		10.3 x 6.9	2.50	3M 1000	1000/	N	O	33/N	10	Edborg,S.J	
9.502	851560	0.105	2.5		19.5 x13.0	5.00	Fujichrome	1600/	N	O	5/S		Royer,R	L
9.563	851561	0.750	5	0.150	2.7 x 1.8	7.00	3M 1000	1000/	N	O	5/S	1	Haagh,N	
9.571	851562	0.200	3.5		10.3 x 6.9	6.00	3M 1000	1000/	N	O	7/S	1	Haagh,N	
9.578	851563	0.200	3.5		10.3 x 6.9	12.00	3M 1000	1000/	N	O	8/S	1	Haagh,N	
9.677	851564	0.200			10.3 x 6.9	30.00	Kodak	1600/	N		000/P	2	Ru-Hu,C	
9.840	851565	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	046/P	1	Sternwarte Frankfurt	M
9.854	851566	0.225	1.7	0.140	9.1 x 6.1	10.00	Kodak 2415		Y	O	001/T	2	Battaini,P	
9.861	851567	0.225	1.7	0.140	9.1 x 6.1	6.00	Kodak 2415		Y		101/P	3	Koch,B	N
9.861	851568	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	047/P	1	Sternwarte Frankfurt	M
9.862	851569	0.050	2.8		39.6 x27.0	8.00	Agfa 1000 RS	1000/	N	T	419/S	2	Jones,B.W	O
9.872	851570	0.225	1.7	0.140	9.1 x 6.1	6.00	Kodak 2415		Y		102/P	3	Koch,B	N
9.880	851571	0.050	2.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	6/P	2	Jones,B.W	P
9.882	851572	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	048/P	1	Sternwarte Frankfurt	Q
9.903	851573	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	049/P	1	Sternwarte Frankfurt	Q
9.918	851574	0.050	2.8		39.6 x27.0	5.00	Ektachrome	400/	N	M	475/P	1	Stolzen,P	R
9.924	851575	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	050/P	1	Sternwarte Frankfurt	M
9.932	851576	0.050	2.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	11/P	2	Jones,B.W	P
9.944	851577	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	051/P	1	Sternwarte Frankfurt	Q
9.964	851578	0.200	3.5		10.3 x 6.9	15.00	3M 1000	1000/	N	X	5/P	12	Meladri,F	
9.988	851579	0.225	1.7	0.140	9.1 x 6.1	6.00	Kodak 2415		Y		107/P	3	Koch,B	N

NOTE A (Observer's image identifier is 20, 10. Ed.)

NOTE B Instrument is Schmidt camera.

NOTE C Photograph made by F. Wilken and O. Guthier.

NOTE D Hasselblad camera used. (Probably large format, 120 size. Ed.)

NOTE E BG 25 filter used. Photograph made by F. Wilken and O. Guthier.

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NOTE F Photograph made by J. Linder and B. Bottger. Forming gas pressurized to 1.2 bar.  
 NOTE G Photograph made by J. Linder and B. Bottger.  
 NOTE H Problems with dew formation on objective.  
 NOTE I Wratten 21 filter used.  
 NOTE J Push processed to 800 ASA.  
 NOTE K (Observer's image identifier is 11/9. Ed.) UV filter used.  
 NOTE L Start time uncertain.  
 NOTE M Photograph made by E. Neumann. Push processed to 2000 ISO.  
 NOTE N (Observer's image identifier preceded by prefix 100/. Ed.)  
 NOTE O (Observer's image identifier is Agfa/4/19. Ed.)  
 NOTE P Film roll Tri-X/5.  
 NOTE Q Photograph made by N. Diehl. Push processed to 2000 ISO.  
 NOTE R (Observer's image identifier is preceded by prefix 2. Ed.)

SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
9.256	870135	600G-O	CL	0.135	1.9		6.00	Kodak 2415		Y	C	404/S	5	Buchanan, W.T	AB
9.348	870136	600G-O	CL	0.135	1.9		30.00	Kodak 2415		Y	C	410/S	5	Buchanan, W.T	BC
9.415	870137	600G-O	CL	0.050	1.4		5.00	3M 1000	1000/31	N	O	26/N	10	Edberg, S.J	

NOTE A (Observer's image identifier is E-124-04. Ed.)  
 NOTE B Comet Halley visible to naked eye.  
 NOTE C (Observer's image identifier is E-124-10. Ed.)

DATE: 10 APR 1986

DATE: 10 APR 1986

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	
10.021	818516	3.1	B	IHW	45.0	5	4.5		0.050	B		10	6.2	Y	3	Guthier,O	A	
10.028	818517	2.8	B	SB	29	5	3	315		EY			6.5	Y	3	Hasubick,W	B	
10.035	818518	2.8	B	SB	29	5	10	315	0.03	B		8	6.5	Y	3	Hasubick,W	B	
10.050	818519	3.5	B	SB	22	4	2	345	0.063	B		9	4.0	Y	5	Kammerer,A	C	
10.066	818520	3.8	M	SB	22	5	3.0	307	0.04	B		8	5.2	Y	3	Taylor,M.D	D	
10.076	818521	3.2	S	SB	17	5	1.5	335	0.050	B		10	3.5	Y	10	Vanin,G		
10.078	818522	4.4	M	SB	22	4	0.85	315	0.04	B		12	6.1	Y	1	Henshaw,C		
10.100	818523	2.6	B	5A, 5B	30	7			0.03	B		8	6.0	Y	3	Fischer,D	E	
10.10	818524	3.4	B	5A		4			0.050	B		7		Y	4	Jannink,D.W	F	
10.111	818525	3.2	B	SB			1.0			EY			6.3	Y	6	Rogers,J.H	G	
10.111	818526	4.1	B	SB	22	5	3.9		0.06	R	8	15	5.5	Y	3	Schambeck,C.M	H	
10.118	818527	2.1	B	SB	30	7	3.9	315		EY			6.0	Y	7	Bottger,B		
10.12	818528	2.4	S	SB	30	6			0.050	B		10	7	Y	8	van Loo,F.R		
10.125	818529	2.6	S	SB	43	7	4.9		0.08	B		20	5.5	Y	7	Parisio,R		
10.15	818530				22	6	0.8	53	0.035	B		7	5.0	Y	5	Granslo,B.H		
10.17	818531	2.4	S	DCS 10	25	6	3.5		0.080	B		15	7.5	Y	3	Wils,P	I	
10.188	818532			5B		6	2.5	315	0.050	B		10	6.3	Y	6	Rogers,J.H	J	
10.200	818533		B			8			0.063	B		9	6.0	Y	3	Fischer,D	K	
10.206	818534	2.4	B	SB	68	6	1.9	345		EY			6.0	Y	8	Linder,J	L	
10.208	818535						1.5			EY			6.0			Martinez,C		
10.249	818536	3.4	B	160	17	4		308	0.05	B		20	5.0	Y	1	da Silva,L.A.L	M	
10.25	818537		B				5		0.04	B		7				Kiselev,N		
10.260	818538	4.3	B	SB	5.3	3			0.05	B		7	3.4C	N	2	Dodd,M.J	N	
10.317	818539		B		31	8		313	0.08	B		11		Y	5	Gorskil,L		
10.385	818540	4.4	S	SB	36	7	1	10	0.05	B		10	4.5C	Y	1	Gronck,J.D	O	
10.400	818541	3.4	M	SB	15	4	4		0.050	B		7	5.6	Y	3	Robertson,T		
10.42	818542	2.8	B	IHW BAA						EY						Green,D.W.E		
10.46	818543	1.8		4C		7	8			EY			7.0	Y	4	Lovejoy,T	P	
10.464	818544	3.7	B	160		3			0.050	B		20	5.2	Y	1	Castrillon,M.E		
10.4653	818545	3.0		DCS	40	4	1.42	2		EY			5.9		6	Machholz,D	Q	
10.4688	818546	2.8	S	DCS	48	5	2.42	16	0.080	B		20	5.9		6	Machholz,D	R	
10.49	818547	2.9		SAO	30		4	270		EY			5.5	Y	2	Ashdown,M	S	
10.51	818548	2.3	M	SB	45	5				EY			5.5	Y	5	Keen,R	T	
10.55	818549	3.3	S	SB, 141	50	5			0.023	B		3	5.6			Jones,A		
10.55	818550					2			0.078	R	7.5	30				Jones,A	U	
10.55	818551	3.4	B	SB		2			0.050	B		7		C	Y	1	Matchett,V	
10.563	818552	2.0	S	5A						EY						Seargent,D	V	
10.563	818553								0.08	B		15				Seargent,D	W	
10.569	818554	3.0	S	160,140		1	340			EY			5.6	Y	11	Foulkes,M		
10.57	818555	2.2		5B	32	3				EY			7	Y	14	Bouma,R.J		
10.57	818556	2.3	S	SB		4			0.018	B		2	7	Y	14	Bouma,R.J		
10.57	818557	2.9	V	SB, 141												Jones,A	X	
10.57	818558					8			0.317	N	5	86				Jones,A	Y	
10.57	818559	2.7		5B	25	5				EY			6.0	Y	35	Morris,C.S		
10.58	818560				26	4	5	325	0.05	B		10	7	Y	14	Bouma,R.J	Z	
10.75	818561	3.0		5B	25	6			0.20	SC	10	77	6.5	Y	2	Ward,A		
10.76	818562				28	4	4.5	320	0.05	B		10	7	Y	14	Bouma,R.J	a	
10.76	818563	2.5	B	5B						EY			7.0	Y		Clark,M.L		
10.76	818564	3.4	M	5B			4.0		0.05	B		7	5.0	Y	3	Suzuki,K	b	
10.78	818565	2.3	S	5B					0.018	B		2	7	Y	14	Bouma,R.J		
10.78	818566	3.4	S	5B	42	7	2.6		0.25	N	5	38	7.0	Y		Clark,M.L	c	
10.78	818567	2.5	B	5B	44	5	1.9	42		EY			6.9	Y		Pearce,A		
10.78	818568	2.8	S	5B	22	7			0.030	B		8	6.9	Y		Pearce,A		
10.80	818569	3.8	M	SAO	28	5		325	0.065	R	8	16	5.5	Y	9	Nakamura,A	d	
10.820	818570	3.4	S	5B	60	5	7.40	328	0.08	B		30	7.0	Y	7	Campos,J	e	
10.826	818571	2.8		5B	120	4	4.00	340		EY			7.0	Y	7	Campos,J	f	
10.833	818572	4.0	B	5B	50	5	2.5	340	0.06	B		15	5.6	Y	2	Vincent,J	g	
10.896	818573	3.4		5B	25	6	2		0.063	B		8	6.0	Y	2	Dietrich,M	h	
10.904	818574	3.7	M	5A					0.035	B		9	5.8	Y	1	Begbie,M.J.R		
10.906	818575	3.3	M	5B	28	7	1.2	351	0.12	C	10	40	6	Y	1	Bernabeu,M		
10.906	818576	3.9	M	5B	30	5	6.3	325	0.08	B		11	5.4	Y	1	Fleet,R.W	i	
10.91	818577	2.6	B	5B						EY			6.3		19	Shanklin,J.D		
10.910	818578	3.1	M	5B		4	2.9	338		EY			5.4	Y	1	Fleet,R.W	j	
10.913	818579	3.2	M	5B	19.0	7	0.92	347	0.12	C	10	40	4.5	Y	6	Cifuentes,E		
10.940	818580	4.5	M	5B	22	4	1.13	330	0.04	B		12	6.1	Y	1	Henshaw,C		
10.948	818581				20.6	5	4.5	315	0.30	N	8.5	102	5.8	Y	1	Begbie,M.J.R	k	

NOTE A Tail I.

NOTE B Tail I - plasma.

NOTE C Altitude 4 deg.!! Tail only quite narrow, length and PA approximate. Extinction differences stars - comet already taken into account.

NOTE D 5 arc min. broad dust tail - curving. 5 arc min. diameter central condensation. Second tail PA 300 to 337.

NOTE E Even broader fan. Tail length = 2.5-4 deg.

NOTE F Binocular limit is 9.

NOTE G Tail really shorter than last night (fan); length approximate.

NOTE H 3.9 deg. tail PA 313 to 353; ion tail, curved. 3.2 deg. tail PA: eastern border of dust tail.

NOTE I PA 340 to 350.

NOTE J 2.5 deg. tail is gas (straight ray). 1.0 deg. tail is f. side of dust (90-100 deg. fan!).

NOTE K 100 deg. fan. Plasma &amp; dust seen. Tail length = 2.5-7 deg.

NOTE L Type I tail.

NOTE M Clouds.

NOTE N Severe interference by city lights. No tail seen.

NOTE O Beg. period heavier light poll. Good see.

NOTE P Very bright. Coma diameter through 15x80 binoculars: 40'. Naked eye tail length.

NOTE Q Fan-shaped tail: PA 342 to 32.

NOTE R Fan-shaped tail: PA 327 to 64.

NOTE S DC in 7x50 binoculars: 8. PA = 270+.

NOTE T Observation from Fiji.

NOTE U Tail PA 330-352.

NOTE V Very broad fan between position angles 320 and 55.

NOTE W Cloud terminated observation.

NOTE X Bifocal spectacles - viewed stars through distance section and comet out of focus in close-up section.

NOTE Y Large diffuse coma small bright condensation, diameter about 1 arc min. Nucleus hidden?

NOTE Z Gas tail at PA 325. Broad dust fan includes other tail listings. PA 340 is approximate.

NOTE a Gas tail at PA 320. Broad dust fan includes other tail listings. PA 340 is approximate.

NOTE b Guam tour.

NOTE c PA of 2.6 tail is 41-9.

NOTE d Tail length = yes.

NOTE e Straight tail at PA 328. Curved tail at PA 355. Occasional lightning from a thunderstorm below our aircraft.

NOTE f Some lightning interference. Occasional lightning from a thunderstorm below our aircraft.

NOTE g Comp. stars Mu Lup 4.3, Pi Lup 3.9.

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NOTE h 2 deg. tail is dust, 2.6 deg. tail is ion. (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE i Gas tail at PA 325. Midpoint of dust tail: 1.0 deg. at PA 351. End point of dust tail: 4.3 deg. at PA 356. Type III [sic] tail at PA 68.  
 NOTE j Gas tail at PA 338. Dust tail at PA 19.  
 NOTE k Tail measurement refers to dust tail only.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
10.069	831080		0.125	R	6	44			4	Guthier,O	A
10.139	831081	0.02	0.216	N	7.6	65,230	20	6.3	6	Rogers,J.H	B
10.143	831082		0.07	B	16		229	5.4	3	Taylor,M.D	C
10.149	831083	2.5	0.050	B		10	110	6.3	6	Rogers,J.H	D
10.196	831084	0.25	0.20	N	8	120	55	5	1	Vargas B.,A.G	E
10.576	831085	2	0.065	B		12	10	5.6	11	Foulkes,M	F
10.795	831086		0.076	N	7.9	60			1	Freydank,E	G
10.868	831087	1.36	0.12	C	10	40	179	7	1	Bernabeu,M	H
10.906	831088	4	0.08	B		11		5.4	1	Fleet,R.W	I
10.917	831089	0.78	0.12	C	10	40	60	4.5	6	Cifuentes,E	J
10.931	831090	2.0	0.050	B		10	10	6.0	2	Abbott,J	K

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE B Gas tail (newly distinct) at PA 330 deg., length 54'. Dust tail at PA about 330 deg. to 15 deg., length about 27'. Coma (bigger than before) diameter 27'. Nucleus (now little if any unresolved light - whole nucleus extended) about 6" diameter. Fan (as last night) at PA about 120 deg., length about 14". Jet (new - towards tail) at PA 330 deg., length about 9".  
 NOTE C At 10.188 UT dust tail 5' broad, curving from PA 325 deg. Under moments of excellent seeing fountains/jets seen with extended fanned gas tail looking striated, and 5' broad (spike) curving dust tail. Northwest side of comet appears more intense. Central condensation offset in roughly circular coma and about 5' diameter. Fountains and jets visible. With naked eye at 10.188 UT extent of tail fan is between PA 275 deg. to 337 deg. (Second drawing supplied for 10.188 UT at scale of 3"/mm. Ed.)  
 NOTE D Changed considerably since last night. Still a broad fan appeared - even broader, up to 90-100 deg. wide, as I got even better dark-adapted - but fan is fainter and shorter, while it has developed a distinct, long straight ray on south preceding side. The gas tail is radial to nucleus not tangential to coma. Gas tail seemed to dominate in blue filter, dust fan in yellow filter, but too faint to be certain. (Two drawings were made in observation interval, no. 1 from 0240-0255 and no. 2 at 0430. Ed.) The gas tail for (1) was 2.0 deg. at PA 315 and for (2) was 2.5 deg. at PA 315. The following edge of the dust fan for (1) was about 1.0 deg. at PA about 15 and for (2) was about 1.0 deg. at PA about 50. For no. 2, the coma was still slightly flattened transverse the line of the (gas) tail.  
 NOTE E Tail? at PA 95. A very interesting effect was produced by lightning from a far thunderstorm. The comet image appears with a stroboscopic effect. A coma prolongation (like a tail) was observed some times, PA 95 approx.!). The tail is more diffuse than before. DC 4; coma diameter: 12' approx.  
 NOTE F Preceding edge of tail at PA 340, length 1.5 deg. Following edge of tail at PA 350. Fan tail at PA 30, length 20'. Coma 40' across, DC 7. Bright central disk in coma. Faint tail visible at PA 30. Cluster north preceding.  
 NOTE G DC 7. Very clear dark night. Haze at (the) horizon. (Duration not indicated. Time of observation is assumed to be start time. Translated by IEN staff. Ed.)  
 NOTE H Coma 28 arc min. Tail 1 deg. 12 min. PA 351.  
 NOTE I Gas tail at PA 325. Dust tail end point at PA 356. Type III [sic] at PA 68. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE J Tail 55', PA 347.  
 NOTE K Central condensation approximately 5 arc min. Type I tail at PA 327 (mid tail), approximately 4 deg. 16'x12'; type II tail at 64 arc min. PA between 336 and 16, approximate width 56 arc min.; at 2 deg. PA between 348 and 20 approximate width 84 arc min.; at 3 deg. 10 min. PA between 353 and 25, approximate width 2 deg. 16 min. Type III tail [sic] at 1 deg. 4 min. PA 65 (leading edge), approximate width 54 arc min.; at 2 deg. 4 min. PA 21 (joins type II). Milky Way interference: now weak. Type II, III PA's measured at tail edges at defined distance from central condensation, i.e., (@ 64'). Tail width measured perpendicular to PA's. Semi latus rectums (both) 13 arc min. Vertex distance 13 arc min. All dimensions and PA's measured from MAVSO chart plot. The central condensation (c.c.) sat quite centrally in a circular coma of diameter 26'. The c.c. appeared pearly - not planetary. There was a long (4 deg. 16 arc min.) type I tail, quite straight but pale and narrow. Low fall-off of brightness away from the coma, and for much of the length, of comparable brightness with the type III [sic] tail wedge. The type II tail: quickly broadening and curving after the split from the western-most half being brighter than the eastern for the same distance out from the c.c. The type III tail, formed a right-angled wedge much fainter than the greater part of the type II tail. The leading edge of the type III tail was observed to be sharp and of itself brighter than the wedge, appearing as a thin 'spike'. The total angle subtended by the three tails amounted to 98 deg.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gang	Id/Typ	Site	Observer(s)	Notes
10.009	851580	0.200	2		10.3 x 6.9	15.00	Kodak 2415		Y	S	18/P	2	Dragesco,J	A
10.017	851581	0.225	1.7	0.140	9.1 x 6.1	10.00	Kodak 2415		Y		109/P	3	Koch,B	B
10.024	851582	0.135	2.8		15.2 x10.2	8.00	Kodak Tri-X		N		2/P	5	Fischer,D	C
10.109	851583	0.050	1.7		39.6 x27.0	5.00	Kodak 2415		Y		67/P	8	Bottger,B	D
10.116	851584	0.225	1.7	0.140	9.1 x 6.1	40.00	Kodak 2415		Y		113/P	3	Koch,B	B
10.120	851585	0.085	2.0		23.9 x16.1	10.00	Ektachr.P800	800/	N	O	53/P	8	Bottger,B	E
10.130	851586	0.180	2.8			15.00	Kodak Tri-X		N		00/P	5	van Loo,F.R	F
10.131	851587	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	7/C	3	Tarnutzer,A	
10.137	851588	0.500	3.5		4.1 x 2.7	20.00	Kodak 2415		Y	X	23/P	4	Guthier,O	G
10.139	851589	0.085	2.0		23.9 x16.1	6.00	Ektachr.P800	800/	N	O	54/P	8	Bottger,B	E
10.149	851590	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	8/C	3	Tarnutzer,A	
10.153	851591	0.500	3.5		4.1 x 2.7	15.00	Kodak 2415		Y	X	24/P	4	Guthier,O	G
10.159	851592	0.058	2		34.5 x23.4	12.00	Kodak 2415		Y	X	9/C	3	Tarnutzer,A	
10.173	851593	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	10/C	3	Tarnutzer,A	
10.189	851594	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	11/C	3	Tarnutzer,A	
10.196	851595	0.050	2.0			3.50	Kodak Tri-X	400/	N	C	2/P		Falsarella,N	
10.200	851596	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	12/C	3	Tarnutzer,A	
10.215	851597	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	13/C	3	Tarnutzer,A	
10.216	851598	0.050	2.0			3.50	Kodak Tri-X	400/	N	C	13/P		Falsarella,N	
10.229	851599	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	14/C	3	Tarnutzer,A	
10.231	851600	0.210	4		9.8 x 6.5	6.00	Polaroid 612		N	X	2/P	6	Carragan,W	H
10.243	851601	0.135	2.8		15.2 x10.2	10.00	Kodak 2415		Y	M	026/P	3	Brutsche,E	I
10.250	851602	0.050	1.8		39.6 x27.0	5.00	Kodak 2415		Y	M	027/P	3	Brutsche,E	I
10.285	851603	0.700	5	0.140	2.9 x 2.0	90.00	Tri-X Pro	320/	N	X	7/T	1	Travnik,N.A.S	J
10.351	851604	0.058	1.4		34.5 x23.4	0.25	Kodak Tri-X		N	T	10/C	4	Priester,D.C	K
10.351	851605	0.085	4.0		23.9 x16.1	30.00	103a-O		N	C	10/S	1	Binnewies,S	
10.352	851606	0.058	1.4		34.5 x23.4	0.50	Kodak Tri-X		N	T	9/C	4	Priester,D.C	K
10.354	851607	0.050			39.6 x27.0	0.67	Kodak VR1000	1000/	N	T	10/C	4	Priester,D.C	
10.354	851608	0.050			39.6 x27.0	0.33	Kodak VR1000	1000/	N	T	11/C	4	Priester,D.C	
10.355	851609	0.050			39.6 x27.0	0.17	Kodak VR1000	1000/	N	T	12/C	4	Priester,D.C	
10.356	851610	0.050			39.6 x27.0	0.50	Kodak VR1000	1000/	N	T	13/C	4	Priester,D.C	
10.409	851611	0.200	4		10.3 x 6.9	5.00	3M 1000	1000/	N	O	37/N	10	Eddberg,S.J	
10.414	851612	0.200	4		10.3 x 6.9	10.00	3M 1000	1000/	N	O	38/N	10	Eddberg,S.J	
10.427	851613	0.300	1.5	0.203	6.9 x 4.6	8.00	Kodak 2415		Y	X	13/P	1	Marafie,A.H	L
10.435	851614	0.300	1.5	0.203	6.9 x 4.6	10.00	Kodak 2415		Y	X	14/P	1	Marafie,A.H	L
10.447	851615	0.300	1.5	0.203	6.9 x 4.6	15.00	Kodak 2415		Y	X	15/P	1	Marafie,A.H	L
10.479	851616	0.300	1.5	0.203	6.9 x 4.6	20.00	Kodak 2415		Y	X	16/P	1	Marafie,A.H	L
10.489	851617	0.305	1.5	0.203	6.8 x 4.5	20.00	Kodak Tri-X	400/	N	X	007/P	1	Rosenthal,D	L
10.505	851618	0.229	1.7	0.140	9.0 x 6.0	7.00	Fuji RD 400	400/27	Y	X	004/P	3	Allen,M.T	
10.625	851619	0.229	1.7	0.140	9.0 x 6.0	4.00	Kodak 2415		Y	X	002/P	3	Allen,M.T	



DATE: 10 APR 1986

DATE: 10 APR 1986

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
10.637	851620	0.229	1.7	0.140	9.0 x 6.0	6.00	Kodak 2415		Y	X	003/P	3	Allen, M.T	
10.648	851621	0.229	1.7	0.140	9.0 x 6.0	5.00	Kodak 2415		Y	X	001/P	3	Allen, M.T	
10.735	851622	0.050	1.8		39.6 x 27.0	2.00	Kodak VR	1000/	N	C	6/P	3	Vincent, F	
10.773	851623	0.050	1.7		39.6 x 27.0	5.00	Kodak Tri-X	400/	N	O	20/C	7	Martin, D	
10.773	851624	0.050	1.7		39.6 x 27.0	5.00	3M	1000/	N	O	24/T	7	Martin, D	
10.779	851625	0.050	1.7		39.6 x 27.0	10.00	Kodak Tri-X	400/	N	O	21/C	7	Martin, D	
10.779	851626	0.050	1.7		39.6 x 27.0	10.00	3M	1000/	N	O	25/T	7	Martin, D	
10.786	851627	0.050	1.7		39.6 x 27.0	5.00	Kodak Tri-X	400/	N	O	22/C	7	Martin, D	M
10.786	851628	0.050	1.7		39.6 x 27.0	5.00	3M	1000/	N	O	26/T	7	Martin, D	
10.797	851629	0.050	1.7		39.6 x 27.0	10.00	Kodak Tri-X	400/	N	O	23/C	7	Martin, D	M
10.797	851630	0.050	1.7		39.6 x 27.0	10.00	3M	1000/	N	O	27/T	7	Martin, D	
10.804	851631	0.050	1.7		39.6 x 27.0	5.00	Kodak Tri-X	400/	N	O	24/C	7	Martin, D	N
10.804	851632	0.200	4.5		10.3 x 6.9	5.00	3M	1000/	N	O	28/T	7	Martin, D	
10.808	851633	0.240	4.5		8.6 x 5.7	8.00	Ilford HP5	400/27	N	O	207/S	2	Abbott, J	O
10.808	851634	0.050	1.7		39.6 x 27.0	2.00	Kodak Tri-X	400/	N	O	25/C	7	Martin, D	N
10.808	851635	0.200	4.5		10.3 x 6.9	2.00	3M	1000/	N	O	29/T	7	Martin, D	
10.809	851636	0.080	4.5		25.4 x 17.1	20.00	Kodak Tri-X	400/	N	T	4/P	2	Jones, B.W	P
10.822	851637	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	053/P	1	Sternwarte Frankfurt	Q
10.825	851638	0.080	4.5		25.4 x 17.1	20.00	Kodak Tri-X	400/	N	T	5/P	2	Jones, B.W	R
10.840	851639	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	054/P	1	Sternwarte Frankfurt	S
10.841	851640	0.080	4.5		25.4 x 17.1	20.00	Kodak Tri-X	400/	N	T	6/P	2	Jones, B.W	T
10.859	851641	0.080	4.5		25.4 x 17.1	20.00	Kodak Tri-X	400/	N	T	9/P	2	Jones, B.W	P
10.861	851642	0.500	3.5		4.1 x 2.7	15.00	Kodak 2415		Y		25/P	4	Guthier, O	G
10.874	851643	0.080	4.5		25.4 x 17.1	19.00	Kodak Tri-X	400/	N	T	10/P	2	Jones, B.W	U
10.896	851644	0.180	2.8		11.4 x 7.6	5.00	Kodak 103a-O		N	O	13/C	5	Cimatti, A	
10.904	851645	0.225	1.7	0.140	9.1 x 6.1	6.00	Kodak 2415		Y		116/P	3	Koch, B	B
10.908	851646	0.080	4.5		25.4 x 17.1	20.00	Kodak Tri-X	400/	N	T	11/P	2	Jones, B.W	T
10.908	851647	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	057/P	1	Sternwarte Frankfurt	S
10.910	851648	0.225	1.7	0.140	9.1 x 6.1	10.00	Kodak 2415		Y	O	001/T	2	Battaini, P	V
10.918	851649	0.050	2.8		39.6 x 27.0	5.00	Ektachrome	1600/	N	M	490/P	1	Stolzen, P	W
10.960	851650	1.800	6	0.300	1.1 x 0.8	16.00	Kodak 2415		Y		9/P	2	Martinez, P	
10.983	851651	0.135	2.8		15.2 x 10.2	10.00	Ektachrome	1600/	N	M	494/P	1	Stolzen, P	W
10.991	851652	0.300	1.5	0.203	6.9 x 4.6	20.00	Kodak 2415		Y	T	009/P	1	Berge, P.M	X
10.992	851653	0.225	1.7	0.140	9.1 x 6.1	50.00	Kodak 2415		Y		118/P	3	Koch, B	B
10.994	851654	1.800	6	0.300	1.1 x 0.8	16.00	Kodak 2415		Y		10/P	2	Martinez, P	

NOTE A (Observer supplied nonessential notes on original report form. Ed.)

NOTE B (Observer's image identifier preceded by prefix 100/. Ed.)

NOTE C Push processed to 1000 ASA.

NOTE D Photograph made by J. Linder and B. Bottger. Forming gas pressurized to 1.2 bar.

NOTE E Photograph made by J. Linder and B. Bottger.

NOTE F Push processed to 1800 ASA. Photograph made by G. Canonaco and F.R. van Loo.

NOTE G Photograph made by F. Wilken and O. Guthier.

NOTE H Lens has zoom range of 70 to 210 mm. Film ISO 20000. Photograph made by Julie and William Carragan.

NOTE I (Observer appears to have confused C and F temperature scales for developer temperature. Ed.)

NOTE J Instrument is Zeiss Tessar. Format size 88 mm x 128 mm.

NOTE K Push processed to 800 ASA.

NOTE L Instrument is Schmidt camera.

NOTE M Blue W47 filter used.

NOTE N Orange W21 filter used.

NOTE O (Photographer's image identifier is 22, 7. Ed.)

NOTE P Thunderstorm in the west. Film roll Tri-X/6.

NOTE Q Photograph made by Y. Walter. Push processed to 2000 ISO.

NOTE R Wratten 47A (blue) filter used. Thunderstorm in the west. Film roll Tri-X/6.

NOTE S Photograph made by P. Engel. Push processed to 2000 ISO.

NOTE T Wratten 21 (orange) filter used. Thunderstorm in the west. Film roll Tri-X/6.

NOTE U Cut short because of cloud. Wratten 47A (blue) filter used. Thunderstorm in the west. Film roll Tri-X/6.

NOTE V Instrument used is Schmidt camera.

NOTE W (Observer's image identifier is preceded by prefix 2. Ed.)

NOTE X Photograph made by G. Mahoux and P.M. Berge.

DATE: 11 APR 1986

DATE: 11 APR 1986

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
11.000	818582	3.0	M	5B	38	7	4.2		0.05	B		10	6.0	Y	12	Melandri, F	A
11.00	818583	2.8	B	5B	30	6			0.03	B		8	6.0	Y	3	Fischer, D	B
11.024	818584	2.9	B	5B			6.5	325	0.03	B		8	6.5	Y	3	Hasubick, W	C
11.024	818585			5B	30	5			0.08	B		20	6.5	Y	3	Hasubick, W	
11.024	818586	2.9	B	5B			3.7	325		EY			6.5	Y	3	Hasubick, W	D
11.042	818587	2.5	S	5B	45	7	5.0		0.08	B		20	6.0	Y	7	Parisis, R	E
11.06	818588	2.7	M	IKW	36	6	3.7	347		EY			6.0	Y	5	Granslo, B.H	
11.073	818589			5B	23	5	1.5	335	0.050	B		10	4.0	Y	11	Vanin, G	F
11.074	818590	3.1	B	IKW						EY			6.2	Y	3	Guthier, O	
11.097	818591	3.4	B	IKW	32.5	6	6.0		0.050	B		10	6.2	Y	3	Guthier, O	G
11.10	818592		B			6			0.063	B		9	6.0	Y	3	Fischer, D	H
11.10	818593				33	7	2.9	337	0.035	B		7	6.0	Y	5	Granslo, B.H	
11.125	818594	3	B	160		3			0.050	B		20	6.4	Y	1	Carello, S	
11.130	818595	2.9	B	160		3			0.050	B		20	6.4	Y	1	Lovera, A	
11.167	818596	3.7		161					0.07	R	15	40		Y	2	Moreno, G	I
11.177	818597	3.2	S	5B	21	3	2		0.050	B		10	4	Y	7	Rogers, J.H	J
11.226	818598	4.3	B	5B		3			0.03	B		8	4.0C	Y	2	Giraudi, J.D	
11.229	818599	2.3	B	5B		6	3.5		0.05	B		20	4.9	Y	2	Diaz, P., E	
11.233	818600	4.2	B	5B		3			0.03	B		8	4.0C	Y	6	Giraudi, J.D	
11.236	818601		B		36	8		334	0.08	B		11		Y	5	Gorski, L	
11.237	818602	4.2	B	5B		3			0.03	B		8	4.0C	Y	2	Giraudi, J.D	
11.324	818603	2.5	B	5B	45	7	1.5		0.050	B		10	6.0	Y	6	Hodonsky, K	
11.354	818604	4.4	B	160					0.080	B		20	4.5	Y		Smith, D	K
11.41	818605	3.3	SAO		30		6	290		EY			6.0	Y	4	Ashdown, M	L
11.417	818606	2.1	S	5B						EY						Seargent, D	M
11.417	818607						3.5	330	0.08	B		15				Seargent, D	N
11.47	818608	2.4	S	5B		4			0.018	B		2	7	Y	16	Bouma, R.J	
11.49	818609	2.3		5B	35	3				EY		7		Y	16	Bouma, R.J	
11.500	818610	3.9	B	5B	40	7	3.25	330	0.05	B		7	5.4	Y	2	Bembrick, C	O
11.521	818611	3.7		5B	20	2				EY		6		Y	1	Tregaskis, T.B	
11.53	818612	2.5	M	5B	30	4	5.5	334	0.05	B		10	7	Y	16	Bouma, R.J	P
11.53	818613	3.5	B	5B		2			0.050	B		7	4.3C	Y	1	Matchett, V	
11.556	818614			5B	50	3	2.5	350	0.05	B				N	1	Tregaskis, T.B	Q
11.58	818615					5			0.08	B		15		N	1	Lovejoy, T	
11.583	818616	2.8	S	5B	45	4			0.07	B		10	6.0	Y	2	Kobayashi, J	R
11.62	818617	3.3	M	SAO	28	5	3.7	335	0.065	R	8	16	6.0	Y	9	Nakamura, A	S
11.62	818618	3.1		5B	20	5			0.20	SC	10	77	6.5	Y	2	Ward, A	
11.646	818619	2.9	S	160, 140	15	4	1	0		EY		6.3	24	Y	12	Foulkes, M	T
11.65	818620	4.3	S	AAVSO	12				0.13	M	10	55	4.5C	Y	1	Hayashi, A	
11.665	818621	4.2	M	5B	10	3			0.10	N				Y	1	Kato, T	
11.667	818622	3.5	B	5B	20				0.035	B		7		Y	2	Okada, M	
11.67	818623	3.2	S		20	5			0.08	B		11	5.5	Y	1	Akita, I	
11.67	818624	4.5	S	AAVSO	10	4			0.07	B		10	3.0	Y	1	Hayashi, A	
11.67	818625	3.4	M	5B			7.0		0.05	B		7	5.5	Y	3	Suzuki, K	U
11.67	818626			5B	9.7	5			0.076	R	7.9	50	5.5	Y	3	Suzuki, K	
11.68	818627	3.2		5B	20	5			0.030	B		8	6.5	Y	2	Ward, A	
11.702	818628	3.9	S	5B	12.5	5			0.05	B		7	2.5	Y	1	Kasai, K	
11.712	818629	4.0	M	5B	15	3			0.08	B		11		Y	1	Mitsuma, S	
11.74	818630						6	337	0.05	B		10	7	Y	16	Bouma, R.J	V
11.75	818631	2.3	B	5B			1.5	5		EY			6.5	Y	38	Hale, A	W
11.75	818632		B				2	5	0.05	B		10	6.5	Y	38	Hale, A	W
11.792	818633	3.0	M	5B	44	6	5.2		0.05	B		10	6.0	Y	12	Melandri, F	X
11.81	818634	2.6	B	5B						EY			6.9	Y		Pearce, A	
11.81	818635	2.9	S	5B			6.1	339	0.030	B		8	6.9	Y		Pearce, A	
11.823	818636	3.5	S	5B	75	5	7.5	340	0.08	B		30	7.0	Y	7	Campos, J	Y
11.830	818637	3.0		5B	120	4	5.25	350		EY			7.0	Y	7	Vincent, J	
11.833	818638	3.8	B	5B	50	5			0.06	B		15	5.9	Y	1	Fleet, R.W	Z
11.840	818639	3.9	M	5B	34	5	6.9	342	0.08	B		11	5.5	Y	1	Fleet, R.W	a
11.854	818640	4.5	B	5B	35	6	2	0	0.065	B		20	6.0	Y	1	McBain, J	
11.875	818641	3.0	M	5B	50	4				EY			5.5	Y	1	Fleet, R.W	b
11.894	818642	3.8	M	5B	16.1	6	0.75	0	0.12	C	10	40	4.5	Y	6	Cifuentes, E	
11.91	818643	3.0	B	5B						EY			5.3		20	Shanklin, J.D	
11.922	818644	3.2	M	5B	23	6	0.67	0	0.12	C	10	40	7	Y	1	Bernabeu, M	
11.951	818645	3.2	B	5B	42	5	1.0	7		EY			6.2	Y	2	Abbott, J	c
11.958	818646	3.8	B	5B		5			0.050	B		10	6.2	Y	2	Abbott, J	d
11.982	818647	3.8	M	5B					0.035	B		9	5.9	Y	1	Begbie, M.J.R	

NOTE A I can see all the 4 deg. of tail with naked-eye. Tail length is for ion tail.

NOTE B Tail length = up to 5 deg. Again 100 deg. fan, plasma &amp; dust.

NOTE C 2.6 deg. tail II PA 325-0. Tail I plasma; tail II gas. [sic]

NOTE D Tail I - plasma.

NOTE E Tail PA 70, 330.

NOTE F Magnitude 3.0-3.2 naked eye. [sic]

NOTE G Tail I 6.0 deg. long, tail II 2.0 deg. long.

NOTE H Tail length = up to 6 deg. Again 100 deg. fan, plasma &amp; dust.

NOTE I (Comparison chart appears incorrect. Ed.)

NOTE J Comet seen briefly through gap in cirrus cloud. Coma diameter approximate. Less condensed before with no stellar nucleus (striking contrast to April 6+7 and even more diffuse than April 9+10). Instead, bright blob approximately 4 arc min. across in centre. Tail length approximate. Tail not properly observable but gas tail as yesterday to about 2 deg.

NOTE K Comet elevation 3 deg.

NOTE L DC in 7x50 binoculars: 8.

NOTE M False nucleus less bright.

NOTE N PA 60 tail length approximate.

NOTE O Straight gas tail; fan shaped dust tail.

NOTE P Gas tail, very intense at PA 334. Broad dust fan includes other tail listings. Dust fan PAs are approximate.

NOTE Q Tenuous tail. (Observer gave limit as approximately 10. Ed.)

NOTE R Tail PA 0-90 deg.

NOTE S 0.6 deg. tail PA 330 to 70.

NOTE T Some cloud. Excellent.

NOTE U Guam tour.

NOTE V Gas tail at PA 337. Broad dust fan includes other tail listings. Dust fan PAs are approximate.

NOTE W The two easternmost tails are probably the edges of one very broad, fan-shaped dust tail, as even 10x50 binoculars showed material between them. The tail at PA 340 deg. was clearly an ion tail and showed a pronounced broadening at the end.

NOTE X The longest side of the fan is the ion tail (5.2 deg.), the other side (dust tail) is 4.2 deg.

NOTE Y Straight tail at PA 340. Curved dust tail at PA 5.

NOTE Z 4.3 and 3.9. Tail not visible? Activity in coma (220x35) reflector.

NOTE a Gas tail at PA 342. Midpoints on dust tail: 1.9 deg. at PA 11; 4.5 deg. at PA 7. Suspected end of dust tail: 6.1 deg. at PA 14. Type III [sic] tail at PA 71.

NOTE b Leading edge of dust fan: 4.2 deg. at PA 6. Trailing edge of dust fan: 4.0 deg. at PA 53.

NOTE c Comparison stars (3.2, 4.0). Type I tail 1.0 deg. at PA 7. Type II tail 2.0 deg. long, PA 23 at 1.0 deg. distance; PA measured at middle of tail. Type III [sic] tail 1.1 deg. long, PA 115 at 1.1 deg. distance; distinct leading edge measured.

DATE: 11 APR 1986

DATE: 11 APR 1986

NOTE d Comparison stars (3.2, 4.0). Tail measurements clouded out.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
11.049	831091		0.125	R	6	44			4	Guthier,O	A
11.188	831092		0.30	N	5.7	70,300	240		1	Pizzi,R	B
11.555	831093	2.5	0.050	B		10			1	Tregaskis,T.B	C
11.661	831094	2	0.065	B		12	16	6.0	12	Foulkes,M	D
11.840	831095	4	0.08	B		11		5.5	1	Fleet,R.W	E
11.869	831096	1.36	0.12	C	10	40	256	6	1	Bernabeu,M	F
11.880	831097	1.28	0.12	C	10	40	75	4.5	6	Cifuentes,E	G

NOTE A (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B We began observing Halley on the 11th at 0230 UT with a power of 70x, and we soon noticed an anomaly in the nuclear region. We increased the power to obtain a better resolution so we switched to 300x with an Erfle eyepiece. The night was spectacularly clear and the comet stood high in the sky, due to our southerly latitude of -32 deg. 57 min. What we observed was, in our opinion, a small secondary nucleus, very close to the principal one, almost touching each other like a partially resolved binary star. This pattern was independently observed by five staff members, and some of us saw even two anomalous nuclei. To verify that these features weren't stars we observed again 4 hours later at 0630 UT and the appearance we saw then was rather similar to the earlier one, albeit looser. The features were observed as minute globules, a little fainter than the principal nucleus. Observation made by Cristo Rey College Astronomical Observatory staff and Rogelio Pizzi. (Listing data inferred from written text. No drawing submitted. Ed.)

NOTE C Drawn from memory on the following morning because of cloud. Limiting magnitude approximately mag. 10. Scale approximate.

NOTE D Narrow tail at PA 340, length 5.0 deg. Tail at PA 355 to 15, length 2 deg. 20 min. Fan tail at PA 15 to 85, length 1 deg. Coma diameter 20' DC 5. Bright central spot offset to PA 260. Very fine bright but very narrow curved tail extended towards Eta Cen. Shorter and slightly fainter tail extended from PA 355-15. These two tails were quite separate. Extending following from the central tail was a fainter fan tail out to PA 85. Span of tails >90 deg. The appearance of the comet made the journey from Alice well worth it. It had rained all day in Alice(!). But weather reports indicated that the edge of the rain lay just to the south. By driving south, we managed to obtain clear skies. One vehicle in our party became stuck in the sand but was dug out. The clarity of the air was excellent. Canopus was seen setting right on the horizon. Similarly, Achernar was seen rising very close to the horizon.

NOTE E Gas tail at PA 342. Dust tail end point at PA 14. Type III [sic] at PA 71. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE F Coma 23 arc min. Tail 40 min. PA 0.

NOTE G Tail 45', PA 0.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
11.003	851655	0.135	2.8		15.2 x10.2	10.00	Ektachrome	1600/	N	M	497/P	1	Stolzen,P	A
11.009	851656	0.225	1.7	0.139	9.1 x 6.1	20.00	Kodak 2415		Y	O	16/P	1	Farroni,G	
11.074	851657	0.500	3.5		4.1 x 2.7	30.00	Kodak 2415		Y		26/P	4	Guthier,O	B
11.085	851658	0.050	2.8		39.6 x27.0	5.00	Ektachrome	1600/	N	M	500/P	1	Stolzen,P	
11.097	851659	0.225	1.7	0.140	9.1 x 6.1	10.00	Kodak 2415		Y		122/P	3	Koch,B	C
11.098	851660	0.500	3.5		4.1 x 2.7	15.00	Kodak 2415		Y		27/P	4	Guthier,O	B
11.110	851661	0.600	8		3.4 x 2.3	16.00	Polaroid 612		N	X	3/P	5	Carragan,W	D
11.116	851662	0.050	2.8		39.6 x27.0	15.00	Kodak 2415		Y	T	4/N	1	Pedersen,V.T	E
11.132	851663	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	16/C	3	Tarnutzer,A	
11.141	851664	0.200	4		10.3 x 6.9	6.00	Konica	1600/	N	X	5/P	5	Carragan,J	F
11.147	851665	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	17/C	3	Tarnutzer,A	
11.155	851666	0.050	2.8		39.6 x27.0	30.00	Kodak 2415		Y	T	5/N	1	Pedersen,V.T	G
11.159	851667	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	18/C	3	Tarnutzer,A	
11.162	851668	0.050	2.8		39.6 x27.0	5.50	Konica	1600/	N	X	7/P	5	Carragan,J	F
11.169	851669	1.200	6	0.200	1.7 x 1.1	17.00	Kodak 2415		Y		13/P	1	Association M31	
11.170	851670	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	19/C	3	Tarnutzer,A	
11.180	851671	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	20/C	3	Tarnutzer,A	
11.192	851672	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	21/C	3	Tarnutzer,A	
11.199	851673	0.058	2		34.5 x23.4	10.00	Kodak 2415		Y	X	22/C	3	Tarnutzer,A	
11.216	851674	0.050	4		39.6 x27.0	6.08	Kodak Tri-X	400/27	N	X	011/P	1	Castineiras,R.S.J	H
11.222	851675	0.050	2			3.50	Kodak Tri-X	400/	N		2/P	1	Falsarella,N	
11.251	851676	0.050	2			3.50	Kodak Tri-X	400/	N		1/P	1	Falsarella,N	
11.261	851677	0.050	2			3.00	Kodak Tri-X	400/	N		3/P	1	Falsarella,N	
11.285	851678	1.80	6	0.30	1.1 x 0.8	0.17	Kodak Tri-X	400/27	N	X	13/P	1	Castineiras,R.S.J	H
11.287	851679	1.80	6	0.30	1.1 x 0.8	0.50	Kodak Tri-X	400/27	N	X	14/P	1	Castineiras,R.S.J	H
11.333	851680	0.085	2.8		23.9 x16.1	30.00	103a-E		N	C	4/S	1	Binnewies,S	I
11.333	851681	0.085	4.0		23.9 x16.1	30.00	103a-O		N	C	11/S	1	Binnewies,S	
11.333	851682	0.085	4.0		23.9 x16.1	30.00	103a-G		N	C	12/S	1	Binnewies,S	J
11.365	851683	0.085	4.0		23.9 x16.1	60.00	103a-G		N	C	13/S	1	Binnewies,S	
11.406	851684	0.050	2.8		39.6 x27.0	10.00	3M 1000	1000/	N	O	6/S	1	Haagh,N	K
11.422	851685	0.200	3.5		10.3 x 6.9	10.00	3M 1000	1000/	N	O	9/S	1	Haagh,N	
11.482	851686	0.100	2.8		20.4 x13.7	15.00	Kodak 2415		Y	O	64/S	6	Garradd,G	L
11.502	851687	0.180	2.8		11.4 x 7.6	10.00	Kodak 2415		Y	O	65/S	6	Garradd,G	L
11.514	851688	0.180	2.8		11.4 x 7.6	15.00	Kodak 2415		Y	O	66/S	6	Garradd,G	L
11.756	851689	0.050	1.8		39.6 x27.0	2.50	Kodak VR	1000/	N	C	7/P	3	Vincent,F	M
11.766	851690	0.180	2.8		11.4 x 7.6	20.00	Kodak 103a-O		N	O	14/C	5	Cimatti,A	
11.795	851691	0.225	1.7	0.140	9.1 x 6.1	10.00	Kodak 2415		Y	O	001/T	2	Battaini,P	
11.822	851692	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	070/P	1	Sternwarte Frankfurt	N
11.826	851693	0.225	1.7	0.140	9.1 x 6.1	10.00	Kodak 2415		Y	O	002/T	2	Battaini,P	
11.830	851694	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	15/C	5	Cimatti,A	
11.840	851695	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	071/P	1	Sternwarte Frankfurt	O
11.851	851696	0.200	2		10.3 x 6.9	10.00	Kodak 103a-E		N	S	19/P	2	Dragesco,J	
11.861	851697	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	072/P	1	Sternwarte Frankfurt	P
11.885	851698	0.225	1.7	0.139	9.1 x 6.1	20.00	Kodak 2415		Y	O	17/P	1	Farroni,G	
11.887	851699	0.300	1.5	0.203	6.9 x 4.6	20.00	Kodak 2415		Y	T	011/P	1	Berge,P.M	Q
11.901	851700	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	16/C	5	Cimatti,A	
11.922	851701	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	17/C	5	Cimatti,A	

NOTE A (Observer's image identifier is preceded by prefix 2. Ed.)

NOTE B Photograph made by F. Wilken and O. Guthier.

NOTE C (Observer's image identifier preceded by prefix 100/. Ed.)

NOTE D Film ISO 20000. Photograph made by Julie and William Carragan.

NOTE E Wratten 2B and 47A filters used.

NOTE F Photograph made by Jerry Rasmussen and Julie Carragan.

NOTE G Wratten 21 filter used.

NOTE H City lights.

NOTE I OG 590 orange, 3 mm thick filter used.

NOTE J GG 495 yellow, 3 mm thick filter used.

NOTE K UV #1A filter used.

NOTE L Temperature for hypersensitization 60-65 deg. C.

NOTE M Some patchy cloud.

NOTE N Photograph made by H. Neumann. Push processed to 2000 ISO.

NOTE O Photograph made by H. Templin. Push processed to 2000 ISO.

NOTE P Photograph made by Y. Walter. Push processed to 2000 ISO.

NOTE Q Photograph made by G. Mahoux and P.M. Berge.

DATE: 11 APR 1986

DATE: 11 APR 1986

SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
11.186	870138	600G-O	CL	0.135	1.9		30.00	Kodak 2415		N	C	518/S	5	Buchanan, W.T	A

NOTE A Comet Halley visible to naked eye. (Observer's image identifier is E-125-18. Ed.)

DATE: 12 APR 1986

DATE: 12 APR 1986

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
12.01	818648	4.0	M	3A	20	6	4.0	350	0.05	B		7				Keszthelyi, S	A
12.042	818649	2.6	B	5B	31	6	2.2	10		EY			6.0	Y	7	Bottger, B	
12.063	818650				17.8	6	3.2	30	0.30	N	8.5	102	5.9	Y	1	Begbie, M.J.R	B
12.083	818651			5B	11	5	2.7		0.03	B		8	6.5	Y	3	Hasubick, W	C
12.09	818652	2.7	M	IHW	37	6				EY			6.0	Y	5	Granalo, B.H	D
12.10	818653	2.5	S	DCS 10	20	6	3.0	350	0.080	B		15	7	Y	2	Wills, P	
12.11	818654				38	7	2.7	6	0.035	B		7	6.0	Y	5	Granalo, B.H	D
12.194	818655	4.3	B	5B	7	5			0.06	R	8	15	4.5	Y	2	Schambeck, C.M	
12.208	818656	3.7	B	160,159					0.05	B		7	4.8C	Y	2	Lupianez, B	
12.285	818657	4.3	B	159					0.080	B		20	4.5	Y		Smith, D	E
12.29	818658	3.1	S	5B	60	7	2	60	0.108	N	4	17	6.5	Y	2	Harrington, P	
12.29	818659	4		5B	9	7			0.335	N	4.5	56	2.3	Y		Kronk, G	F
12.30	818660	3.1	B	5B						EY			6.0		21	Shanklin, J.D	
12.358	818661	3.9	B	159	36	2			0.05	B		7	4.0		1	Laird, R	
12.39	818662						2.5		0.08	B		20		N	16	Edberg, S.J	G
12.40	818663						1.5	359		EY			6.0	Y	6	Keen, R	H
12.43	818664	3.7	B	5B		2			0.050	B		7	4.8C	Y	1	Matchett, V	
12.437	818665	3.4	S	5B	10	6			0.080	B		20		Y	1	Batza, E	I
12.4653	818666	2.8	M	5B	40	6	10.88	337	0.05	B		7	6.5	Y	17	Cook, A.J	J
12.48	818667	3.0	M	5B		5			0.050	R		8	7.0	Y	36	Morris, C.S	
12.481	818668	4.1	B	159		3			0.050	B		20	5.0	Y	1	Castrillon, M.E	
12.49	818669				19	5	5.3	335	0.050	B		7	6.5	Y	6	Bortle, J.E	K
12.49	818670	3.0	B	5B	29	5	3			EY			6.5	Y	6	Bortle, J.E	L
12.51	818671	3.3	S	5B	20	7			0.030	B		8	6.5	Y	2	Ward, A	
12.52	818672	4.0	B	IHW BAA		4	7.5	320	0.050	B		10	7.0	Y	36	Green, D.W.E	M
12.52	818673								0.035	B		7				Morris, C.S	
12.52	818674	2.5	B	5B						EY			6.9	Y	2	Pearce, A	N
12.521	818675	4.3	B	5B		3	0.33	345	0.108	N	4	16	6	Y		Turner, N	
12.54	818676	3.3	M	IHW BAA					0.035	B		7				Green, D.W.E	
12.54	818677	3.2	S	IHW BAA					0.035	B		7				Green, D.W.E	O
12.54	818678						1.3	320		EY			7.0	Y	36	Morris, C.S	
12.552	818679	3.2	S	140,160	15		0.5	0		EY			6.1	Y	13	Foulkes, M	
12.57	818680	3.1	B	IHW BAA						EY						Green, D.W.E	
12.576	818681	3.6		5B	45	2	1			EY		6		Y	1	Tregaskis, T.B	P
12.58	818682	2.3		5B		7	8.0			EY			6.5	Y	1	Lovejoy, T	Q
12.58	818683	3.2		5B	20	6			0.20	SC	10	77	6.5	Y	2	Ward, A	
12.583	818684	2.7	S	5B	45	4	5		0.07	B		10	6.0	Y	2	Kobayashi, J	R
12.59	818685	2.5	B	5B						EY			6.3	Y		Clark, M.L	
12.594	818686	4.4	S	5B	10	5	1	10	0.080	B		11		Y	8	Pryal, J	S
12.60	818687	3.4	S	5B	39	7	2.2		0.25	N	5	38	6.3	Y		Clark, M.L	T
12.630	818688	4.0	M	5B	10	5	0.17	310	0.10	N	10	55	4.5C	Y	1	Kato, T	
12.63	818689	4.3	S	AAVSO	10	4			0.07	B		10	3.0	Y	1	Hayashi, A	
12.63	818690	2.5	M	5B	20	6			0.08	B		20	5.0	Y	1	Oka, A	
12.63	818691	3.8	S	5B	15	7			0.07	B		10	5.0	Y	2	Yasuki, M	
12.639	818692	3.5	M	5B	18	5			0.030	B		8	4.5C	Y	1	Kato, T	
12.642	818693	4.2	S	5A, 5B	4.5	4	0.50	270	0.15	R	15	56	4.0	Y	9	Ichikawa, K	
12.663	818694	3.4	B	5B	40				0.05	B		7	6.0	Y	2	Hayashi, H	
12.667	818695	3.5	B	5B					0.035	B		7		Y	2	Okada, M	
12.67	818696	3.5	M	5B			6.0		0.05	B		7	5.5	Y	3	Suzuki, K	U
12.68	818697	3.5	S		15	5			0.08	B		11	5.0	Y	1	Akita, I	
12.69	818698	3.4	M	SAO	30	5	3.2	350	0.065	R	8	16	5.5	Y	9	Nakamura, A	V
12.73	818699	3.3	S	5B, 140	27				0.023	B		3		Y		Jones, A	
12.733	818700	4.5	B		15	5			0.100	N	12	40	4.4	Y	1	Bagla, J.S	W
12.77	818701	2.5	S	5B		4			0.018	B		2	7	Y	15	Bouma, R.J	
12.774	818702	4.0	M	5B	30	5	4.2	341	0.08	B		11	5.4	Y	1	Fleet, R.W	X
12.78	818703	2.7	M	5B	28	5	3	345	0.05	B		10	7	Y	15	Bouma, R.J	Y
12.785	818704	3.3	M	5B	50	3	5.6	30		EY			5.4	Y	1	Fleet, R.W	Z
12.833	818705	3.0	M	5B	50	7	3.6		0.05	B		10	6.0	Y	12	Melandri, F	a
12.833	818706	3.6	M	5B	26	7	1.0		0.12	C	10	40	7	Y	1	Bernabeu, M	b
12.833	818707	3.6	B	5B	30	5			0.105	R		86	5.7	Y	2	Vincent, J	c
12.86	818708	2.8	M	IHW BAA					0.035	B		7				Green, D.W.E	
12.86	818709	3.0	S	IHW BAA	28	6			0.035	B		7				Green, D.W.E	d
12.861	818710		B	5B	32	28	2.9	352	0.05	B		10	6.3	Y	1	Abbott, J	e
12.864	818711	3.8	M	5B	18.6	7	1.50		0.12	C	10	40	5.0	Y	6	Cifuentes, E	f
12.905	818712	3.0	S	140	36		2.5	35		EY			6.7	Y	7	Haver, R	g
12.910	818713	3.2	S	140	32	3	1.53	345	0.05	B		7	6.7	Y	7	Haver, R	h
12.93	818714	3.2	B	5B						EY			6.3		22	Shanklin, J.D	
12.946	818715	3.7	M	5B					0.035	B		9	5.4	Y	1	Begbie, M.J.R	
12.969	818716				15.4	6	2.5	20	0.30	N	8.5	102	5.4	Y	1	Begbie, M.J.R	i
12.975	818717	4.1	M	5B					0.04	B		12	6.1	Y	3	Henshaw, C	

NOTE A 6 mag. nucleus.

NOTE B Tail measurement refers to dust tail only.

NOTE C Coma diameter approximate. PA 0-45. Tail II - gas.

NOTE D Possible nucleus seen in 0.203 m Schmidt-Cass. at 222x at mag. 12.5: at 0203 UT.

NOTE E Comet elevation 6 deg.

NOTE F Tail PA 315 deg. to 0 deg. Coma diameter approximate. Comet only 5 deg. high.

NOTE G Comet skimming mountain horizon at 10000 ft. Tail length approximate.

NOTE H Observation from Fiji.

NOTE I Tail not readily apparent. (Observer gave limit as 10.5. Ed.)

NOTE J Tail 1 at PA 337. Tail 2 greatest length at PA 38, tail 2 west boundary 3.67 deg. at PA 3, south boundary 4.48 deg at PA 83.

NOTE K Strong change in tail's appearance! Large, contorted gas tail, extremely faint, traceable 5.3 deg. in PA 335. It is clearly separated from large fan-shaped, curving tail to the east. Dust tail is strongly curved to the east, its leading edge also PA 335 but curving away eastward very quickly. Broad, bright "center" of dust tail at PA 10 and trailing edge is along PA 85 and traceable 5.5 deg.

NOTE L Tail length = 3+.

NOTE M Additional tail data: 7.5 degrees in PA 72. Multiple tails define the shape of the fan tail. Tail in PA 320 was the gas tail. Tails in PAs 20 and 30 were dust plumes within the fan, which were curved toward the east. Comet was very near 3.5 mag. star.

NOTE N Coma and tail confused.

NOTE O Multiple tails define the shape of the fan tail. Tail in PA 320 was the gas tail. Tail in PA 30 was a dust plume which was curved toward the east.

NOTE P Wide, faint, tenuous tail. Length approximate.

NOTE Q Coma diameter through 15x80 binoculars: 40'.

NOTE R Tail PA 0-90 deg.

NOTE S Fading fast, short broad fan tail. (Observer gave limit as 9. Ed.)

NOTE T PA of 2.2 deg. tail is 55-31.

NOTE U Guam tour. 6.0 deg. tail is type I, 4.0 deg. tail is type II.

NOTE V 1.5 deg. tail PA 350 to 60.

NOTE W Tail not visible.

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NOTE X Gas tail at PA 341. Midpoint on dust tail (1): 1.7 deg. at PA 7. End point of dust tail (1): 3.1 deg. at PA 6. Midpoint on dust tail (2): 3.0 deg. at PA 39. End point of dust tail (2): 5.6 deg. at PA 41. Type III [sic] tail: 2.9 deg. at PA 79.

NOTE Y Gas tail, faint, at PA 345. Broad dust fan includes other tail listings.

NOTE Z Dust tail at PA 30. Type III [sic] tail at PA 84.

NOTE a The angle of the fan is about 80 deg. Tail length is for ion tail.

NOTE b (Observer lists two PA values: 333 and 27. Ed.)

NOTE c Coma smaller but brighter.

NOTE d Coma diameter approximate.

NOTE e Central cond. only, mag. 4.3. Comparison stars (3.9, 4.4). Type I tail 2.9 deg. at PA 352. Type II tail 3.6 deg. long, PA 20 at 1.3 deg. distance; PA measurement at middle of tail. Type II tail 2.0 deg. long, PA 49 at 1.0 deg. distance; very weak feature. Type III tail 2.5 deg. long at PA 74; very distinct and sharp-edged, leading edge measured.

NOTE f PA 358-359.

NOTE g Center fan-shaped tail.

NOTE h PA 345 is west tail; see drawing. West corner fan-shaped tail at PA 13, 3.30 deg. long; see drawing. PA 36 is center fan-shaped tail; see drawing. East corner fan-shaped tail at PA 59, 3.40 deg. long; see drawing. PA 81 is east tail; see drawing.

NOTE i Tail measurement refers to dust tail only.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
12.146	831098	0.25	0.20	N	8	120	30	6	1	Vargas B.,A.G	A
12.271	831099	0.53	0.15	N	4	68	60	3.5	8	Levy,D.H	B
12.481	831100	3	0.050	B	7		45	6.5	17	Cook,A.J	
12.561	831101	1.35	0.065	B	12		14	6.1	13	Foulkes,M	C
12.757	831102		0.076	N	7.9	60			1	Freydank,E	D
12.774	831103	4	0.08	B	11			5.4	1	Fleet,R.W	E
12.844	831104	1.36	0.12	C	10	40	110	7	1	Bernabeu,M	F
12.844	831105	2.0	0.050	B	10		30	6.3	1	Abbott,J	G
12.865	831106	1	0.12	C	10	40	90	5.0	6	Cifuentes,E	H
12.910	831107	3	0.050	B	7		10	6.7	7	Haver,R	I
12.997	831108		0.30	N	8.5	102,212,425	22	5.4	1	Begbie,M.J.R	J

NOTE A The coma appear very regular and diffuse DC 3 approx. Coma diameter 13' approx. The coma is very regular around the nucleus. The central coma is very diffuse an there is no a remarkable tail around coma. [sic]

NOTE B Scale is approximate.

NOTE C Preceding edge of tail (slightly more intense the rest of tail. Except for spike from coma.) at PA 330, length 1 deg 20 min. Spike (from coma) at PA 20, length 20'. Following edge of tail (extended beyond main fan) at PA 80, length 2 deg. Distinct circular coma (DC 6) with brighter spot in centre. Extending from the coma was a short spike-like feature. Coma diameter 20'. The tail itself was a broad fan. Excluding the edges, it appeared to have 3 layers of brightness. The preceding edge was slightly more intense and straight. The following edge, although not as intense as the preceding edge, was brighter than the rest of the fan and extended beyond the general fan tail - a fine sight.

NOTE D DC 7. Haze and clouds on horizon rising. (Duration not indicated. Time of observation is assumed to be start time.

NOTE E Gas tail at PA 341. Dust tail end point at PA 6. Dust tail end point at PA 41. Type III [sic] at PA 79. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE F Coma 26 arc min. Tail 1 deg. PA 333-27.

NOTE G Object at core of central condensation (c.c.) was stellar. C.c. approximately 4 arc min. Type I tail PA 352, approximately 172x6 arc min. Type II tail at 50 arc min. from c.c. PA between 351 and 37, approximate width 35 arc min., at 80 arc min. from c.c. PA between 358 and 39, approximate width 50 arc min., 2 deg. from c.c. PA between 7 and 41, approximate width 80 arc min., at 2 deg. 40 arc min. from c.c. PA between 13 and 42, approximate width 90 arc min., at 3 deg. 36 arc min., from c.c. PA between 19 and 45, approximate width 1 deg. 46 arc min. Leading sector of type III tail [sic] at 16 arc min. from c.c. PA 74, approximate width 16 arc min., at 2 deg. 44 arc min. from c.c. PA 74, approximate width 28 arc min. Type II, III [sic] PA's measured at defined distances from the central condensation, i.e., 4 @ 2 deg. from central condensation. Semi latus rectum east 18 arc min. Semi latus rectum west 14 arc min. Vertex distance 13 arc min. Possible additional narrow, curved dust tail segment was suspected between the type I and type II tails. All dimensions and PA's derived from AAVSO chart plot. There was a stellar object at the core of the central condensation (c.c.). The c.c. was well defined, appearing quite planetary and offset to the west forward of centre of the 32x28 arc min. coma. The type I tail was nearly 3 deg. in length and becoming very pale in the latter half, fainter than the type III [sic] tail at comparable distance from the c.c. The dominant type II tail was comparable with the coma brightness until the split with the type I tail (62 arc min. from the c.c.). Thereafter curving more rapidly and becoming faint. Total length some 3.5 deg. The leading sector of type III tail [sic] widening wedge some 2.5 deg. in length. Sharply defined leading edge, itself forming a 'spike' tail. The type III tail [sic] appeared at least as bright as the type I tail at comparable distance from the c.c. and similar in brightness to the mid-section of the type II tail. A possible separate dust tail segment lay between the type II and type III tail as defined but was of very low surface brightness. Total angle subtended by all tails amounted to 82 deg.

NOTE H Tail 1 deg. 30 arc min. at PA 358.

NOTE I West tail at PA 345, west corner, fan-shaped tail at PA 13; center fan-shaped tail at PA 36; east corner, fan-shaped tail at PA 59; east tail at PA 81.

NOTE J Fan at PA 180; gas tail at PA 355. Vertex distance 6 arc min.; semi latus rectums P1 = 7.8 arc min., P2 = 6.6 arc min. Elliptical inner coma major axis 8.1 arc min., minor axis 5.0 arc min. The central condensation at 425x was distinctly pear shaped. At the centre of this condensation was a 12.5 magnitude object of stellar appearance which moved together with the rest of the central condensation. The object was also noted on the night of the 10th of April. The fan appeared to 'trail' behind the condensation as it moved against the stellar background. (Two drawings are included in this listing: one made at magnifications of 102 and 212 and scale 0.30 arc min./mm and one made at a magnification of 425 and scale 0.03 arc min./mm. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.010	851702	0.200	2		10.3 x 6.9	10.00	Kodak 103a-E		N	S	20/P	2	Dragesco,J	
12.016	851703	0.050	1.8		39.6 x27.0	15.00	Kodak Tri-X	400/	N	X	2/P	12	Melandri,F	
12.032	851704	0.085	2.0		23.9 x16.1	12.00	Ektachr.P800	800/	N	O	55/P	8	Bottger,B	A
12.033	851705	0.300	1.5	0.200	6.9 x 4.6	5.00	Kodak 2415		Y		1/P	4	Jager,M	
12.037	851706	0.200	2		10.3 x 6.9	13.00	Kodak 103a-E		N	S	21/P	2	Dragesco,J	
12.054	851707	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y		2/P	4	Jager,M	B
12.097	851708	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y		3/P	4	Jager,M	
12.189	851709	0.050	2			3.50	Kodak Tri-X	400/	N		4/P	1	Falsarella,N	
12.208	851710	0.058	1.4		34.5 x23.4	0.42	Fujicolor HR	1600/	N	X	12/P	3	Rueda,N	
12.218	851711	0.050	4		39.6 x27.0	3.00	Kodak Tri-X	400/27	N	X	15/P		Castineiras,R.S.J	C
12.275	851712	0.050	2			3.00	Kodak Tri-X	400/	N		5/P	1	Falsarella,N	
12.313	851713	0.050	1.4		39.6 x27.0	0.33	Kodak Tri-X	400/27	N	X	25/P	1	Garcia,A	
12.403	851714	0.305	1.5	0.203	6.8 x 4.5	20.00	Kodak Tri-X	400/	N	X	009/P	1	Rosenthal,D	D
12.534	851715	0.508	5	0.100	4.1 x 2.7	15.00	Kodak IIA-D		N		033/P	7	Royer,R	E
12.544	851716	0.508	5	0.100	4.1 x 2.7	82.00			N		7/S	7	Royer,R	F
12.565	851717	0.508	5	0.100	4.1 x 2.7	20.00	Kodak 098		N		032/P	7	Royer,R	
12.565	851718	0.105	2.5		19.5 x13.0	20.00	Fujichrome	1600/	N		6/S	7	Royer,R	
12.774	851719	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	18/C	5	Cimatti,A	
12.783	851720	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	19/C	5	Cimatti,A	
12.799	851721	0.050	1.8		39.6 x27.0	2.00	Kodak VR	1000/	N	C	8/P	4	Vincent,F	G
12.810	851722	0.080	4.5		25.4 x17.1	16.00	Agfa 1000 RS	1000/	N	T	510/S	2	Jones,B.W	H
12.867	851723	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	20/C	5	Cimatti,A	
12.875	851724	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	21/C	5	Cimatti,A	
12.903	851725	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	086/P	1	Sternwarte Frankfurt	I
12.909	851726	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	22/C	5	Cimatti,A	
12.910	851727	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	7/P	2	Jones,B.W	J

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DATE: 12 APR 1986

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.923	851728	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	23/C	5	Cimatti,A	
12.924	851729	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	087/P	1	Sternwarte Frankfurt	K
12.925	851730	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	8/P	2	Jones,B.W	L
12.939	851731	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	24/C	5	Cimatti,A	
12.939	851732	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	9/P	2	Jones,B.W	M
12.952	851733	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	12/P	2	Jones,B.W	J
12.965	851734	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	25/C	5	Cimatti,A	

NOTE A With Jager (Austria). Photograph made by J. Linder and B. Bottger.

NOTE B Magnitude 2.8, coma greater than 1 deg., tails: type I greater than 5 deg. at PA 338; type II 3 deg. at PA 0; type II 1.5 deg. at PA 82.

NOTE C City lights.

NOTE D Instrument is Schmidt camera.

NOTE E Visual plate. Wr. 4 filter used.

NOTE F (Tricolor image constructed from three filtered black and white images. Duration indicates period when all three individual images were obtained. Some of the individual images are listed separately. Ed.)

NOTE G Taken during thunderstorm!

NOTE H (Observer's image identifier is Agfa/5/10. Ed.)

NOTE I Photograph made by C. Templin. Push processed to 2000 ISO.

NOTE J Distant thunderstorm in south and east. Heavy dew. Some haze or thin cloud. Film roll Tri-X/7.

NOTE K Photograph made by Y. Walter. Push processed to 2000 ISO.

NOTE L Wratten 47A (blue) filter used. Distant thunderstorm in south and east. Heavy dew. Some haze or thin cloud. Film roll

Tri-X/7.

NOTE M Wratten 21 (orange) filter used. Distant thunderstorm in south and east. Heavy dew. Some haze or thin cloud. Film roll

Tri-X/7.

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.148	870139	600G-O	CL	0.135	1.9		30.00	Kodak 2415		Y	C	420/S	5	Buchanan,W.T	A

NOTE A Frame is second order violet-green. Cirrus clouds. (Observer's image identifier is E-124-20A. Ed.) Comet Halley visible to naked eye.

DATE: 13 APR 1986

DATE: 13 APR 1986

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	
13.003	818718	3.2	M	5B	60		10		0.05	B		7	4.5	N	6	Gallego,J	A	
13.066	818719				8	5			0.09	M	11	56	4.0	Y	8	Westlund,M	B	
13.07	818720	3.8	M	5B					0.040	B		7	4.0	Y	8	Westlund,M	B	
13.104	818721	4.0	B	159				13	0.05	B		7	5.8		5	Benavides,A		
13.106	818722	4.0	M	5B	60				0.05	R	11	30		N	4	Mendez,J	C	
13.12	818723	2.7	S	DCS 11			1.0	0		EY			5	C	Y	4	Wills,P	
13.12	818724		B				5		0.04	B		7				Kiselev,N		
13.139	818725	3.6	B	159	28	2	0.17		0.05	B		7	4.8		5	Lairret,R		
13.167	818726	4.1	B	5B	13	5			0.06	R	8	15	5.0	Y	2	Schambeck,C.M		
13.226	818727	3.2	B	159	23	5		338	0.05	B		20	3.5	Y	1	da Silva,L.A.L	D	
13.238	818728	3.3	B	139	7	2	0.3		0.06	R	12	56	5.3	Y	1	Onofre D.,D	E	
13.240	818729	4.3	B	140					0.080	B		20	4.5	Y		Smith,D	F	
13.25	818730	3.2	B	5B						EY			6.5		24	Shanklin,J.D		
13.27	818731	3.2	S	5B	60	7	2	60	0.108	N	4	17	6.5	Y	2	Harrington,P		
13.292	818732	4.0	B	159	24	2			0.05	B		7	4.3		1	Lairret,R		
13.344	818733	3.8	B	159	28	2			0.05	B		7	4.4		1	Lairret,R		
13.395	818734	3.5	S	5B	10	6			0.080	B		20		Y	1	Batza,S	G	
13.396	818735		B	159	24	2			0.05	B		7	4.0		1	Lairret,R		
13.44	818736	2.6	M	5B	22	4	2.5	354	0.05	B		10	7	Y	14	Bouma,R.J	H	
13.45	818737	3.3	S	5B, 139		5			0.023	B		3				Jones,A		
13.45	818738	4.0	B	5B		2			0.050	B		7	4.4C	Y	1	Matchett,V		
13.46	818739	2.5	M	5B	40	5	2.0	330		EY		1	6.0	Y	6	Keen,R	I	
13.472	818740				23		1.00	350	0.108	N	4	16	6.5	Y	2	Turner,N		
13.51	818741			5B	24	5	2.2	345	0.050	B		7				Bortle,J.E	J	
13.51	818742	3.0	B	5B	29	4	6	50		EY			7	Y	7	Bortle,J.E	K	
13.54	818743	2.6	S	5B		4			0.018	B		2	7	Y	14	Bouma,R.J		
13.54	818744	2.5	S	5B						EY			7	Y	14	Bouma,R.J		
13.54	818745	2.7	B	5B	55	4				EY			5.6	Y		Pearce,A		
13.542	818746			5B	13				0.10	N	3	24			1	Tregaskis,T.B	L	
13.542	818747	3.9	B	5B		6	2		0.050	B		10			1	Tregaskis,T.B	M	
13.551	818748	2.7	S	5B	50	5	6		0.07	B		10	6.0	Y	2	Kobayashi,J	N	
13.56	818749	3.4	S	5B	20	5			0.20	SC	10	77	6.5	Y	2	Ward,A		
13.57	818750	3.1	B	IHM BAA	14	5	4			EY			6.5	Y	18	Green,D.W.E	O	
13.5729	818751	2.7	M	5B	27	6	5.42	4	0.05	B		7	6.5	Y	14	Cook,A.J	P	
13.576	818752	3.7	S	139,159	15		0.5	0		EY			6.0	Y		Foulkes,M		
13.597	818753	2.2	B	3A		14				EY			6.0	Y		Thompson,G		
13.61	818754	2.9	M	5B	21	6	4	345	0.050	B		10	6.5	Y	37	Morris,C.S	Q	
13.61	818755	2.9	M	5B	21	5			0.050	R		8	6.5	Y	37	Morris,C.S		
13.62	818756	2.9	S	5B		6	4	345		EY			6.5	Y	37	Morris,C.S	S	
13.65	818757	3.3	S	5B	20	4			0.030	B		8	6.5	Y	2	Ward,A		
13.654	818758	3.5	S	5B	14.2	5	0.4	0	0.05	B		7	2.0C	Y	1	Kanai,K		
13.667	818759	4.0	B	5B	14.2	5	0.4	0	0.05	B		7	2.0C	Y	1	Kanai,K		
13.69	818760	2.9	S	5B, 139	40	6			0.023	B		3	6.0			Jones,A		
13.69	818761						0.8		0.078	R	7.5	30				Jones,A	T	
13.69	818762				18				0.050	B		7				Jones,A		
13.70	818763	9.0	V	SAO					0.317	N	5	86				Jones,A	U	
13.76	818764	3.0	B	5B					0.018	B		2	7	Y	14	Bouma,R.J		
13.76	818765	2.7	M	5B					0.018	B		2	7	Y	14	Bouma,R.J		
13.76	818766							2	0.05	B		10	7	Y	14	Bouma,R.J	V	
13.764	818767	4.0	B	5B				355	0.108	N	4	16				Turner,N		
13.785	818768	3.6	B	5B	28	7	1.75		0.12	C	10	40	8	Y	1	Barnabeu,M	W	
13.788	818769	3.0	S	5B	48	6				EY			6	Y	1	Tregaskis,T.B	X	
13.833	818770	3.8	B	5B	35	5	3	135	0.105	R	15	86	5.8	Y	2	Vincent,J	Y	
13.838	818771	3.5	M	5B	19.2	6			0.12	C	10	40	5.5	Y	6	Cifuentes,E	Z	
13.851	818772	3.8	M	5B	31	6	3.9	356	0.08	B		11	5.6	Y	1	Fleet,R.W	a	
13.852	818773	4.2	M	3A, 5B	12	6	0.48	0	0.04	B		12	5.8	Y	4	Henshaw,C	b	
13.854	818774	2.7	M	3A	36	8	2.5		0.05	B		10	6.5	Y	12	Melandri,F	c	
13.868	818775	3.1	M	5B	40	5	5.4	51		EY			5.6	Y	1	Fleet,R.W	d	
13.91	818776	3.2	B	5B						EY			5.0		25	Shanklin,J.D		
13.918	818777	3.5	M	5B					0.035	B		9	5.0	Y	1	Begbie,M.J.R		
13.955	818778				18.2	6	6.0	0	0.30	N	8.5	102	5.0	Y	1	Begbie,M.J.R	e	
13.986	818779				9	6			0.09	M	11	56	3.5	Y	8	Westlund,M	B	

NOTE A Very low.

NOTE B Misty sky.

NOTE C Coma diameter is lower limit. Very low.

NOTE D Clouds.

NOTE E Cirrus.

NOTE F Comet elevation 10 deg.

NOTE G Tail not readily apparent. (Observer gave limit as 10.5. Ed.)

NOTE H Gas tail at PA 354. Broad dust fan includes other tail listings.

NOTE I Broad tail from PA 280 to 10 - 90 deg. wide.

NOTE J Short, ghostly gas tail 2.2 deg. long in PA 345. Huge violently curved dust tail extends eastward at least 8 deg. Its leading edge is at PA about 345 and trailing at PA 95. Bright, dense, curving beam of light noted along dust tail's northwestern (leading) side.

NOTE K PA approximate.

NOTE L Stellar-like condensation. DC = 10. [sic] At 150x it is more diffuse.

NOTE M Mag. = Omega Cen. Not stellar-like in binocs. Tail length approximate, broad and faint to 0 deg. Faint glow extends around to 90 deg.

NOTE N Tail PA 0-90 deg.

NOTE O Coma diameter and tail length approximate.

NOTE P Tail 1 at PA 4. Tail 2 greatest length at PA 38; tail 2 west boundary 3.43 deg at PA 17, south boundary 4.85 deg at PA 100.

NOTE Q Tail possibly greater than 20 deg. long. PA 65-150.

NOTE R Tail in PA 345 is the gas tail. Dust fan tail defined by tails in PAs 30 and 90. Trailing edge of fan is straight, but leading boundary is sharply curved toward the east. Edges of fan are brighter than interior. Gas tail is much fainter.

NOTE S Additional tail data: 11.5 degrees in PA 63; 8.75 degrees in PA 75. Tail in PA 345 is a gas tail. Dust fan tail defined by tails between PA 5 and 75. Trailing edge of fan is straight, but leading boundary is strongly curved toward the east. Fan looked uniform. Gas tail much fainter.

NOTE T Tail suspected to 0.8 degrees at PA 5 degrees but only 0.5 at PA 40 deg. Tail PA 5-40.

NOTE U Nucleus.

NOTE V Gas tail at PA 355. Broad dust fan includes other tail listings.

NOTE W (Observer lists two PA values: 0 and 76. Ed.)

NOTE X Slightly brighter than Omega Cen. Hazy.

NOTE Y 4.3 and 3.9 comparison Omega Cen.

NOTE Z Tail length 1.25 to 1.5 deg. PA 348 to 87.

NOTE a Gas tail at PA 356. Midpoints on dust tail: 1.0 deg. at PA 25; 3.4 deg. at PA 43. End point of dust tail: 5.8 deg. at PA 50. Type III [sic] tail at PA 85.

NOTE b Gas tail 0.48 deg. at PA 0; dust tail 0.8 deg. at PA 80.

NOTE c The angle is about 90 deg. Tail length is for ion tail.

NOTE d Dust tail at PA 51. Type III [sic] tail at PA 83. Suspected tail at PA 60.



DATE: 13 APR 1986

DATE: 13 APR 1986

NOTE e Tail measurement refers to dust tail only.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
13.003	831109		0.050	B		7			6	Gallego,J	A
13.064	831110	1.6	0.090	M	11	56		5 4.0	8	Westlund,M	B
13.095	831111							5	1	Zanette,D	C
13.401	831112		0.15	N	4	68		45 5.5	9	Levy,D.H	
13.568	831113	3	0.050	B		7		15 6.5	18	Cook,A.J	
13.590	831114	1.20	0.065	B		9		20 6.5	14	Foulkes,M	D
13.597	831115							20 6.0	4	Thompson,G	E
13.851	831116	4	0.08	B		11		5.6	1	Fleet,R.W	F
13.859	831117	1.36	0.12	C	10		285 8		1	Bernabeu,M	G
13.875	831118	1.09	0.12	C	10	40	120 5.5		6	Cifuentes,E	H
13.984	831119	1.6	0.090	M	11	56		5 3.5	8	Westlund,M	B

NOTE A Tail very diffuse. Low in the horizon (bad seeing). Coma with structure. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

NOTE B Misty sky.

NOTE C Drawing made from a negative exposed 5 minutes on Agfapan 400 ASA, 50 mm lens. The large number of stars seen on the negative are depicted as they appear in the Atlas Coeli. The maximum magnitude estimated on the negative is approximately 8. The comet has lost its tail. Tail I appears divided in two parts. It is short and wide. Tail II is more visible in earlier observations. Now very narrow. (Translated by IEW staff. Ed.) Coma is see clearly to the tails. [sic] Scale = 12.1"/mm.

NOTE D Tail length 1 deg. 40 min. at PA 355. Tail length 1 deg. 36 min. at PA 10. Tail length 1 deg. 24 min. at PA 30. Tail length 1 deg. 36 min. at PA 40. Tail length 1 deg. 36 min. at PA 45. Spike tail length 1 deg. 24 min. at PA 85. Conditions excellent (even Uranus visible to the naked eye). A lot of detail was observed, but was difficult to draw. Tail fan-shaped over 90 deg. in PA. Brightest "tail" was westernmost one, which had a distinct west edge. Main body of tail lay between PA 355-45. Several "tails" seen here as increases of intensity. Distinct spike-tail at PA 85 deg. Very faint material between this and the main body. Coma about 15' diameter. Fainter elliptical extension (but brighter than tails) seen at PA 20 deg. approximate length 15'. Outer head about 40'.

NOTE E Naked eye observation. The main central body of the tail was definitely visible although very faintly to 14 deg. from the nucleus however there was an indication that it extended to 20 deg. It was very fan shaped near the head and easily visible in 20x80 binoculars for 4 deg. A darkening of the sky was visible between the comet's tail and the Milky Way.

NOTE F Gas tail at PA 356. Dust tail end point at PA 50. Type III [sic] at PA 85. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE G Coma 28 arc min. Tail 1 deg. 46 min. PA 0-76.

NOTE H Gas tail at PA 348, 40' long. Dust tail at PA 87, 1 deg. 15' long. Central portion at PA 12, 1 deg. 30' long.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
13.023	851735	0.225	1.7	0.139	9.1 x 6.1	20.00	Kodak 2415		Y	O	18/P	1	Farroni,G	
13.029	851736	0.085	2		23.9 x16.1	10.00	Kodak 103a-E		N	S	22/P	2	Dragesco,J	
13.052	851737	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	092/P	1	Sternwarte Frankfurt	A
13.058	851738	0.050	2.8		39.6 x27.0	60.00	Kodak 2415		Y	T	6/M	1	Pedersen,V.T	B
13.081	851739	0.200	2		10.3 x 6.9	12.00	Kodak 103a-O		N	S	23/P	2	Dragesco,J	
13.081	851740	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	093/P	1	Sternwarte Frankfurt	C
13.115	851741	0.050	2.8		39.6 x27.0	30.00	Kodak 2415		Y	T	7/N	1	Pedersen,V.T	D
13.139	851742	0.050	2.8		39.6 x27.0	30.00	Kodak 2415		Y	T	8/N	1	Pedersen,V.T	
13.240	851743	0.085	2.8		23.9 x16.1	30.00	103a-E		N	C	5/S	1	Binnewies,S	E
13.251	851744	0.050	2.0			3.50	Kodak Tri-X	400/	N	C	14/P	1	Falsarella,N	
13.260	851745	0.085	2.0		23.9 x16.1	90.00	103a-O		N	C	14/S	1	Binnewies,S	F
13.315	851746	1.829	6	0.305	1.1 x 0.8	1.00	Kodak Tri-X	400/27	N	X	033/N	1	Buso,V	
13.322	851747	0.050	2.0		39.6 x27.0	5.25	Kodak Tri-X		N	X	2/P	1	Krisciunas,K	G
13.425	851748	0.305	1.5	0.203	6.8 x 4.5	30.00	Kodak Tri-X	400/	N	X	012/P	1	Rosenthal,D	H
13.458	851749	0.135	3.5		15.2 x10.2	5.00	Ektachr.400		N	X	24/S	1	Tregaskis,T.B	I
13.469	851750	0.135	3.5		15.2 x10.2	10.00	Ektachr.400		N	X	25/S	1	Tregaskis,T.B	I
13.475	851751	0.135	3.5		15.2 x10.2	2.50	Ektachr.400		N	X	26/S	1	Tregaskis,T.B	I
13.481	851752	0.055	2.8		36.2 x24.6	2.00	Ektachr.400		N	X	27/S	1	Tregaskis,T.B	J
13.485	851753	0.055	2.8		36.2 x24.6	4.00	Ektachr.400		N	X	28/S	1	Tregaskis,T.B	J
13.562	851754	0.105	2.5		19.5 x13.0	16.00	Fujichrome	1600/	N		9/S	7	Royer,R	K
13.576	851755	0.508	5	0.100	4.1 x 2.7	58.00			N		8/S	7	Royer,R	L
13.577	851756	0.508	5	0.100	4.1 x 2.7	15.00	Kodak IIA-D		N		035/P	7	Royer,R	M
13.577	851757	0.105	2.5		19.5 x13.0	15.00	Fujichrome	1600/	N		11/S	7	Royer,R	
13.608	851758	0.508	5	0.100	4.1 x 2.7	20.00	Kodak 098		N		034/P	7	Royer,R	N
13.608	851759	0.105	2.5		19.5 x13.0	20.00	Fujichrome	1600/	N		10/S	7	Royer,R	
13.661	851760	0.024	2.8		73.7 x53.1	20.00	Fujichrome	1600/	N		12/S	7	Royer,R	
13.787	851761	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	26/C	5	Cimatti,A	
13.796	851762	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	27/C	5	Cimatti,A	
13.819	851763	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	094/P	1	Sternwarte Frankfurt	O
13.861	851764	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	096/P	1	Sternwarte Frankfurt	A
13.864	851765	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	28/C	5	Cimatti,A	
13.882	851766	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	097/P	1	Sternwarte Frankfurt	O
13.892	851767	0.180	2.8		11.4 x 7.6	20.00	Kodak 103a-O		N	O	29/C	5	Cimatti,A	
13.903	851768	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	098/P	1	Sternwarte Frankfurt	A
13.919	851769	0.225	1.7	0.139	9.1 x 6.1	20.00	Kodak 2415		Y	O	19/P	1	Farroni,G	
13.921	851770	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	30/C	5	Cimatti,A	
13.924	851771	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	099/P	1	Sternwarte Frankfurt	O
13.944	851772	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	100/P	1	Sternwarte Frankfurt	O
13.950	851773	1.800	6	0.300	1.1 x 0.8	40.00	Fujichrome	400/	N	C	11/P	2	Martinez,P	
13.964	851774	0.500	3.5		4.1 x 2.7	40.00	Fujichrome	400/	N		12/P	1	Association M31	
13.986	851775	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	102/P	1	Sternwarte Frankfurt	C
13.989	851776	0.240	4.5		8.6 x 5.7	30.00	Ilford HP5	400/27	N	O	503/S	2	Abbott,J	P

NOTE A Photograph made by H. Neumann. Push processed to 2000 ISO.

NOTE B Wratten 2B and 47A filters used.

NOTE C Photograph made by N. Diehl. Push processed to 2000 ISO.

NOTE D Wratten 21 filter used.

NOTE E OG 590 orange, 3 mm thick filter used.

NOTE F CO+ filter used.

NOTE G Film "push" processed to ASA 800.

NOTE H Instrument is Schmidt camera.

NOTE I Push processed to 800 ASA.

NOTE J Lens aperture stopped down from f/1.2 to f/2.8. Push processed to 800 ASA.

NOTE K Exposure duration uncertain: +0 or -1 minute.

NOTE L (Tricolor image constructed from three filtered black and white images. Duration indicates period when all three individual images were obtained. Some of the individual images are listed separately. Ed.)

NOTE M Wr. 4 filter used.

NOTE N Twice as bright as Omega Centauri cluster but same angular size.

NOTE O Photograph made by Y. Walter. Push processed to 2000 ISO.

NOTE P (Observer's image identifier is 25, 3A. Ed.)

DATE: 14 APR 1986

DATE: 14 APR 1986

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
14.01	818780	2.8	M	INW	33	5				EY			5.5	Y	5	Granalo,B.H	
14.02	818781				30	7	1.1	356	0.035	B		7	5.5	Y	5	Granalo,B.H	
14.028	818782	3.7	M	3A					0.040	B		7	3.5	Y	8	Westlund,M	A
14.104	818783	3.8	B	139	28	2			0.05	B		7	3.9		1	Lairret,R	
14.125	818784						2			EY			6.0		3	Martinez,C	B
14.135	818785	3.7	B	159,139	20	4			0.05	B		7	4.8C	Y	2	Lupianez,B	
14.156	818786	3.8	B	139					0.05	B		7	4.8		2	Benavides,A	
14.167	818787	3.7	B	139	26	3	0.73	48	0.05	B		7	4.2		1	Lairret,R	
14.177	818788	3.6	B	3A			0.25	10	0.035	B		7	5.0	Y	1	Stephan,C	C
14.181	818789	3.5	B	159	20	2			0.05	B		7	5.5C	Y	2	Martinez,C	
14.184	818790	3.5	B	159		2			0.05	B		7	5.5C	Y	3	Martinez,C	
14.210	818791	4.0	S	3A	16	3	0.5	0	0.05	B		7	3.5	Y	2	House,R.R	
14.215	818792	4.1	S	3A	16	2	0.3	0	0.05	B		10	3.5	Y	2	House,R.R	
14.229	818793	3.2	S	3A	18	2			0.035	B		7	3.5	Y	3	Morrison,W	D
14.243	818794	4.3	B	139					0.080	B		20	4.5	Y		Smith,D	E
14.250	818795	3.9	B	139	24	2			0.05	B		7	4.2		1	Lairret,R	
14.256	818796	3.5	B	3A	7.9	6			0.05	B		7	4.4	Y	3	Dodd,W.J	F
14.28	818797	3.2	S	5B	60	7	1.5	60	0.05	B		7	5.0	Y	2	Harrington,P	
14.333	818798	3.9	B	139	24	2			0.05	B		7	4.0		1	Lairret,R	
14.344	818799	4.3	S	3A	36	6	0.75	10	0.05	B		10	4.5C	Y	1	Gronek,J.D	G
14.375	818800	4.0	B	139	24	2			0.05	B		7	3.8		1	Lairret,R	
14.406	818801	2.3	S	5B			4	75		EY			6.1	Y	1	Seargent,D	H
14.44	818802	9.5	V	SAO					0.317	N	5	86				Jones,A	I
14.46	818803	2.4	S	5B						EY			7	Y	14	Bouma,R.J	
14.46	818804	2.6	M	5B		5			0.018	B		2	7	Y	14	Bouma,R.J	
14.46	818805	2.5	M	5B	20	5	3	357	0.063	B		9	7	Y	14	Bouma,R.J	J
14.48	818806	2.9	B	5B		6			0.05	B		10	7	Y	14	Bouma,R.J	
14.495	818807	2.4	S	159		3	2.0			EY			6.5	Y	3	Williams,P.F	
14.500	818808					12				EY			6.0	Y	8	Thompson,G	
14.52	818809	2.9	B	INW BAA	32	5	5			EY			5.5	N	1	Green,D.W.E	K
14.528	818810	3.4	S	5B	30					EY						Tregaskis,T.B	L
14.53	818811						3.67	355	0.050	B		10	6.5	Y	37	Morris,C.S	M
14.54	818812	2.8	S	5B	38	6	3.5	0		EY			6.5	Y	37	Morris,C.S	N
14.55	818813	2.8	M	5B	19	5			0.050	R		8	6.5	Y	37	Morris,C.S	
14.57	818814	2.9	B	5B	32	5	3			EY			7	Y	7	Bortle,J.E	
14.57	818815				19	5	2.0	0	0.050	B		7				Bortle,J.E	O
14.583	818816	3.2	S	3A	9	6			0.080	B		20		Y	1	Batza,H	P
14.6146	818817	2.6	M	3A	40	6	4.18	358	0.05	B		7	6.4	Y	18	Cook,A.J	Q
14.62	818818	2.6	B	5B						EY			6.5	Y		Clark,M.L	
14.625	818819	2.1	S	5B			20	80		EY			6.2	Y	1	Seargent,D	R
14.63	818820	2.1	S	5B		7	18.0			EY			6.5	Y	1	Lovejoy,T	S
14.6736	818821	2.6	M	3A	45	6	8.87	50		EY			6.4	Y	18	Cook,A.J	T
14.70	818822	2.6	M	3A						EY			3.5	Y	7	Keen,R	U
14.71	818823	2.9	B	INW BAA	35	5	5			EY						Green,D.W.E	V
14.7333	818824	3.2	S	DCS	26	6			0.080	B		20	4.6		7	Machholz,D	
14.77	818825	2.3	S	5B						EY			7	Y	14	Bouma,R.J	
14.77	818826	2.8	B	5B					0.018	B			7	Y	14	Bouma,R.J	
14.772	818827	4.2	M	3A, 5B	19	5	2	0	0.04	B		12	6.3	Y	4	Henshaw,C	W
14.78	818828	2.5	M	5B			3	3	0.063	B		9	7	Y	14	Bouma,R.J	X
14.835	818829	3.7	M	3A	19.3	6			0.12	C	10	40	5.5	Y	6	Cifuentes,E	Y
14.889	818830	3.5	M	5B	31	5	4.3	4	0.08	B		11	5.7	Y	1	Fleet,R.W	Z
14.896	818831	2.8	M	3A	36	7	3.1		0.05	B		10	6.5	Y	12	Melandri,F	a
14.90	818832	3.8	B	5B						EY			4.5		26	Shanklin,J.D	
14.913	818833	3.0	M	5B	40	4	9.3	62		EY			5.7	Y	1	Fleet,R.W	b
14.938	818834	3.9	M	5B					0.035	B		9	5.0	Y	1	Begbie,M.J.R	
14.960	818835	3.2	S	139	30	4	2	60		EY			6.5	Y	7	Havaz,R	c
14.960	818836	3.5	S	139	28	4	1.80	9	0.05	B		7	6.5	Y	7	Havaz,R	d
14.962	818837				20.6	5	6.0	20	0.30	N	8.5	102	5.0	Y	1	Begbie,M.J.R	e
14.962	818838	3.4	M	3A			1.2	21	0.040	B		7	4.0	Y	8	Westlund,M	
14.99	818839	2.7	M	INW	32	6				EY			6.0	Y	5	Granalo,B.H	
14.997	818840				11	5			0.09	M	11	56	4.0	Y	8	Westlund,M	

NOTE A Misty sky.

NOTE B Head = 1.5 deg.

NOTE C Note odd PA of 10 deg. Possibly just irregular shaped extension of coma.

NOTE D Altitude 2 deg.

NOTE E Comet elevation 10 deg.

NOTE F The coma brightness fell off very gradually at the edge. It was difficult to decide where the edge was. The actual diameter may have been greater than 7.9'. There were hints of symmetrical illumination (i.e., it was not a "tail") as much as 40'-50' across!

NOTE G Last naked eye sighting. Exc. see.

NOTE H Tail length at PA 75 is lower limit (6.5 deg.); tail length at PA 30 not specified. Cloud terminated observation.

NOTE I Nucleus.

NOTE J Gas tail at PA 357. Broad dust fan includes other tail listings.

NOTE K Coma diameter and tail length approximate.

NOTE L Coma diameter approximate. Tail doubtful.

NOTE M Tail in PA 355 is gas tail. Dust fan tail defined by edges in PA 45 and 85. Gas tail was brighter than dust tail. Leading edge of the dust fan, slightly curved toward the east, was brightest part of the fan.

NOTE N Fan tail between PAs 0 and 80. Fan was uniform in brightness.

NOTE O With 7x50 B: huge bright coma seemingly circular in outline but superimposed on fan-shaped envelope of tail. At least four bright rays emit from coma! The first is actually the gas tail pointing to PA 0 deg. and 2.0 deg. long. It has a distinct kink to the west about 1 deg. from the center of the coma. The center of the dust tail is 6.5 deg. long at PA 130. The remaining three rays are part of the dust tail at PA 20, 47 deg., and 87 deg. The leading and trailing edges of the tail are at PA 10 deg. and 80 deg. The rays in the dust tail are traceable 1.0, 1.0, and 3.0 deg. (The original report form, independent of the notes, indicates there is a kinked jet 2.0 deg. long at PA 180, a jet 0.6 deg. long at PA 170, a jet 1.0 long at PA 140, and a jet 3.0 deg. long at PA 90. Ed.)

NOTE P Hazy. Close to Omega Centauri. No tail readily apparent. (Observer gave limit as 10.5. Ed.)

NOTE Q Tail 1 at PA 358. Tail 2 greatest length at PA 50; west boundary 2.3 deg at PA 23, south boundary 3.43 deg at PA 68.

NOTE R Tail in broad fan. Tail length at PA 80 is approximate.

NOTE S Vivid nucleus + bright ion tail. Naked eye tail length.

NOTE T Tail greatest length at PA 50; west boundary 5.50 deg. at PA 21, south boundary 6.62 deg. at PA 70.

NOTE U Observation from New Zealand.

NOTE V Coma diameter and tail length approximate.

NOTE W Gas tail 2 deg. at PA 0; dust tail 1.6 deg. at PA 70.

NOTE X Gas tail at PA 3. Broad dust fan includes other tail listings.

NOTE Y Tail length 1.25 to 1.92. PA 11 to 73.

NOTE Z Gas tail at PA 4. Midpoints on dust tail: 13 deg. at PA 43; 3.0 deg. at PA 53; 5.6 deg. at PA 55. End point of dust tail: 7.8 deg. at PA 57. Type III [sic] tail at PA 93.

NOTE a Tail length is for ion tail.

NOTE b Dust tail at PA 62. Type III [sic] tail at PA 86. Suspected tail at PA 70.

NOTE c Center fan-shaped tail.

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NOTE d See drawing. West corner fan-shaped tail at PA 33, 3.23 deg. long; east corner fan-shaped tail at PA 92, 3.30 deg. long.  
 NOTE e Tail measurement refers to dust tail only.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
14.026	831120	6	0.040	B	7		5	3.5	8	Westlund,M	A
14.406	831121	0.54	0.15	N	4	68	90	6.0	9	Levy,D.H	B
14.500	831122							6.0		Thompson,G	C
14.618	831123	3	0.050	B	7		10	6.5	18	Cook,A.J	
14.736	831124		0.076	N	7.9	60			1	Freydank,E	D
14.833	831125	1.25	0.12	C	10	40	60	5.5	6	Cifuentes,E	E
14.889	831126	4	0.08	B		11		5.7	1	Fleet,R.W	F
14.958	831127	6	0.040	B		7	10	4.0	8	Westlund,M	
14.964	831128	3	0.050	B		7	5	6.5	7	Haver,R	G
14.993	831129	1.6	0.090	M	11	56	10	4.0	8	Westlund,M	

NOTE A Misty sky.

NOTE B Scale is approximate.

NOTE C Naked eye observation. Very broad, very faint, fan-shaped tail having four slightly brighter segments - one on both the northern and southern boundaries, the brightest toward Theta Cen and another suggestion of one toward the stars k, i, g Cen (on the Norton's Atlas Map 10 reproduction used for the drawing. Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D DC 6. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E Gas tail 1 deg. at PA 11. Central portion 1 deg. 55' at PA 27. Dust tail 1 deg. 15' at PA 73.

NOTE F Gas tail at PA 4. Dust tail end point at PA 57. Type III [sic] PA 93. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE G Tail at PA 9; west corner, fan-shaped tail at PA 33; east corner, fan-shaped tail at PA 92.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
14.049	851777	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	105/P	1	Sternwarte Frankfurt	A
14.112	851778	0.050	2			3.50	Kodak Tri-X	400/	N		6/P	1	Falsarella,N	
14.123	851779	0.050	2			3.50	Kodak Tri-X	400/	N		7/P	1	Falsarella,N	
14.129	851780	0.050	1.8			2.10	Kodacolor VR	400/	N		8/P	1	Falsarella,N	
14.131	851781	0.200	3.5		10.3 x 6.9	15.00	Kodak Tri-X	400/	N	X	3/P	12	Melandri,F	
14.132	851782	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	109/P	1	Sternwarte Frankfurt	B
14.135	851783	0.135	3.5		15.2 x10.2	60.00	Kodak 2415		Y	T	9/N	1	Pedersen,V.T	C
14.144	851784	0.050	1.8			3.50	Kodacolor VR	400/	N		9/P	1	Falsarella,N	
14.153	851785	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	110/P	1	Sternwarte Frankfurt	D
14.161	851786	0.050	1.8			3.00	Kodacolor VR	400/	N		10/P	1	Falsarella,N	
14.164	851787	0.050	1.8			2.50	Kodacolor VR	400/	N		11/P	1	Falsarella,N	
14.166	851788	0.135	3.5		15.2 x10.2	25.00	Kodak 2415		Y	T	11/N	1	Pedersen,V.T	
14.178	851789	0.050	1.8			3.50	Kodacolor VR	400/	N		12/P	1	Falsarella,N	
14.192	851790	0.050	2			3.00	Kodak Tri-X	400/	N		13/P	1	Falsarella,N	
14.229	851791	0.050			39.6 x27.0	0.67	Kodak VR1000	1000/	N	T	15/C	5	Priester,D.C	
14.230	851792	0.050			39.6 x27.0	0.13	Kodak VR1000	1000/	N	T	16/C	5	Priester,D.C	
14.231	851793	0.050			39.6 x27.0	0.33	Kodak VR1000	1000/	N	T	17/C	5	Priester,D.C	
14.231	851794	0.050			39.6 x27.0	0.25	Kodak VR1000	1000/	N	T	18/C	5	Priester,D.C	
14.235	851795	0.058	1.4		34.5 x23.4	0.50	Kodak Tri-X		N	T	12/C	5	Priester,D.C	E
14.236	851796	0.058	1.4		34.5 x23.4	0.25	Kodak Tri-X		N	T	13/C	5	Priester,D.C	F
14.313	851797	0.050	1.4		39.6 x27.0	0.50	Scotch Slide	1000/	N		2/P	2	Gronck,J.D	
14.323	851798	0.050	1.4		39.6 x27.0	0.58	Scotch Slide	1000/	N		4/S	2	Gronck,J.D	
14.323	851799	0.050	1.4		39.6 x27.0	0.50	Scotch Slide	1000/	N		5/S	2	Gronck,J.D	
14.344	851800	0.100	2.8		20.4 x13.7	0.50	Scotch Slide	1000/	N		10/S	2	Gronck,J.D	G
14.402	851801	0.305	1.5	0.203	6.8 x 4.5	30.00	Kodak Tri-X	400/	N	X	014/P	1	Rosenthal,D	H
14.429	851802	0.605	1.7		3.4 x 2.3	15.00	Kodak 2415		N	T	3/P	1	Levy,A	
14.439	851803	0.200	3.5		10.3 x 6.9	10.00	3M 1000	1000/	N	O	11/S	1	Haagh,N	
14.448	851804	0.200	3.5		10.3 x 6.9	10.00	3M 1000	1000/	N	O	12/S	1	Haagh,N	
14.462	851805	0.200	3.5		10.3 x 6.9	20.00	3M 1000	1000/	N	O	13/S	1	Haagh,N	
14.479	851806	0.180	2.8		11.4 x 7.6	17.00	Kodak 2415		Y	O	67/S	6	Garradd,G	I
14.489	851807	0.200	3.5		10.3 x 6.9	20.00	3M 1000	1000/	N	O	14/S	1	Haagh,N	
14.712	851808	0.050	1.8		39.6 x27.0	24.00	Agfachrome	1000/	N	S	24/P	18	Cook,A.J	
14.774	851809	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	31/C	5	Cimatti,A	
14.782	851810	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	32/C	5	Cimatti,A	
14.799	851811	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	111/P	1	Sternwarte Frankfurt	B
14.802	851812	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	33/C	5	Cimatti,A	
14.810	851813	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	34/C	5	Cimatti,A	
14.819	851814	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	112/P	1	Sternwarte Frankfurt	A
14.831	851815	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	35/C	5	Cimatti,A	
14.840	851816	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	113/P	1	Sternwarte Frankfurt	B
14.844	851817	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	36/C	5	Cimatti,A	
14.855	851818	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	37/C	5	Cimatti,A	
14.861	851819	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	114/P	1	Sternwarte Frankfurt	A
14.866	851820	0.180	2.8		11.4 x 7.6	10.00	Kodak 103a-O		N	O	38/C	5	Cimatti,A	
14.877	851821	0.225	1.7	0.140	9.1 x 6.1	6.00	Kodak 2415		Y		125/P	3	Koch,B	J
14.882	851822	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	115/P	1	Sternwarte Frankfurt	B
14.890	851823	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	39/C	5	Cimatti,A	
14.893	851824	0.080	4.5		25.4 x17.1	16.00	Agfa 1000 RS	1000/	N	T	619/S	2	Jones,B.W	K
14.897	851825	0.110	2		18.6 x12.5	20.00	Fujichrome	400/	N	O	4/P	2	Martinez,P	L
14.903	851826	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	116/P	1	Sternwarte Frankfurt	A
14.907	851827	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	40/C	5	Cimatti,A	
14.913	851828	0.135	4.5		15.2 x10.2	8.00	Agfa 1000 RS	1000/	N	T	622/S	2	Jones,B.W	M
14.920	851829	0.225	1.7	0.139	9.1 x 6.1	20.00	Kodak 2415		Y	S	14/P	2	Martinez,P	
14.924	851830	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	117/P	1	Sternwarte Frankfurt	B
14.939	851831	0.050	2.8		39.6 x27.0	5.00	Ektachrome	400/	N	M	516/P	1	Stolzen,P	N
14.946	851832	0.135	2.8		15.2 x10.2	5.00	Ektachrome	400/	N	M	518/P	1	Stolzen,P	N
14.975	851833	0.225	1.7	0.140	9.1 x 6.1	10.00	Kodak 2415		Y		131/P	3	Koch,B	J

NOTE A Photograph made by N. Diehl. Push processed to 2000 ISO.

NOTE B Photograph made by V. Heinrich. Push processed to 2000 ISO.

NOTE C Wratten 2B and 47A filters used.

NOTE D Photograph made by P. Engel. Push processed to 2000 ISO.

NOTE E Push processed to 800 ASA.

NOTE F Start time uncertain. Push processed to 800 ASA.

NOTE G Auxiliary lens used. Original instrument characteristics are FL = 0.050, f/1.4.

NOTE H Instrument is Schmidt camera.

NOTE I Temperature for hypersensitization 60-65 deg. C.

NOTE J (Observer's image identifier preceded by prefix 100/. Ed.)

NOTE K (Observer's image identifier is Agfa/6/19. Ed.)

NOTE L Hasselblad camera used. (Probably large format, 120 size. Ed.)

NOTE M (Observer's image identifier is Agfa/6/22. Ed.) FL = 135 is an approximate setting on the zoom lens.

NOTE N (Observer's image identifier is preceded by prefix 2. Ed.)

DATE: 15 APR 1986

DATE: 15 APR 1986

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	818841				30	6	1.9	13	0.035	B		7	6.0	Y	5	Granslo, B.H	
15.069	818842	4.0	B	3A		6	1		0.06	R	8	15	4.5	Y	2	Schambeck, C.M	A
15.104	818843	4.0	B	139	20	2			0.05	B		7	3.8			Lairret, R	
15.124	818844			3A		9			0.362	N	5	145	4.0	Y	1	Stephan, C	B
15.125	818845	3.7	B	139					0.05	B		7	5.0C	Y	2	Lupianez, B	
15.148	818846	3.0	B	5B, 3A	48	5	3.4	13		EY			6.0	Y	8	Linder, J	C
15.148	818847			5B, 3A			1			EY			6.0	Y	8	Linder, J	D
15.169	818848	3.7	B	3A		2			0.03	B		8	4.3C	Y	2	Giraudi, J.D	
15.174	818849	3.6	B	3A		2			0.03	B		8	4.3C	Y	2	Giraudi, J.D	
15.180	818850	3.4	B	3A		2			0.03	B		8	4.3C	Y	2	Giraudi, J.D	
15.3361	818851	2.8		DCS	50	6	4.40	48		EY			5.8		8	Machholz, D	E
15.378	818852	3.6	B	3A		7			0.08	R	6.3	16	6	Y	4	Burch, J.Q	
15.378	818853			3A	23.0	7	1.53	23	0.08	R	6.3	19	6	Y	4	Burch, J.Q	F
15.42	818854	2.6	M	3A						EY			7.0	Y	8	Keen, R	G
15.427	818855	2.7	S	3A						EY			5.5C	Y	6	Garradd, G	
15.427	818856	2.2	S	5B			10			EY			6	Y	1	Seargent, D	H
15.478	818857	4.0	B	139		3			0.050	B		20	5.6	Y	1	Castrillon, M.E	
15.49	818858	2.6	M	5B	18	6	4.5	18	0.063	B		9	7	Y	14	Bouma, R.J	I
15.49	818859	2.4		5B						EY			7	Y	14	Bouma, R.J	
15.49	818860	2.9	B	5B					0.018	B		2	7	Y	14	Bouma, R.J	
15.49	818861	3.7	B	3A		2			0.050	B		7	4.6CM	Y	1	Matchett, V	
15.495	818862	3.0	S	159		3				EY			6.5	Y	3	Williams, P.F	
15.50	818863	2.9	B	3A		4	3			EY			7	Y	7	Bortle, J.E	
15.50	818864				36	5	3.3	12	0.050	B			7	Y		Bortle, J.E	J
15.50	818865	3.0	B	IHW BAA	41	4	5			EY						Green, D.W.E	K
15.52	818866						4.75	18	0.050	B		10	5.5	Y	37	Morris, C.S	L
15.52	818867	2.8		5B			4.83	15		EY			5.5	Y	37	Morris, C.S	M
15.52	818868	2.8	M	5B	26	5			0.050	R		8	5.5	Y	37	Morris, C.S	
15.55	818869	2.7	B	3A						EY			5.9	Y		Clark, M.L	N
15.56	818870	3.6	S	3A	32	7	3.0	70	0.25	N	5	38	5.9	Y		Clark, M.L	N
15.5708	818871	2.9	M	3A	40	6	5.9	20	0.05	B		7	6.4	Y	18	Cook, A.J	O
15.5833	818872	2.9	M	3A			11.67	93		EY			6.4	Y	18	Cook, A.J	P
15.6410	818873	3.0	S	DCS	23	8	2.63	35	0.080	B		20	5.4	Y	7	Machholz, D	Q
15.65	818874	2.9	B	5B	45	4				EY			5.6	Y		Pearce, A	
15.65	818875	3.0	B	5B	27	7	3.0	20	0.030	B		8	5.6	Y		Pearce, A	
15.65	818876			5B			4.2	93	0.030	B		8	5.6	Y		Pearce, A	
15.658	818877	3.0	S	3A	40	5	4	90	0.07	B		10	2.5	Y	1	Kobayashi, J	
15.67	818878				40	5	12	50		EY			7.0	Y	8	Keen, R	R
15.69	818879	3.1	S	3A, 139	30	5			0.023	B		3	5.7			Jones, A	
15.69	818880					7	1.5		0.050	B		7				Jones, A	S
15.69	818881						0.7		0.078	R	7.5	30				Jones, A	T
15.72	818882	8.6	V	SAO					0.317	N	5	86				Jones, A	U
15.73	818883	2.0		5B			24.5			EY			6.3	Y	1	Lovejoy, T	V
15.750	818884	3.6	B	3A, 5B	40	5	5	60	0.05	B		7	5.3	Y	2	Vincent, J	W
15.79	818885	2.3		5B		4				EY			7	Y	15	Bouma, R.J	
15.823	818886	3.8	M	3A	24	8	2.33		0.12	C	10	40	6	Y	1	Bernabeu, M	X
15.853	818887	3.8	M	3A	17.6	7			0.12	C	10	40	5.0	Y	6	Cifuentes, E	Y
15.910	818888	4.0	M	3A					0.05	B		12		Y	2	Tanti, T	Z
15.921	818889	3.8	M	5B, 3A					0.035	B		9	6.2	Y	1	Begbie, M.J.R	
15.938	818890	3.7	M	3A	31	6	2.8	31	0.08	B		11	5.7	Y	1	Fleet, R.W	a
15.942	818891						9.5	15	0.035	B		9	6.2	Y	1	Begbie, M.J.R	
15.942	818892				19.1	6			0.30	N	8.5	102	6.2	Y	1	Begbie, M.J.R	
15.958	818893	2.5	M	3A	42	8	4.0		0.05	B		10	6.0	Y	12	Melandri, F	b
15.958	818894	3.1	M	5B	40	4	3.5	39		EY			5.7	Y	1	Fleet, R.W	c

NOTE A PA 23 to 40.

NOTE B Stellar pin point nucleus. Large diffuse coma. No tail visible.

NOTE C Type I tail.

NOTE D Type II tail broad fan. Tail length is lower limit.

NOTE E Fan-shaped tail: PA 36 to 61.

NOTE F The visual tail was very wide so I have indicated the PA and length for the edges.

NOTE G Observation from New Zealand.

NOTE H Tail length approximate.

NOTE I Gas tail at PA 18. Broad dust fan from PA 28 to 92, 4 deg. long.

NOTE J Tail distinctly changed again! Tail straighter and narrower than last night, now subtending about 45 deg. instead of 90 deg. in PA. Coma circular and larger in diameter than intersecting sides of tail, the coma seemingly superimposed on the latter. Bright center of dust tail traceable 9.0 deg. in PA 57 with leading and following edges of tail at PA 22 and 87. Gas tail extends 3.3 deg. in PA 12.

NOTE K Coma diameter and tail length approximate.

NOTE L Multiple tails define the shape of the fan tail. Edges of fan were brightest with trailing edge brighter than leading edge. No structure was visible in the dust fan.

NOTE M Multiple tails define the shape of the fan tail. The center of the dust fan was most pronounced to the NE.

NOTE N Street lights.

NOTE O Tail 1 at PA 20. Tail 2 greatest length at PA 67; north boundary 8.87 deg. at PA 42, south boundary 6.5 deg. at PA 96.

NOTE P Tail greatest length at PA 67; north boundary 7.93 deg at PA 43, south boundary 7.35 at PA 93.

NOTE Q Two tails: the first at PA 35 to 36, the second at PA 86 to 96.

NOTE R Broad tail PA 10-80.

NOTE S Perhaps segment of tail PA 85 degrees to 95 degrees influenced by group of faint stars. Tail PA 22-95.

NOTE T Broad diffuse fan. Tail PA 22-58.

NOTE U Nucleus.

NOTE V Ion tail less prominent. Naked eye tail length. Coma diameter through 15x80 binoculars: 25'.

NOTE W Comp. star Nu 3.4. Fan tail 50 deg.

NOTE X (Observer lists two PA values: 20 and 108. Ed.)

NOTE Y Tail length 2.5 to 3.5 deg. PA 33 to 66.

NOTE Z Clouds. Haze. Wind.

NOTE a Gas tail at PA 31. Midpoints on dust tail: 2.0 deg. at PA 59; 3.7 deg. at PA 60; 6.5 deg. at PA 64. End point of dust

tail: 9.2 deg. at PA 68. Type III [sic] tail at PA 95.

NOTE b The angle is about 60 deg. Tail length is for ion tail.

NOTE c Dust tail (1) at PA 39. Main dust tail at PA 63. Suspected tail: 12 deg. at PA 72. Type III [sic] tail at PA 81.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
15.385	831130	0.54	0.15	N	4	68	30	6.0	9	Levy, D.H	A
15.574	831131	3	0.050	B		7	8	6.5	18	Cook, A.J	
15.840	831132	1.36	0.12	C	10		100	6	1	Bernabeu, M	B
15.849	831133	1.82	0.12	C	10	40	75	5.0	6	Cifuentes, E	C
15.938	831134	4	0.08	B		11		5.7	1	Fleet, R.W	D
15.978	831135	3.08	0.035	B		9	16	6.2	1	Begbie, M.J.R	E

DATE: 15 APR 1986

DATE: 15 APR 1986

NOTE A Scale is approximate.

NOTE B Coma 24 arc min. Tail 2 deg. 20 min. PA 20-108.

NOTE C Gas tail 1 deg. 50' at PA 33. Central portion 3 deg. 30' at PA 47. Dust tail 2 deg. 30' at PA 66.

NOTE D Gas tail at PA 31. Dust tail end point at PA 68. Type III [sic] at PA 95. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E Type III tail at PA 100; type I tail at PA 30. An aesthetically pleasing view, but also evidence for Halley's visual faintness. The tail is traceable for 9-10 degrees, but is very broad and fanlike. The gas tail is noticeably shorter and weaker. The effect of the Milky Way is only clear now that Halley has moved out of it. The tail is approximately 4 times longer than on the 9th April!

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ADN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
15.008	851834	0.225	1.7	0.139	9.1 x 6.1	20.00	Kodak 2415		Y	O	20/P	2	Martinez,P	A
15.010	851835	0.050	1.8		39.6 x27.0	8.00	Kodak Tri-X	400/	N	T	6/P	2	Jones,B,W	B
15.012	851836	0.050	2.8		39.6 x27.0	5.00	Ektachrome	400/	N	M	520/P	1	Stolzen,P	C
15.021	851837	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	8/P	2	Jones,B,W	B
15.030	851838	0.050	1.8		39.6 x27.0	8.00	Kodak Tri-X	400/	N	T	10/P	2	Jones,B,W	B
15.037	851839	0.300	1.5	0.200	6.9 x 4.6	7.00	Kodak 2415		Y		101/P		Jager,M	
15.043	851840	0.135	2.8		15.2 x10.2	5.00	Ektachrome	400/	N	M	521/P	1	Stolzen,P	C
15.054	851841	0.300	1.5	0.200	6.9 x 4.6	25.00	Agfa Ortho	25/	Y		102/P		Jager,M	D
15.059	851842	0.200	2		10.3 x 6.9	10.00	Kodak 103a-O		N	S	24/P	2	Dragesco,J	
15.060	851843	0.080	4.5		25.4 x17.1	16.00	Agfa 1000 RS		N		706/S	2	Jones,B,W	E
15.070	851844	0.050	1.8		39.6 x27.0	8.00	Kodak Tri-X	400/	N	T	11/P	2	Jones,B,W	B
15.080	851845	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	12/P	2	Jones,B,W	B
15.082	851846	0.050	1.8		39.6 x27.0	5.00	Fujichrome	400/	N	O	56/P	8	Linder,J	F
15.082	851847	0.085	2.0		23.9 x16.1	5.00	Ektachr.P800	800/	N	O	57/P	8	Linder,J	
15.093	851848	0.200	2.8		10.3 x 6.9	5.00	Fujichrome	400/	N	O	58/P	8	Linder,J	
15.100	851849	0.135	3.5		15.2 x10.2	60.00	Kodak 2415		Y	T	12/N	1	Pedersen,V.T	G
15.112	851850	0.200	2.8		10.3 x 6.9	10.00	Fujichrome	400/	N	O	59/P	8	Linder,J	
15.129	851851	0.050	1.8		39.6 x27.0	16.00	Kodak Tri-X	400/	N	T	14/P	2	Jones,B,W	H
15.133	851852	0.135	3.5		15.2 x10.2	30.00	Kodak 2415		Y	T	13/N	1	Pedersen,V.T	I
15.163	851853	0.135	3.5		15.2 x10.2	30.00	Kodak 2415		Y	T	14/N	1	Pedersen,V.T	
15.188	851854	0.200	4		10.3 x 6.9	30.00	Kodak 2415		Y	T	15/N	1	Pedersen,V.T	
15.212	851855	0.150	3.8		13.7 x 9.1	10.00	Fuji	1600/	N	X	4/P	1	Lamb,J.F	
15.309	851856	0.300	1.5	0.200	6.9 x 4.6	4.00	Kodak 2415		Y	S	17/P	3	Yen,B	J
15.344	851857	0.305	1.5	0.203	6.8 x 4.5	30.00	Kodak Tri-X	400/	N	X	015/P	1	Rosenthal,D	A
15.419	851858	0.180	2.8		11.4 x 7.6	15.00	Kodak 2415		Y	O	68/S	6	Garradd,G	K
15.453	851859	0.200	3.5		10.3 x 6.9	30.00	Kodak 2415		N	O	45/N	1	Haagh,N	
15.490	851860	0.750	5	0.150	2.7 x 1.8	20.00	Kodak 2415		N		46/N	1	Haagh,N	
15.605	851861	0.229	1.7	0.140	9.0 x 6.0	1.00	3M 1000	1000/31	N	X	005/P	4	Allen,M.T	
15.610	851862	0.229	1.7	0.140	9.0 x 6.0	2.00	3M 1000	1000/31	N	X	006/P	4	Allen,M.T	
15.619	851863	0.229	1.7	0.140	9.0 x 6.0	4.00	3M 1000	1000/31	N	X	007/P	4	Allen,M.T	
15.670	851864	0.229	1.7	0.140	9.0 x 6.0	8.00	3M 1000	1000/31	N	X	008/P	4	Allen,M.T	
15.799	851865	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	41/C	5	Cimatti,A	
15.810	851866	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	42/C	5	Cimatti,A	
15.818	851867	0.180	2.8		11.4 x 7.6	8.00	Kodak 103a-O		N	O	43/C	5	Cimatti,A	
15.820	851868	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	119/P	1	Sternwarte Frankfurt	L
15.831	851869	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	44/C	5	Cimatti,A	
15.840	851870	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	120/P	1	Sternwarte Frankfurt	M
15.841	851871	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	45/C	5	Cimatti,A	
15.851	851872	0.200	2		10.3 x 6.9	10.00	Kodak Tri-X	400/	N	S	25/P	2	Dragesco,J	
15.858	851873	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	46/C	5	Cimatti,A	
15.861	851874	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	121/P	1	Sternwarte Frankfurt	L
15.876	851875	0.225	1.7	0.139	9.1 x 6.1	20.00	Kodak 2415		Y	O	021/P	1	Bonnet,M.C	A
15.878	851876	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	47/C	5	Cimatti,A	
15.882	851877	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	122/P	1	Sternwarte Frankfurt	M
15.888	851878	0.050	1.8		39.6 x27.0	6.00	Ilford HP5	400/27	N	O	508/P	2	Abbott,J	N
15.889	851879	0.180	2.8		11.4 x 7.6	12.00	Kodak 103a-O		N	O	48/C	5	Cimatti,A	
15.903	851880	0.608	6		3.4 x 2.3	20.00	Agfa 1000 RS		N	M	123/P	1	Sternwarte Frankfurt	L
15.935	851881	0.608	6		3.4 x 2.3	28.00	Agfa 1000 RS		N	M	124/P	1	Sternwarte Frankfurt	M
15.949	851882	0.240	4.5		8.6 x 5.7	16.00	Ilford HP5	400/27	N	O	513/P	2	Abbott,J	O
15.962	851883	0.050	1.8		39.6 x27.0	10.00	Agfapan XL	1600/	N	X	4/P	12	Melandri,F	
15.970	851884	0.608	6		3.4 x 2.3	40.00	Agfa 1000 RS		N	M	125/P	1	Sternwarte Frankfurt	M

NOTE A Instrument is Schmidt camera.

NOTE B Small amount of cloud and haze, but heavy condensation, so this set interlaced with T70 with 1000RS, to dry lenses in car boot. Film roll Tri-X/8.

NOTE C (Observer's image identifier is preceded by prefix 2. Ed.)

NOTE D Magnitude 2.5.

NOTE E Slight haze on lens at end of exposure. Film push processed to 2000 ISO. (Observer's image identifier is Agfa/7/6. Ed.)

NOTE F Start time approximate.

NOTE G Wratten 2B and 47A filters used.

NOTE H M83 in field of view. Small amount of cloud and haze, but heavy condensation, so this set interlaced with T70 with 1000RS, to dry lenses in car boot. Film roll Tri-X/8.

NOTE I Wratten 21 filter used.

NOTE J (Observer's image identifier is 6. Ed.) Instrument is Schmidt camera.

NOTE K Cloud drifted through field, illuminated by city lights. Temperature for hypersensitization 60-65 deg. C.

NOTE L Photograph made by N. Diehl. Push processed to 2000 ISO.

NOTE M Photograph made by P. Engel. Push processed to 2000 ISO.

NOTE N (Observer's image identifier is 25, 8A. Ed.)

NOTE O (Observer's image identifier is 25, 13A. Ed.)

DATE: 16 APR 1986

DATE: 16 APR 1986

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
16.02	818895	3.1	M	IHW	25	6			0.035	B		7	4.5	Y	5	Granslo,B.H	A
16.090	818896	3.2	B	139		5			0.05	B		20	5.0	Y	1	da Silva,L.A.L	
16.134	818897	3.7		3A						EY			5.0	N	1	Levai,R	B
16.156	818898	4.0	B	3A		7			0.06	R	8	15	4.0	Y	2	Schambeck,C.M	
16.167	818899	3.2	B	AAVSO	60	3	1.5	45	0.04	B		10	5.2	Y	2	Alves,A.A	
16.201	818900	3.1	B	139					0.05	B		7	5		2	Galli,A	
16.42	818901	2.8	M	3A			11	60		EY			6.5	Y	9	Keen,R	C
16.425	818902	1.9	S	159		3				EY			6.5	Y	3	Williams,P.F	
16.4424	818903	2.8		DCS	55	5	2.70	59		EY			6.2	Y	9	Machholz,D	D
16.451	818904	3.8		3A	30	3				EY			5	N	1	Tregaskis,T.B	A
16.453	818905			3A	15	9			0.15	N	8	64		N	1	Tregaskis,T.B	E
16.48	818906	2.4	B	3A			4	35		EY			5.5	Y	39	Hale,A	F
16.48	818907						4.5	35	0.05	B		10	5.5	Y	39	Hale,A	F
16.500	818908	3.0	S	3A	12	8	2	240	0.080	B		20		Y	1	Batza,H	G
16.517	818909	2.5	S	3A			15.5	60		EY						Seargent,D	
16.521	818910				30		15			EY			6.0	Y		Thompson,G	
16.56	818911	2.5	SB			4	10	62		EY			6.5	Y	17	Bouma,R.J	H
16.57	818912	2.7	M	SB	15	6	4	34	0.05	B		10	6.5	Y	17	Bouma,R.J	I
16.57	818913	3.0	B	SB		4				EY			5.6	Y		Pearce,A	
16.57	818914	3.0	S		15	6			0.05	B		10	3.5	Y	1	Uda,K	
16.59	818915	3.0	B	IHW BAA	46	4				EY						Green,D.W.E	A
16.59	818916				13	5	6.0		0.050	B		10	5.5	Y	33	Morris,C.S	
16.59	818917	4.1	S	3A	15	6			0.07	B		10	4.0M	Y	1	Yasuki,M	
16.60	818918	3.3	M	3A			2.0		0.05	B		7	4.0M	Y	1	Suzuki,K	
16.60	818919			3A	7.5	3			0.25	B	4.2	88	4.0M	Y	1	Suzuki,K	J
16.61	818920				19	5	3.2		0.050	B		7				Bortle,J.E	K
16.61	818921	3.1	B	3B	36	4				EY			5.5	Y	5	Bortle,J.E	
16.625	818922	3.7	B	3A	17				0.035	B		7		N	1	Okada,M	
16.66	818923	4.1	M	3A	13.4	5			0.080	B		11	3.5	Y	2	Watanabe,N	
16.663	818924	3.7	B	3A	21	6	4		0.070	B		10	6.0	Y	4	Nakamura,Y	
16.67	818925	3.1	S	3A, 139	22	5			0.023	B		3	5.1			Jones,A	
16.67	818926				16	7	0.5		0.050	B		7				Jones,A	L
16.71	818927	9.5	V	SAO					0.317	N	5	86				Jones,A	M
16.78	818928	4.2	B	M	15	9			0.05	B		7				Konstantinov,S	
16.858	818929	3.7	M	3A	30	6	3.2	37	0.08	B		11	5.6	Y	1	Fleet,R.W	N
16.861	818930	3.2	M	3A	40	4	5.7	69		EY			5.6	Y	1	Fleet,R.W	
16.87	818931	4.0	M	3A	10	3			0.05	B		7				Keszthelyi,S	O
16.8771	818932	3.8	B	3A	35	6	3	100	0.05	B		7	5.1	Y	2	Vincent,J	P
16.905	818933	3.2	S	139	30	4	3.0	75		EY			6.6	Y	7	Haver,R	Q
16.910	818934	3.3	S	139	26	4	3.27	38	0.05	B		7	6.6	Y	7	Haver,R	R
16.941	818935	4.0	M	3A	18	7			0.089	R	5.5	18	5.5	N	1	Ventura,F	S
16.943	818936	3.4	B	139	8	2	0.8	130	0.06	R	12	56	5.7	Y	1	Onofre D.,D	
16.99	818937	2.8	M	IHW	30	6				EY			5.5	Y	5	Granslo,B.H	

NOTE A Coma diameter approximate.

NOTE B Observation with my naked eye.

NOTE C New Zealand.

NOTE D Fan-shaped tail: PA 41 to 77.

NOTE E Almost stellar-like condensation. Through cloud. (Observer gave limit as approximately 11.5. Ed.)

NOTE F Some local light pollution, but effects on observation probably negligible.

NOTE G (Observer gave limit as 11.0. Ed.)

NOTE H Dust tail. Tail length exceeds value given.

NOTE I Gas tail at PA 34. Broad dust fan from PA 43 to 94, 4 deg. long.

NOTE J Meter. (Coma diameter. Ed.) Instrument is Wright-Schmidt.

NOTE K Tail increasingly more cone-shaped, edges at PA 45 and 95. Tail's southern edge brighter and can be traced further than northern (perhaps really a long jet-like feature).

NOTE L Tail strongest PA 35 degrees to 75 degrees, suspected PA 75 degrees to 105 degrees in binoculars of 2.3 cm and 5.0 cm.

NOTE M Nucleus.

NOTE N Gas tail at PA 37. Midpoint on dust tail: 2.5 deg. at PA 65. End point of dust tail: 5.7 deg. at PA 69. Type III [sic]

tail at PA 100.

NOTE O Moon!

NOTE P Fan tail 60 deg. included angles. Centre PA 100.

NOTE Q Center fan-shaped tail.

NOTE R See drawing. West corner fan-shaped tail at PA 54, 4.47 deg. long, east corner fan-shaped tail at PA 93, 4.40 deg. long.

NOTE S The coma appears definitely bluish-white and the fuzzy central condensation is orange-yellow.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
16.002	831136	0.20	0.30	N	8.5	102,212	23	6.2	1	Begbie,M.J.R	A
16.057	831137						5		1	Zanette,D	B
16.358	831138	0.54	0.15	N	4	68	30	6.0	9	Levy,D.H	C
16.458	831139		0.080	B		20		6.0	3	Thompson,G	D
16.858	831140	4	0.08	B		11		5.6	1	Fleet,R.W	E
16.867	831141	0.97	0.050	B		7	13	4.0	7	Keszthelyi,S	
16.910	831142	3	0.050	B		7	10	6.6	7	Haver,R	F

NOTE A Gas tail at PA 350-15. Fan centred at PA 180. Vertex distance 5 arc min.; semi latus rectums P1 = 6.2 arc min., P2 = 12.8 arc min. Diffuse, broad fan near central condensation. A short spike of material is slightly brighter and lies within the gas tail.

NOTE B Drawing made from a negative exposed 5 minutes on Agfapan 400 ASA, 50 mm lens. The large number of stars seen on the negative are depicted as they appear in the Atlas Coeli. The maximum magnitude estimated on the negative is approximately 8. There are now three tails which have recovered a little in length. Tail I is short and wide; tail II is long and narrow; tail III is short and narrow; coma it see clearly to the tails. [sic] (Translated by IHW staff. Ed.) Scale = 12.1"/mm.

NOTE C Scale is approximate.

NOTE D (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E Gas tail at PA 37. Dust tail end point at PA 69. Type III [sic] at PA 100. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE F Tail at PA 38; west corner, fan-shaped tail at PA 54; east corner, fan-shaped tail at PA 93.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
16.087	851885	0.135	2.8		15.2 x10.2	10.00	Ektachrome	400/	N	M	524/P	1	Stolzen,P	A
16.168	851886	0.135	3.5		15.2 x10.2	24.00	Kodak 2415		Y	T	16/N	1	Pedersen,V.T	
16.271	851887	0.050	1.8		39.6 x27.0	1.00	3M 1000	1000/	N		1/S	1	Madenberg,J	
16.452	851888	0.050			39.6 x27.0	0.68			N		0/P	1	Muller,R.D	B
16.459	851889	0.050			39.6 x27.0	0.88			N		00/P	1	Muller,R.D	B
16.525	851890	0.180	2.8		11.4 x 7.6	17.00	Kodak 2415		Y	O	69/S	6	Garradd,G	C

DATE: 16 APR 1986

DATE: 16 APR 1986

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
16.885	851891	0.225	1.7	0.139	9.1 x 6.1	20.00	Kodak 2415		Y	O	022/P	1	Bonnet,M.C	D

NOTE A (Observer's image identifier is preceded by prefix 2. Ed.)

NOTE B (Camera lens focal length estimated by Editor from submitted prints. Lens f/ uncertain. Ed.)

NOTE C Temperature for hypersensitization 60-65 deg. C.

NOTE D Instrument is Schmidt camera.

DATE: 17 APR 1986

DATE: 17 APR 1986

## 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	818938				25	7	1.7	32	0.035	B		7	5.5	Y	5	Granslo,B.H	
17.02	818939	3.3	B	3A						EY			6.0		27	Shanklin,J.D	
17.042	818940	3.7	B	3A	17	5	1.6		0.06	R	8	15	5.5M	Y	4	Schambeck,C.M	A
17.09	818941	3.9	M	3A					0.040	B		7	4.0	Y	8	Westlund,M	
17.090	818942				8	5			0.09	M	11	56	4.0	Y	8	Westlund,M	
17.122	818943	3.5	B	138	24	6			0.05	B		20	5.0	Y	1	da Silva,L.A.L	
17.215	818944	3.3	B	139					0.05	B		7	5.5		2	Galli,A	
17.222	818945	3.1	B	139					0.05	B		7	5.5		2	Galli,A	
17.410	818946	2.7	S	159		3				EY			6.0	Y	3	Williams,P.F	B
17.448	818947	2.8	S	3A						EY			M	N	1	Seargent,D	
17.45	818948	3.0	S	3A, 138	33	6			0.023	B		3	5.8			Jones,A	C
17.45	818949					6	1.3		0.050	B		7				Jones,A	D
17.45	818950					8			0.078	R	7.5	30				Jones,A	
17.47	818951	3.7	B	3A		2			0.050	B		7	4.6CM	Y	1	Matchett,V	
17.54	818952	2.3	5B				18.0			EY			6.7	Y	1	Lovejoy,T	E
17.56	818953	3.0	B	5B		4				EY						Pearce,A	
17.61	818954	3.1	B	IHW BAA						EY						Green,D.W.E	
17.70	818955	3.0	B	3A						EY			6.9	Y		Clark,M.L	
17.72	818956	3.3	S	3A	35	7			0.076	B	8	15	6.9	Y		Clark,M.L	
17.73	818957	3.6	S	3A	30	7	8.1		0.25	N	5	38	6.9	Y		Clark,M.L	F
17.81	818958	4.4	B	M	13	9			0.05	B		7				Konstantinov,S	
17.84	818959	4.2	M	3A	12	2	0.3	310	0.05	B		7				Keszthelyi,S	G
17.965	818960	3.5	B	139	8	2	1	130	0.06	R	12	56	5.7	Y	1	Onofre D.,D	

NOTE A 1.6 deg. tail: ion tail western border, PA 28-109. 2.2 deg. tail: dust tail eastern border. Both tails not separated.

NOTE B Tail north edge 14 deg. long at PA 67, tail south edge 7 deg. long at PA 85.

NOTE C Moonglow fading NW.

NOTE D Tail suspected 3.8 deg. Tail PA 65-93.

NOTE E Naked eye tail length.

NOTE F PA of 8.1 deg. tail is 79-70.

NOTE G Moon!

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
17.087	831143	1.6	0.090	M	11	56	10	4.0	8	Westlund,M	
17.161	831144	0.25	0.20	N	8	120	45	6	1	Vargas B.,A.G	A
17.842	831145	0.93	0.106	R	5.7	24	26	5.0	8	Keszthelyi,S	

NOTE A Tail at PA 87 approx.; tail at PA 0 approx. Tail is very bright and remarkable, but there is a diffuse and open tail "B" in drawing. There is a more remarkable tail than before. The tail appear very wide, I estimate 110 deg. wide approx. DC 6, coma diameter: 12' approx.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
17.060	851892	0.300	1.5	0.200	6.9 x 4.6	5.00	Kodak 2415		Y		4/P	4	Jager,M	A
17.189	851893	0.050	2.0			3.50	Kodak Tri-X	400/	N	C	15/P		Falsarella,N	
17.193	851894	0.135	3.5		15.2 x10.2	35.00	Kodak 2415		Y	T	17/N	1	Pedersen,V.T	
17.933	851895	0.300	1.5	0.203	6.9 x 4.6	20.50	Kodak 2415		Y	T	020/P	1	Berge,P.M	B

NOTE A Magnitude 3.0.

NOTE B Photograph made by G. Mahoux and P.M. Berge.



DATE: 18 APR 1986

DATE: 18 APR 1986

## 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
18.067	818961	3.9	M	3A					0.035	B		9	5.0M	Y	1	Begbie,M.J.R	
18.087	818962	3.5	B	138	50	4			0.05	B		20	4.5	Y	1	da Silva,L.A.L	A
18.113	818963				13.5	6		60	0.30	N	8.5	102	5.0M	Y	1	Begbie,M.J.R	B
18.113	818964	3.7	B	3A					EY				6.5		28	Shanklin,J.D	
18.156	818965	5.4	S	3A	3.0	8			0.203	N	6	101	4.9M	Y	1	Budak,D.M	
18.167	818966	3.6	B	139, 3B	20		1	67	0.040	B		8	5.6	Y	1	Levai,R	C
18.175	818967	3.4	S	3A	20	4			0.05	B		7	5 M	Y	2	House,R.R	D
18.176	818968	3.8	S	3A	23	4	0.27	40	0.035	B		7	4.5	Y	3	Morrison,W	E
18.212	818969	2.8	B	3A	5.9	3			0.140	SN	3.6	28	2.1	Y	1	Rousom,J	F
18.220	818970	3.2	S	3A	23	4			0.05	B		7	5 M	Y	2	House,R.R	G
18.220	818971	3.5	S	3A	15	3			0.05	B		10	5 M	Y	2	House,R.R	H
18.222	818972	2.8	B	3A	4	3			0.127	SC	10	50	2.1	Y	1	Rousom,J	F
18.281	818973	4.5	S	3A	33	5			0.05	B		10	3.5MC	Y	1	Gronek,J.D	I
18.38	818974	2.7	M	3A					EY				5.0	Y	10	Keen,R	J
18.42	818975	3.1	S	3A, 138	18	5			0.023	B		3	5.1			Jones,A	K
18.42	818976					2			0.050	B		7				Jones,A	L
18.42	818977	9.1	V						0.317	N	5	86				Jones,A	M
18.58	818978	2.9	B	IHW BAA	46	3	10		EY							Green,D.W.E	N
18.58	818979	3.2	M	3A, 5B	18	5	11.5	65	0.050	B		10	5.5	Y	33	Morris,C.S	
18.59	818980	3.0	S	3B	48	4	12.5	90	EY				5.5	Y	5	Bortle,J.E	
18.59	818981				17	5	5		0.050	B		7				Bortle,J.E	O
18.59	818982	3.0		3A, 5B		4	17	65	EY				5.5	Y	33	Morris,C.S	
18.620	818983	2.7	S	159		3			EY				6.5	Y	3	Williams,P.F	
18.625	818984	2.8	S	3A			23	65	EY				6.3	Y	1	Seargent,D	P
18.67	818985	2.4		5B		3	20		EY				6.5	Y	18	Bouma,R.J	Q
18.67	818986	2.6	M	5B	17	5	3.5	45	0.05	B		10	6.5	Y	18	Bouma,R.J	R
18.67	818987	2.5		5B			22.5		EY				6.3	Y	1	Lovejoy,T	S
18.674	818988	5.3	B		6	4			0.060	R	16	50	5.1	Y	1	Bagla,J.S	
18.674	818989				30		20		EY				6.5	Y		Thompson,G	T
18.704	818990	2.7	S	3A			20		EY				6.5	Y	2	Garradd,G	U
18.73	818991	3.1	B	3A					EY				6.7	Y		Clark,M.L	V
18.74	818992	3.0	B	3A	30	5	16	85	EY				6.0	Y	10	Keen,R	J
18.750	818993	2.9	B	3A		6	5.0		0.05	B		7	6.0	Y	4	Bembrick,C	W
18.75	818994	3.6	S	3A	28	7	6.4		0.25	N	5	38	6.7	Y		Clark,M.L	X
18.8958	818995	4.3	B	3A, 3B	5	6			0.05	B		10	5.4MC	Y	2	Franciosi,C	
18.90	818996	3.7	B	3A					EY				5.5		29	Shanklin,J.D	
18.976	818997	4.2	M	3A					0.040	B		7	4.5M	Y	8	Westlund,M	
18.976	818998	4.2	M	3A	10	4			0.09	M	11	56	4.5M	Y	8	Westlund,M	

NOTE A Moon 50%+.

NOTE B Tail measurement refers to dust tail only.

NOTE C Magnitude estimate uncertainty +/-0.2 mag.

NOTE D Naked eye with averted vision only.

NOTE E Comet altitude 10 deg., comparison stars' altitudes 12 deg., comet's uncorrected magnitude is 3.9.

NOTE F In horizon haze. Nucleus fuzzy.

NOTE G Oval shaped coma. Coma diameter is major axis.

NOTE H Fan shaped coma. Coma diameter is major axis.

NOTE I Exc. see. 1st 1/4 moon.

NOTE J New Zealand.

NOTE K Moon 9 days.

NOTE L Tail suspected to 3.5 deg. Tail PA 70-100.

NOTE M Nucleus.

NOTE N Coma diameter approximate.

NOTE O Tail now quite normal in shape; long relatively narrow, with only slightly diverging sides - very much different in appearance from just a few days ago. Tail's edges at PA 69 deg. and 105 deg. but appears much narrower than this to the unaided eye, with which the tail is traceable 12.5 deg. and appears parabolic in shape. With 7x50 B tail length = 5+.

NOTE P Fan angle approximately 10 deg.

NOTE Q Long, broad dust tail spans PA 65-100.

NOTE R PA approximate.

NOTE S Naked eye tail length.

NOTE T See sketch. PA 70 100. [sic]

NOTE U Very broad tail.

NOTE V Tails photo'd. to 10.6 deg and 6.4 deg.

NOTE W PA 70 to 100.

NOTE X PA of 6.4 deg. tail is 98-65.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
18.672	831146						15	6.0	5	Thompson,G	A
18.701	831147		0.076	N	7.9	60			1	Freydank,E	B
18.974	831148	1.6	0.090	M	11	56	5	4.5	8	Westlund,M	C

NOTE A Naked eye observation. Northerly edge of tail extended to Pi Hya, southern edge to Upsilon (1) Cen. Tail now noticeably less fan-shaped than on earlier days.

NOTE B DC 6. Moonlight. Star of approximately magnitude 4.3 visible. (Duration not indicated. Time of observation is assumed to be start time. Translated by IHW staff. Ed.)

NOTE C Disturbing lights: moon.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdag	Id/Typ	Site	Observer(s)	Notes
18.134	851896	0.050	2.8		39.6 x27.0	5.00	3M 1000	1000/	N	M	545/P	1	Stolzen,P	A
18.141	851897	0.050	2.8		39.6 x27.0	5.00	Agfachrome	1000/	N	M	547/P	1	Stolzen,P	A
18.168	851898	0.050	2			3.50	Kodak Tri-X	400/	N		14/P	1	Falsarella,N	
18.196	851899	0.050	2			3.50	Kodak Tri-X	400/	N		15/P	1	Falsarella,N	
18.690	851900	0.085	2.4		23.9 x16.1	20.00	Kodak 2415		Y	O	70/S	2	Garradd,G	B

NOTE A (Observer's image identifier is preceded by prefix 2. Ed.)

NOTE B Lens aperture stopped down from f/2.0 to f/2.4.

DATE: 19 APR 1986

DATE: 19 APR 1986

## 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
19.083	818999	3.9	B	137	15				0.040	B		8	5.2	Y	1	Levai,R	A
19.092	819000	3.5	M	3B	25		0.6	323	0.05	B		7	3.5MC	Y	2	DeYoung,J.A	
19.108	819001	4.2	B	138	20		2		0.05	B		7	4.0	Y	1	Lairret,R	
19.125	819002	4.4	M	3B					0.035	B		7	4.0CM	Y	3	Allen,E	
19.139	819003	5.2	S	3B	2.9	8			0.203	N	6	101	4.8M	Y	1	Hudak,D.M	
19.146	819004	4.1	S	138				65	0.05	B		7	4.8	Y	5	Benavides,A	
19.149	819005	3.5	S	138	24	3		49	0.05	B		20	4.5	Y	1	da Silva,L.A.L	B
19.15	819006	3.2	M	IHW		5				EY			5.0	Y	5	Granslo,B.H	
19.170	819007	3.1	S	3A	20	5			0.05	B		7	4.5M	Y	2	Hause,R.R	C
19.333	819008	4.7	S	3B		5			0.203	SC	10	80	3.5MC	Y	1	Gronek,J.D	D
19.372	819009	3.5	B	3B	35	5	1	90	0.05	B		10		N	1	Tregaskis,T.B	E
19.42	819010	3.2	M	3B						EY			5.0	Y	11	Keen,R	F
19.46	819011						10			EY			5.3M	N	1	Lovejoy,T	G
19.48	819012	3.2	B	IHW BAA	46	3				EY				Y		Green,D.W.E	H
19.61	819013	3.2	B	3A						EY			5.2	Y		Clark,M.L	I
19.62	819014	3.8	S	3A	21	7	3.2		0.25	N	5	38	5.2	Y		Clark,M.L	J
19.656	819015	3.0	S	3A			13	85		EY			6.1	Y	1	Seargent,D	K
19.666	819016	3.0	S	3B	14	8	3		0.080	B		20		Y	2	Batz,R	L
19.68	819017	2.7	S	3B		3	23	80		EY			6.5	Y	19	Bouma,R.J	M
19.69	819018	3.0	B	3B			17	85		EY			6.5	Y	11	Keen,R	F
19.70	819019	3.0	M	3A	20	4			0.05	B		10		Y	19	Bouma,R.J	N
19.70	819020	3.2	B	3A						EY			6.5	Y	19	Bouma,R.J	O
19.700	819021	2.7	S	159		3				EY			6.0	Y	3	Williams,P.F	
19.708	819022	2.7	S	3A			22			EY			6.5	Y	2	Garradd,G	P
19.708	819023	3	B	3B	30		25			EY			6.5	Y		Thompson,G	Q
19.861	819024	3.4	M	3B		3				EY			5.0M	Y	1	Fleet,R.W	
19.865	819025	4.5	M	3B	22	6	3.5	81	0.08	B		11	5.0M	Y	1	Fleet,R.W	R
19.872	819026	4.4	M	3B		7			0.05	B		12		Y	1	Tanti,T	S
19.90	819027	3.8	B	3A						EY			5.0		30	Shanklin,J.D	
19.90	819028	4.9	B	3B					0.08	B		20	5.0		30	Shanklin,J.D	T
19.900	819029	3.7	S	139	24		1.0	80		EY			6.3	Y	7	Haver,R	U
19.903	819030	4.3	M	3B	14.5	8			0.089	R	5.5	18	5.0	N	1	Ventura,F	V
19.905	819031	3.9	S	139	24	5			0.05	B		7	6.3	Y	7	Haver,R	W
19.920	819032	3.5	M	3B	90	4	5		0.08	R	15	43	4.5	Y	6	Gallego,J	X
19.9270	819033	4.3	B	3B	3	7			0.05	B		10	4.5CM	Y	2	Franciosi,C	Y
19.938	819034	3.0	B	3B	45				0.13	N	5.5	36		N	1	Pedraz,S	Z
19.952	819035	4.1	B	3B	14	5	0.5		0.050	B		7	5.0M	N	9	Linder,J	a

NOTE A Magnitude estimate uncertainty +/-0.2 mag.

NOTE B Moon 66%.

NOTE C Naked eye with averted vision only.

NOTE D Exc. see.

NOTE E Tail faint and wide. PA approximate. Thin cloud, gibbous moon. Just visible to naked eye.

NOTE F New Zealand.

NOTE G Naked eye tail length.

NOTE H Coma diameter approximate.

NOTE I Moon up.

NOTE J Moon up. PA of 3.2 deg. tail is 100-71.

NOTE K Tail narrower.

NOTE L Saw tail with naked eye. (Observer gives limit as 11.5. Ed.)

NOTE M Long broad dust tail. PAs approximate. Chart 3A also used for comparison stars.

NOTE N Dust fan from PA 79 to 107.

NOTE O Naked eye Bobrovnikoff estimate possible without wearing my glasses!

NOTE P Very broad tail.

NOTE Q PA 78 93. [sic]

NOTE R Midpoint on dust tail: 1.8 deg. at PA 73. End point of dust tail: 3.5 deg. at PA 81. Type III [sic] tail at PA 108.

NOTE S Seeing good, transparency excellent. Moon.

NOTE T Magnitude of central condensation.

NOTE U Center fan-shaped tail.

NOTE V Bright moon. The centre of the bright condensation appears definitely star-like.

NOTE W See drawing. West corner fan-shaped tail at PA 63, 2.67 deg. long; east corner fan-shaped tail at PA 95, 2.43 deg. long.

NOTE X Moon.

NOTE Y Central condensation nucleus. [sic]

NOTE Z Coma diameter approximate. Moon.

NOTE a Type I tail. Tail length approximate.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
19.677	831149		0.076	N	7.9	60				Freydank,E	A
19.708	831150							6.0	6	Thompson,G	B
19.865	831151	4	0.08	B		11		5.0	1	Fleet,R.W	C
19.920	831152		0.080	R		43			6	Gallego,J	D
19.938	831153	1	0.08	R	15	42,100	60	4.5	6	Cardiel,N	E

NOTE A DC 5. Bright moonlit night; 2/8 cumulus. (Duration not indicated. Time of observation is assumed to be start time.

Translated by IHW staff. Ed.)

NOTE B Naked eye observation. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C Dust tail end point at PA 81. Type III [sic] at PA 108. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Broad envelope. The nucleus seems to be double. The faint "piece" to the ENE (but not sure). 11 days moon. The contrast in the drawing is exaggerated. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

NOTE E The two semi latus rectums seem equal. Visible at naked eye. Coma diameter 10'; envelope diam.: 1 deg. 30', diffuse. Tail PA 50. Moon 11 days. With 7x50 binocs., is visible a broad faint tail &gt;4 deg. [sic] At 100x with the telescope, the "false nucleus" appear double. [sic]

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
19.197	851901	0.305	1.5	0.203	6.8 x 4.5	0.50	Kodak 2415		Y	X	263/P	1	Sabia,J.D	A
19.271	851902	2.000	10	0.200	1.0 x 0.7	0.50	Scotch 1000	1000/	N	S	16/S	1	Gronek,J.D	B
19.718	851903	0.085	2.4		23.9 x16.1	20.83	Kodak 2415		Y	O	71/S	2	Garradd,G	C
19.752	851904	0.180	2.8		11.4 x 7.6	20.00	Kodak 2415		Y	O	72/S	2	Garradd,G	D

NOTE A 10 day old moon in sky. Moonlight interfered with the observation. Photograph made by J. Kamichitis and J.D. Sabia.

NOTE B Moonlight and city lights interfered with the observation.

NOTE C Lens aperture stopped down from f/2.0 to f/2.4.

NOTE D Temperature for hypersensitization 60-65 deg. C.

DATE: 20 APR 1986

DATE: 20 APR 1986

## 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	
20.000	819036	4.6	S	3B		7	1.8		0.15	B		25	5.0	Y	3	Parisio,R	A	
20.076	819037	3.6:	B	138		3			0.05	B		20	4.0	Y	1	da Silva,L.A.L	B	
20.1903	819038	4.8	S	DCS	9				0.080	B		20	4.4		3	Nachholz,D	C	
20.208	819039	4.1	B	137					0.040	B		8	4.7	Y	1	Levai,R	D	
20.24	819040	3.3	M	3A					0.050	B		10	3.5MC	Y	9	Morris,C.S		
20.30	819041	3.5	B							EY		5	M	Y	11	Hale,A	E	
20.30	819042					2		55	0.05	B		10	5	M	11	Hale,A	E	
20.44	819043	3.3	B	IHW BAA	46	4				EY						Green,D.W.E	F	
20.45	819044	4.1	M	3B	30				0.080	B		11	3	M	N	2	Watanabe,N	G
20.49	819045	4.4	S	3B	10	7			0.07	B		10	4.0M	Y	1	Yasuki,M		
20.708	819046	3.4	S	3B	23		9	80		EY		6		Y	1	Seargent,D	H	
20.708	819047				30		20			EY		6.5		Y	7	Thompson,G	I	
20.71	819048	2.9		3A		3	17	95		EY		6.5		Y	20	Bouma,R.J	J	
20.71	819049	3.1	M	3A		4	2.5	64	0.05	B		10	6.5	Y	20	Bouma,R.J	K	
20.71	819050	3.4	B	3A	20				0.05	B		10	6.5	Y	20	Bouma,R.J	F	
20.729	819051	2.9	S	3B			17			EY		6.5		Y	2	Garradd,G	L	
20.73	819052	3.3	B	3A						EY		6.8		Y		Clark,M.L	M	
20.75	819053	3.7	S	3A	26	7	6.1		0.25	N	5	38	6.8	Y		Clark,M.L	N	
20.833	819054	4.9	S	3B	8	5			0.080	B		10		M	1	Mikuz,H	O	
20.833	819055	4.2	M	3B		7			0.05	B		12		Y	1	Tanti,T	P	
20.844	819056	3.8	M	3B	28	7			0.030	B		8	3.0M	Y	1	Villa,M		
20.88	819057	3.8	B	3B						EY		4.8			31	Shanklin,J.D		
20.926	819058	4.4	M	3B	10	6	2.4	90	0.04	B		12	5.2	N	4	Henshaw,C	Q	

NOTE A Tail PA 35, 130.

NOTE B Moonlight and cirrus.

NOTE C 77% moon 53 deg. away. Coma irregular in shape.

NOTE D Magnitude estimate uncertainty +/-0.2 mag.

NOTE E Observation affected by waxing gibbous moon. A very broad dust fan observed with the 20 cm reflector.

NOTE F Coma diameter approximate.

NOTE G Coma diameter uncertain.

NOTE H Nucleus stellar in 15x80 binoculars. Tail PA 80 15 deg. long? Tail at PA 100 length approximate.

NOTE I PA 75 97. [sic]

NOTE J Dust tail. PA value approximate.

NOTE K Gas tail at PA 64. Broad dust fan from PA 78 to 108.

NOTE L Very broad tail.

NOTE M Comet low.

NOTE N Dust tail only. PA of tail is 102-76. Tail photo'd. to 7.6 deg.

NOTE O Excellent conditions. Strong moonlight.

NOTE P Transparency excellent. Moon.

NOTE Q Moon.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurH	Lim	Site	Observer(s)	Notes
20.260	831154	0.54	0.41	N	5	64	30	4.5	1	Levy,D.H	A
20.701	831155		0.076	N	7.9	81			1	Freydank,E	B
20.708	831156							6.0	7	Thompson,G	C

NOTE A Scale is approximate.

NOTE B DC 5. Bright moonlight. Comet not as visible with naked eye. Star visible within 3'. (Duration not indicated. Time of observation is assumed to be start time. Translated by IHW staff. Ed.)

NOTE C Naked eye observation. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
20.147	851905	0.210	4		9.8 x 6.5	3.00	Fuji	200/	N	X	3/P	1	Searles,M	
20.700	851906	0.085	2.4		23.9 x 16.1	21.50	Kodak 2415		Y	O	73/S	2	Garradd,G	A
20.745	851907	0.180	2.8		11.4 x 7.6	25.00	Kodak 2415		Y	O	74/S	2	Garradd,G	B

NOTE A Photograph made by J. Tuten and M. Searles.

NOTE B Lens aperture stopped down from f/2.0 to f/2.4.

NOTE C Temperature for hypersensitization 60-65 deg. C.

DATE: 21 APR 1986

DATE: 21 APR 1986

## 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
21.063	819059	4.0	B	137	15				0.05	B		7	5.0CM	Y	2	Martinez,C	
21.066	819060	4.1	B	137	15				0.05	B		7	5.0CM	Y	2	Martinez,C	
21.104	819061	4.1	B	138,113		3			0.05	B		10	4.0	Y	1	Harris,L.A	A
21.113	819062	4.2	B	3B		2			0.03	B		8	4.7CM	Y	2	Giraudi,J.D	
21.119	819063	4.3	B	3B		2			0.03	B		8	4.7CM	Y	2	Giraudi,J.D	
21.124	819064	4.0	B	3B		2			0.03	B		8	4.7CM	Y	2	Giraudi,J.D	
21.198	819065	4.5	M	3B		3			0.08	B		11	3.5	Y	1	Kemble,L.J	B
21.2104	819066	4.3	S	DCS	10	6			0.080	B		20	4.4		3	Machholz,D	C
21.229	819067	4.8	S	3B	32	5			0.05	B		10	3 MC	Y	1	Gronek,J.D	D
21.24	819068	3.2	M	3A, 3B	11	4			0.050	B		10	3.5MC	Y	9	Morris,C.S	
21.35	819069	3.4	B	IHW BAA	46	3				EY						Green,D.W.E	E
21.38	819070	2.7		5B			5			EY			5.5M	N	1	Lovejoy,T	F
21.39	819071	3.6	S	3B, 137	24	4			0.023	B		3	4.7			Jones,A	G
21.39	819072				11	7			0.078	R	7.5	30				Jones,A	H
21.40	819073	8.0	V	SAO					0.317	N	5	86				Jones,A	I
21.44	819074	5.2	B	3B					0.050	B		7	CM	Y	1	Matchett,V	
21.67	819075	3.4	S	3B, 137	35	5			0.023	B		3	5.4			Jones,A	
21.67	819076						0.8		0.078	R	7.5	30				Jones,A	J
21.719	819077	3.5	B	3B		16				EY			6.0	Y	7	Thompson,G	K
21.72	819078	3.5	B	3A	20	4			0.05	B		10	5.5	Y	20	Bouma,R.J	E
21.72	819079	3.4	B	3A						EY			6.8	Y		Clark,M.L	L
21.73	819080	3.0		3A/B		3	14	90		EY			5.5	Y	20	Bouma,R.J	M
21.73	819081	3.8	S	3A	24	7	6.9		0.25	N	5	38	6.8	Y		Clark,M.L	N
21.830	819082	4.2	M	3B		7			0.05	B		12		Y	1	Tanti,T	O
21.917	819083			3B	27	7			0.030	B		8	2.5M	Y	1	Villa,M	
21.994	819084	3.3	B	137		3			0.05	B		20	3.5	N	1	da Silva,L.A.L	P

NOTE A After several nights of clouds, at 2100 UT it has cleared a little in the area of the comet. Although the moon is a quarter crescent at the zenith, Halley was observed naked eye. (Translated by IHW staff. Ed.)

NOTE B This was my third and best observation since the comet returned above my horizon, (lat. 51 deg., 12 min.). Moonlight and some light haze interfered but the comet surprisingly clear. [sic] No tail noticed. Coma diameter 2-3'.

NOTE C 86% moon 40 deg. away. Coma irregular in shape.

NOTE D Exc. see.

NOTE E Coma diameter approximate.

NOTE F Naked eye tail length.

NOTE G Moon 12 days.

NOTE H Tail not seen for certain.

NOTE I Nucleus.

NOTE J Tail suspected to 1.8 deg. Tail PA 85-110.

NOTE K PA 72 90. [sic]

NOTE L Comet low.

NOTE M PA value approximate.

NOTE N PA of tail is 104-82.

NOTE O Transparency excellent. Moon.

NOTE P Moonlight and clouds.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
21.219	831157	0.54	0.41	N	5	64	30	4.5	1	Levy,D.E	A
21.420	831158	0.08	0.30	N	5	330		5.0	2	Thompson,G	B
21.719	831159							6.0		Thompson,G	C
21.792	831160		0.076	N	7.9	60			1	Freydank,E	D

NOTE A Scale is approximate.

NOTE B Note the broad faint ray to the north, the dagger like ray to the south. The star-like nucleus was not visible at all tonight being surrounded by a featureless plateau of brightness (inner coma) as seen under high magnification. Appended is a drawing by R. Bouma at 1015 UT. Both drawings done independently without collaboration. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C Naked eye observation. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D DC 7. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
21.749	851908	0.508	5	0.100	4.1 x 2.7	6.00	Kodak 098		N		036/P	8	Royer,R
21.749	851910	0.105	2.5		19.5 x13.0	6.00	Fujichrome	1600/	N		13/S		Royer,R
21.759	851909	0.050	1.7		39.6 x27.0	25.00	Fuji HR	1600/	N		421/P	11	Thompson,G

DATE: 22 APR 1986

DATE: 22 APR 1986

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
22.010	819085	3.7	B	BAA	30	3			0.040	B		10	4.0	Y	1	Alves,A.A	
22.090	819086	4.1	B	137	12		0.7	90	0.040	B		8	5.2	Y	1	Levai,R	A
22.155	819087	4.7	B	137					0.05	B		7	5.2		2	Galli,A	
22.158	819088	4.8	B	137					0.05	B		7	5.2		2	Galli,A	
22.23	819089	5.5	B	3B	6.3	3			0.154	N	8.0	68	3.5	Y		Kronk,G	B
22.2410	819090	3.9	S	DCS	15	4			0.080	B		20	4.6		3	Machholz,D	C
22.37	819091	3.5	B	INW BAA					EY							Green,D.W.E	
22.43	819092	3.4	S	INW BAA	30	3			0.035	B		7				Green,D.W.E	D
22.431	819093	3.7	B	3B	15	3		45	0.05	B		10		N	1	Tregaskis,T.B	E
22.46	819094	2.9		5B		6	2		EY				4.5M	N	1	Lovejoy,T	F
22.49	819095	5.1	B	3B					0.050	B		7	CM	N	1	Matchett,V	
22.542	819096	4.5	S	113	8	4	0.67	250	0.1	N	10	40	4.0	Y	1	Ichikawa,K	
22.57	819097	4.6	S	3B	10	6			0.07	B		10	4.0M	Y	1	Yasuki,M	
22.892	819098	4.4	M	3B	20	5	1.7	75	0.08	B		11	4.6M	Y	1	Fleet,R.W	G
22.896	819099	4.3		3B					EY				4.6M	Y	1	Fleet,R.W	

NOTE A Magnitude estimate uncertainty +/-0.2 mag.

NOTE B Moon 30 deg. away.

NOTE C 93% moon 32 deg. away. Coma irregular in shape.

NOTE D Coma diameter approximate.

NOTE E Tail doubtful. Clear and windy. Bright moon. (Observer gave limit as approximately 7.5. Ed.)

NOTE F Naked eye tail length.

NOTE G Gas tail at PA 75. Dust tail at PA 97.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
22.281	831161	0.52	0.20	N	7	79	30	4	1	Levy,D.H	A
22.468	831162	0.08	0.30	N	5	330		4.5	2	Thompson,G	B
22.892	831163	4	0.08	B		11		4.6	1	Fleet,R.W	C

NOTE A Scale is approximate.

NOTE B Note the ejections running N/S from the nucleus. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C Gas tail at PA 75. Dust tail at PA 97. Suspected tail at PA 100. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 23 APR 1986

DATE: 23 APR 1986

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
23.085	819100	4.6	S	3B	10	3			0.05	B		10	4.5M	Y	3	House, R.R.	
23.138	819101	3.3	B	137		4			0.05	B		20	3.5	Y	1	da Silva, L.A.L.	A
23.40	819102	3.9	S	3B, 137		6			0.023	B		3				Jones, A	B
23.51	819103	4.7	S	AAVSO	8	4			0.07	B		10	4.5M	Y	1	Hayashi, A	
23.52	819104	3.5	M	3B					0.05	B		7	4.0M	Y	1	Suzuki, K	
23.53	819105	4.4	S	AAVSO	10	4			0.13	N	6.3	24	4.5M	Y	1	Hayashi, A	
23.531	819106	4.8	M	3B	13	4			0.08	B		11	3 M	Y	1	Mitsuma, S	
23.531	819107								0.16	N	6.3	31	3 M	Y	1	Mitsuma, S	C
23.533	819108	4.0	S	3B	12	5	0.58	90	0.07	B		10	5.0	Y	1	Kobayashi, J	
23.558	819109	4.6	S	113	11.0	5			0.05	B		7	3.0M	N	1	Kanai, K	
23.958	819110	6.7	S	3B, 130	1	3			0.114	N	7.9	23	4.0M	Y	1	Di Meglio, F	

NOTE A Moonlight.

NOTE B Moon 14 days. Comet a faint, fuzzy path.

NOTE C m2 = 9.0.

DATE: 24 APR 1986

DATE: 24 APR 1986

## 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
24.000	819111					3				EY			6.5	Y	3	Williams, P.F	A
24.100	819112	4.6	S	3B	16				0.035	B		7	4.0M	N	3	Morrison, W	
24.125	819113	4.6	S	3B	11				0.05	B		10	4.5M	Y	3	House, R.R	
24.20	819114	4.9	S	3B	5.0	4			0.080	B		11	5.0	Y	2	Spratt, C.E	B
24.36	819115	3.5	S	IHW BAA		5			0.035	B		7				Green, D.W.E	
24.44	819116	3.5	B	IHW BAA						EY						Green, D.W.E	
24.500	819117	3.5	S	3B	14		25	88		EY				Y	1	Seargent, D	C
24.51	819118	3.2	S	3A/B		3	35	92		EY			6.5	Y	21	Bouma, R.J	D
24.51	819119	3.5	B	3B						EY			6.7	Y		Clark, M.L	E
24.51	819120	4.7	B	3B					0.050	B		7	5.1C	N	1	Matohett, V	
24.51	819121	3.5	M	3B					0.05	B		7	4.5	Y	1	Suzuki, K	
24.51	819122			3B	5.9	4			0.25		4.2	88	4.5	Y	1	Suzuki, K	F
24.513	819123						25			EY						Thompson, G	G
24.52	819124	4.0	S	3B	18	7	28.9		0.25	N	5	38	6.7	Y		Clark, M.L	H
24.52	819125	3.5	A			7	42			EY			6.5	Y	1	Lovejoy, T	I
24.52	819126	4.0			30	5	2		0.12	B		20	5.5	Y	1	Washi, S	J
24.524	819127	6.5	S	3B	10	5			0.153	N	8.6	52	4.0	Y	1	Iwaki, Y	K
24.524	819128	5.7	M	113	6	6			0.10	N	10	55	4.0CM	Y	1	Kato, T	L
24.53	819129	3.3	M	3B			15	90		EY				Y	12	Keen, R	E
24.53	819130	3.6	B	IHW BAA	28	4	26	90		EY						Green, D.W.E	M
24.53	819131	3.5	M	3B	15	5	1	80	0.08	B		20	5.5	Y	2	Oka, A	N
24.53	819132	3.5	B				28			EY			6.3	Y		Pearce, A	
24.531	819133	3.0	B	113		6	8.0	90	0.05	B		7	5.6	Y	2	Bembrick, C	O
24.540	819134	4.9	M	113	14	6			0.030	B		8	4.5C	Y	1	Kato, T	
24.54	819135	4.3	M	3B, 113	20	6	2	90	0.080	B		11	3	Y	1	Watanabe, N	P
24.54	819136	4.8	S	3B	12	6			0.07	B		10	4.0M	Y	1	Yasuki, M	
24.541	819137	3.2	S	113	12	7	4		0.080	B		20		Y	1	Batz, H	Q
24.542	819138	3.9		3B			1	90		EY				Y	8	Tregaskis, T.B	R
24.542	819139			3B			2	90	0.10	N	6	24		Y	8	Tregaskis, T.B	S
24.542	819140			3B	30		3	90	0.05	B		10				Tregaskis, T.B	T
24.545	819141	4.3	S	3B	25	4	5	90	0.07	B		10	3.5	Y	1	Kobayashi, J	
24.55	819142	4.1	M	AAVSO	16	5	0.7	70	0.065	R	8	16	4.5	Y	5	Nakamura, A	
24.556	819143	4.5	M	113		3			0.15	N	5	45	5.5	N		Kusumi, E	U
24.56	819144	3.8	B	3A/B		5			0.05	B		10	6.5	Y	21	Bouma, R.J	
24.56	819145	4.5	B		30	7			0.05	B		10	3.5	Y	1	Uda, K	
24.737	819146	4.9	M	3B	10	6			0.04	B		12	4.5	N	4	Henshaw, C	V
24.813	819147	4.7	M	AAVSO	3	5			0.156	N	10	54	4.5			Kosa-Kiss, A	
24.840	819148	5.2	S	3B	14	6			0.08	B		10	4.0M	Y	1	Znasik, M	W
24.861	819149	5.0	S	113	12	3			0.08	B		15	3.0M	Y	1	Hurst, G.M	

NOTE A Tail north edge 28 deg. long at PA 89, tail south edge 28 deg. long at PA 97.

NOTE B Hint of tail.

NOTE C During lunar ecl.

NOTE D Dust tail. Observations during lunar eclipse.

NOTE E During total lunar eclipse.

NOTE F Meter. (Coma diameter. Ed.) Instrument is Wright-Schmidt.

NOTE G Tail quite visible 20x80 binoculars. PA 87-95. [sic]

NOTE H Tail photo'd. to 24 deg. PA of tail is 110-88.

NOTE I Impressive to naked eye. Naked eye tail length. Lunar eclipse.

NOTE J (Observer indicated "Y" method. Ed.)

NOTE K Eclipse. (Translated by IHW staff. Ed.)

NOTE L Eaze.

NOTE M Coma diameter approximate.

NOTE N Can't see moon (eclipse). (Translated by IHW staff. Ed.)

NOTE O Suspect as much as 12 deg. tail.

NOTE P Coma diameter uncertain.

NOTE Q Moon in eclipse. (Observer gave limit as 10.5. Ed.)

NOTE R Tail faint and broad. Coma diameter exceeds Omega Centauri. During total lunar eclipse.

NOTE S Tail faint, fairly narrow. Head passed in front of 6 mag. star. (Observer gave limit as approximately 11.5. Ed.)

NOTE T Coma diameter is lower limit. Tail fairly broad.

NOTE U Observer gives coma diameter as 5 deg. 65 on original report form. Ed.

NOTE V Full moon.

NOTE W Moon.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
24.219	831164	0.53	0.41	N	5	64	90	4	1	Levy, D.H	A
24.514	831165							6.0		Thompson, G	B

NOTE A Scale is approximate.

NOTE B Naked eye observation. The first 15 degrees of tail could be readily seen with direct vision. In 20x80 binoculars the nucleus appeared at western edge of an egg shaped inner coma. (Two drawings supplied. Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
24.523	851911	0.180	2.8		11.4 x 7.6	8.00	Kodak 2415		Y	O	75/S	5	Garradd, G	A
24.523	851912	0.508	5	0.100	4.1 x 2.7	15.00	Kodak 098		N		038/P	9	Royer, R	B
24.523	851913	0.105	2.5		19.5 x 13.0	15.00	Fujichrome	1600/	N		14/S	9	Royer, R	
24.535	851914	0.024	2.8		73.7 x 53.1	20.00	Kodak 2415		Y	O	76/S	5	Garradd, G	C
24.540	851915	0.508	5	0.100	4.1 x 2.7	15.00	Kodak IIA-D		N		037/P	9	Royer, R	D
24.550	851916	0.050	1.4		39.6 x 27.0	5.00	Fujichrome	1600/	N		15/S	9	Royer, R	
24.552	851917	0.180	2.8		11.4 x 7.6	21.00	Kodak 2415		Y	O	77/S	5	Garradd, G	A
24.564	851918	0.085	2.0		23.9 x 16.1	5.50	Kodak 2415		Y	O	78/S	5	Garradd, G	E

NOTE A Film was excessively hypered (70 deg. C), causing severe fogging.

NOTE B Comet equal in brightness to Omega Cen. cluster. 3.9 mag.

NOTE C Film excessively hypered (65-70 deg. C), causing severe fogging.

NOTE D Wr. 4 filter used.

NOTE E Film excessively hypered, causing severe fogging.

DATE: 25 APR 1986

DATE: 25 APR 1986

## 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
25.073	819150	5.0	M	3B		6			0.035	B		7	2.5C	Y	1	Allen,E	
25.078	819151	4.7	S	3B	18				0.035	B		7	4 M	N	3	Morrison,W	
25.101	819152	5.2	S	3B	3.2	8			0.203	N	6	101	4.5M	Y	1	Hudak,D.M	
25.110	819153	4.7	S	3B	11	7			0.05	B		10	5 M	Y	3	House,R.R	A
25.38	819154	4.0	B	3B					0.030	B		8	4.5M	N	22	Bouma,R.J	
25.40	819155	4.0	A						EY				6.0M	Y	1	Lovejoy,T	B
25.466	819156	5.6	M	113	6	5			0.10	N	10	55	3.5M	Y	1	Kato,T	
25.474	819157	5.1	M	113	14	5			0.030	B		8	3.5M	Y	1	Kato,T	
25.516	819158	4.9	B	3B					0.05	B		16	3.3CM	Y	1	Giraudi,J.D	C
25.75	819159	4.8	S	AAVSO	20				0.08	B		8				Golubev,V	
25.75	819160	5.2	B	E	26				0.11	N						Krylov,A	
25.75	819161	5.0	B	E	20				0.11	B						Kasirin,I	
25.75	819162	5.0	B	E					EY							Belyaev,D	
25.75	819163	5.0	V	E					EY							Misuhin,A	
25.75	819164	4.9	V	E					EY							Paschenko,A	
25.75	819165	5.4	B	E	28				0.08	B		8				Maylisov,P	
25.75	819166	4.9	B	E	21				0.08	B						Bukotkin,A	
25.809	819167	4.7	M	3B	40	7			0.05	B		12		Y	1	Tanti,T	D
25.819	819168	4.6	M	CZ	18	3			0.080	B		10	4	Y	1	Bilek,V	
25.819	819169	4.3	B	3B					EY				4.6M	Y	1	Fleet,R.W	
25.819	819170	4.7	M	AAVSO	10	6			0.156	N	10	54	5.3			Kosa-Kiss,A	E
25.819	819171	5.1	M	CZ		5			0.08	B		10	4.5C	N	1	Rapavy,P	
25.827	819172	4.8	M	3B					0.035	B		9	5.0M	Y	1	Begbie,M.J.R	
25.83	819173	4.8	B	AAVSO	20	5			0.11	B		20				Chernis,K	
25.833	819174	5.0	S	3B	25	4			0.08	B		10	4.2	Y	1	Znasik,M	F
25.837	819175	5.3	S	113	13	4			0.05	B		10	4.5CM	N	1	Menichetti,R	G
25.844	819176	5.0	M	3B	17	5	1.5	76	0.08	B		11	4.7M	Y	1	Fleet,R.W	H
25.864	819177				12	4			0.08	B		15	3.2C	Y	1	Hurst,G.M	
25.865	819178	5.3	B	113	30	4			0.07	B		10	5.0	Y	5	Deconinck,M	
25.867	819179	4.8	S	113	10	4			0.05	B		10	3.2C	Y	1	Hurst,G.M	
25.868	819180	5.1	S	3B	15	5			0.050	B		7	M		1	Mikuz,H	I
25.869	819181				7.6	5	2.5	85	0.30	N	8.5	102	5.0M	Y	1	Begbie,M.J.R	J
25.878	819182	4.8	M	113	30	5	0.25	40	0.050	B		7	6.0	Y	1	Stott,D	
25.878	819183	6.3	M	CZ	10											Silhan,J	K
25.882	819184	6.4	M	CZ	17	3			0.10	B		25	4.2			Hajek,P	
25.885	819185	5.3	S	113	8	6			0.065	B		12	4.5	Y	1	Foulkes,M	L
25.89	819186	4.4	B	3B					EY			7	5.7		32	Shanklin,J.D	G
25.89	819187	4.8	S	3B					0.05	B		7	5.7		32	Shanklin,J.D	G
25.958	819188	4.9	B	3B		5			0.05	B		7	4.1C	Y	2	Lupianez,B	

NOTE A m2 = 6.4.

NOTE B Tail length = hint naked eye.

NOTE C Intense full moon. (Translated by IEW staff. Ed.)

NOTE D Moon.

NOTE E Comet: naked eye.

NOTE F Cirrus.

NOTE G Haze.

NOTE H Suspected gas tail at PA 76. Midpoint of dust tail: 1.7 deg. at PA 105. End point of dust tail: 2.8 deg. at PA 106.

NOTE I Clouds passing occasionally.

NOTE J Tail measurement refers to dust tail only.

NOTE K Limit around 27 Stars in Corvus invisible.

NOTE L Hazy.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
25.049	831166	3.0	0.229	R	10	45	22	6.0	1	Nowak,G.T	A
25.113	831167	0.38	0.318	N	8	75	72		1	Bathaway,W	
25.844	831168	4	0.08	B		11		4.7	1	Fleet,R.W	B
25.889	831169	1.94	0.065	B		12	10	4.5	1	Foulkes,M	C

NOTE A Dust tail at PA 225, gas tail at PA 330.

NOTE B Suspected gas tail at PA 76. Dust tail end point at PA 106. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C Non circular coma, brighter central spot offset in direction of PA approximately 210 deg. Coma broader towards PA 45 deg.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
25.527	851919	0.035	2.8		54.4 x37.8	7.00	3M 1000	1000/	N		1/S	1	Robertson,G	A
25.534	851920	0.035	2.8		54.4 x37.8	7.00	3M 1000	1000/	N		3/S	1	Robertson,G	B
25.556	851921	0.100	2.8		20.4 x13.7	10.00	3M 1000	1000/	N		9/S	1	Robertson,G	C

NOTE A (Photographer's image identifier is 1-2A. Ed.) Total lunar eclipse (exposure 5 sec. on moon, then 7 min. on comet), comet Halley and constellation Corvus in same frame. Clear.

NOTE B (Photographer's image identifier is 2A-3. Ed.) Total lunar eclipse (exposure 5 sec. on moon, then 7 min. on comet), comet Halley and constellation Corvus in same frame. Clear.

NOTE C (Observer's image identifier is 8A-9. Ed.) Comet Halley and tail as seen during total lunar eclipse (40 deg. away) over Christchurch, N.Z. Clear.



DATE: 26 APR 1986

DATE: 26 APR 1986

## 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
26.083	819189	4.7	B	113	8				0.040	B		8	4.7	Y	1	Levai,R	A
26.087	819190	4.8	S	3B	4.4	7	0.67	120	0.152	N	5.5	69	4.5	Y	1	Hudak,D.M	B
26.095	819191	4.7	S	3B	11	5			0.05	B		7	4.5C	Y	3	Hause,R.R	
26.112	819192	3.0	B	3B	6.6	3			0.140	SC	3.6	28	2.6	Y	1	Rousom,J	C
26.2146	819193	3.9	S	DCS	17	5			0.080	B		20	4.6	Y	3	Nachholz,D	D
26.229	819194	5.4	S	3B	32	4			0.05	B		10	3.5MC	Y	1	Gronck,J.D	E
26.333	819195	4.6	S	M/P	12	3			0.050	B		10	3.0	Y	1	Witte,F	F
26.354	819196	3.8	S	3B			12	100		EY			5.5M	Y	1	Seargent,D	G
26.40	819197	3.7	A				20			EY			6.3	Y	1	Lovejoy,T	H
26.656	819198	4.9	M	3B	10	6	1.5	100	0.04	B		12	5.2	N	4	Henshaw,C	I
26.726	819199	5.3	M	3B	17	5	2.5	86	0.08	B		11	5.7	Y	1	Fleet,R.W	J
26.729	819200						9	101		EY			5.7	Y	1	Fleet,R.W	K
26.74	819201	5.3	B	E	24				0.11	B		20				Krylov,A	
26.74	819202	5.0	B	E	20				0.06	R						Kurtsov,S	
26.74	819203	5.2	B	E	20				0.08	B		8				Oskin,E	
26.74	819204	5.1	B	E	20					EY						Maksimov,S	
26.74	819205	5.1	V	E						EY						Paschenko,A	
26.74	819206	4.9	B	E	20				0.08	B		8				Tatarnikov,A	
26.74	819207	5.1	B	E	20				0.08	B		8				Fillimonchev,S	
26.74	819208	5.0	B	E	20				0.08	B		8				Maylisov,P	
26.74	819209	5.1	V	E	20					EY						Bukotkin,A	
26.74	819210	4.9	B	AAVSO	20				0.08	B		8				Golubev,V	
26.750	819211	4.3	B	3B	23	6	6		0.05	B		7	5.2	Y	2	Vincent,J	L
26.795	819212	4.8	B	113	5	3	4		0.050	B		10	4.5	Y	1	Laszlo,A	
26.809	819213	4.8	M	3B	31	6			0.05	B		12	4	Y	1	Tanti,T	M
26.81	819214	5.2	B	M		5	0.7	260	0.11	N		30				Yurchenko,Yu	
26.823	819215	5.1	M	113		5			0.06	R	4.5	10	4.0M	Y	1	Chodorowski,F	N
26.833	819216				12	6			0.064	R	12	32	4.0M	Y	1	Chodorowski,F	N
26.833	819217		S	112	6.2	4			0.090	R	14	46	4.5	Y	2	Hirth,G	O
26.844	819218	5.1	B	3B	16	4			0.05	B		7	4.5	Y	2	Paradowski,M	N
26.847	819219	5.3	S	3B	22	5			0.08	B		10	4.4	Y	1	Znasik,M	P
26.85	819220	4.6	B	AAVSO	20	5			0.11	B		20				Chernis,K	
26.854	819221	3.9	B	CZ	16	10	5		0.10	O		25	4.0C	Y	1	Micek,I	
26.875	819222	4.2	B	3B	50		5		0.05	B		7		Y	1	Pedraz,S	Q
26.88	819223	4.4	B	3B						EY			5.1		33	Shanklin,J.D	R
26.88	819224	4.8	S	3B					0.05	B		7	5.1		33	Shanklin,J.D	R
26.882	819225	5.2	M	3B					0.035	B		9	5.3M	Y	1	Begbie,M.J.R	
26.89	819226	5.3	S	3B					0.08	B		20	5.1		33	Shanklin,J.D	S
26.896	819227				5				0.064	R	12	32	3.0M	Y	1	Chodorowski,F	N
26.910	819228	5.2	B	113					0.030	B		8	4.5	Y	4	Li Causi,G	
26.910	819229				9	5	0.58	106	0.076	N	9.2	70				Li Causi,G	T
26.917	819230				6.2	5	3.0	90	0.30	N	8.5	102	5.3M	Y	1	Begbie,M.J.R	U
26.917	819231	4.0	M	3B	60	4	7.0		0.08	R	15	50	5.5	Y	6	Gallego,J	V
26.986	819232	5.6	B	113,112	15	2			0.05	R	8	7	5.0CM	Y	1	Martinez,C	
26.998	819233	3.9	B	113		5			0.05	B		20	4.5	Y	1	da Silva,L.A.L	W

NOTE A Magnitude estimate uncertainty +/-0.3 mag.

NOTE B Tail length and PA approximate.

NOTE C Heavy haze. Nucleus fuzzy.

NOTE D Coma irregular in shape.

NOTE E Wan. gib. moon. Good see.

NOTE F Somewhat hazy. (Translated by IHW staff. Ed.)

NOTE G Sky light due to rising moon.

NOTE H Naked eye tail length.

NOTE I Moon.

NOTE J Gas tail at PA 86. Midpoint on dust tail: 4.6 deg. at PA 99. End point of dust tail: 8.7 deg. at PA 99. Type III [sic] tail at PA 106.

NOTE K Ended by cloud.

NOTE L 30 deg. fan tail.

NOTE M Seeing good, transparency fair. Haze. Clouds. Wind.

NOTE N Clouds.

NOTE O Extinction.

NOTE P Cirrus.

NOTE Q Two tails, see drawing. Tail length is lower limit.

NOTE R Haze.

NOTE S Haze, broad tail.

NOTE T PA computed by a callipered eye-piece. [sic] Second tail length and PA approximate.

NOTE U Tail measurement refers to dust tail only.

NOTE V Two tails.

NOTE W Moonlight.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
26.240	831170	0.53	0.41	N	5	64	90	5	1	Levy,D.H	A
26.726	831171	4	0.08	B		11		5.7	1	Fleet,R.W	B
26.840	831172	0.2	0.050	B		7	10	5.1	3	Piccinini,M	C
26.875	831173		0.05	B		7			1	Pedraz,S	D
26.896	831174	3	0.05	B		7	30	5.5	7	Cardiel,N	E

NOTE A Scale is approximate.

NOTE B Gas tail at PA 86. Dust tail end point at PA 99. Type III [sic] at PA 106. Tail probably longer but observation ended by cloud. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C City lights interfered with the observation. Tail at PA 90 deg. Vertex distance = 3', semi latus rectum P1 = 3', P2 = 3'.

NOTE D Field: 7 deg. Two tails clearly visible, broads. Coma (but not the tail) visible at naked eye. Coma 50' diam. Tail 5 deg. length. (Duration not indicated. Time of observation is assumed to be end time. Ed.)

NOTE E Tail: 5 deg at PA 50. The tail is narrow but far from the coma, it grow. [sic]

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
26.074	870140	600G-O	CL	0.135	1.9		30.00	Kodak 2415		Y	C	230/S	1	Buchanan,W.T	A

NOTE A (Observer's image identifier is E-122-30. Ed.) Comet Halley visible to naked eye.

DATE: 27 APR 1986

DATE: 27 APR 1986

## 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
27.021	819234	4.9	B	113	10				0.040	B		8	5.1	Y	1	Levai,R	A
27.069	819235	5.3	S	3B	4.4	7	0.50	100	0.203	N	6	101	4.7	Y	1	Rudak,D.M	B
27.094	819236	5.7	M	3B			2.0	100	0.050	B		10	5.2	Y	1	Smith,A	C
27.096	819237	4.7	S	3B	17	4			0.035	B		7	5.5	Y	3	Morrison,W	
27.104	819238	6.2	B	113					0.080	B		20	5.5	Y		Smith,D	
27.115	819239	5.2	M	3B	10.1		2.17	110	0.152	N	5	19	5.2	Y	1	Smith,A	D
27.118	819240	4.9	B	3B	18	15	3	3.0	0.05	B		10	6.5	Y	1	Hays Jr,R.H	
27.125	819241	4.8	B	3B	10		6	0.5	0.15	N	8	60	5.5	Y	4	Gilchrist,D.K	E
27.146	819242	5.5	B	113	20.5	6			0.050	B		7	4.0C	Y	1	Will,M	
27.165	819243	5.2	S	3B	8	3			0.05	B		7	4.5C	Y	3	House,R.R	
27.165	819244	5.1	S	3B	11	4			0.05	B		10	4.5C	Y	3	House,R.R	
27.172	819245	4.9	B	3B	8.3	1			0.05	B		7	4.1C	Y	1	Dodd,W.J	F
27.178	819246	5.6	B	3B		7			0.08	B		11	4.5	Y	1	Gorski,L	
27.198	819247	4.9		3B		4	3.5		0.08	B				Y	7	Edberg,S.J	G
27.20	819248	4.3:	B	IHW BAA	60				0.035	B		7				Green,D.W.E	H
27.20	819249	4.4	S	IHW BAA	24	5			0.050	B		10	5.5C	Y	13	Green,D.W.E	H
27.20	819250	4.4	M	3B	16	4	5	90	0.050	B				Y	13	Morris,C.S	
27.21	819251	4.3		3B			5	90	0.050	B				Y	13	Morris,C.S	
27.2194	819252	4.1		DCS	14	3			0.080	B		20	5.6	Y	10	Machholz,D	
27.2208	819253	4.3	S	DCS	20	6	0.82	105	0.080	B		10	5.6	Y	10	Machholz,D	
27.229	819254	6	S	3B	30	4			0.05	B		10	3 MC	Y	1	Gronek,J.D	I
27.229	819255	5.3	B	3B					0.05	B		7	4.4C	Y	2	Lupianez,B	
27.2292	819256				20	6			0.05	B		7	6.0	Y	19	Cook,A.J	J
27.2396	819257	4.3	M	3B	22	6	11.30	105	0.05	B		7	6.0	Y	19	Cook,A.J	K
27.347	819258	4.7	S	TIRION	16	3			0.050	B		15	3.6	Y		Witte,F	
27.361	819259	4.9	S	TIRION	15	3			0.080	B	4.5	14	3.8	Y		Witte,F	L
27.365	819260	4.2	S	3B			12	100	0.080	B		6		Y	1	Seargent,D	
27.382	819261						15		0.080	B		6		Y	8	Garrard,G	
27.40	819262	4.9	S	3B, 113		1			0.023	B		3	5.1	Y		Jones,A	M
27.40	819263				12	3			0.050	B		7		Y		Jones,A	
27.41	819264	9.6	V	SAO					0.317	N	5	86		Y		Jones,A	N
27.417	819265						22		0.080	B				Y	8	Thompson,G	O
27.729	819266	4.8	S	3B	16	5	2.25	107	0.13	R	4	21	5.5	Y	1	Campos,J	
27.753	819267	4.6	S	3B	25	5	2.00	105	0.08	B		30	5.5	Y	1	Campos,J	
27.76	819268	5.3	B	E	25				0.11	B		20		Y		Krylov,A	
27.76	819269	5.2	B	E	17				0.08	B		8		Y		Kasirin,I	
27.76	819270	5.2	B	E					0.08	B				Y		Belyaev,D	
27.76	819271	5.0	B	E	15				0.11	B		20		Y		Maksimov,S	
27.76	819272	5.2	B	E	18				0.08	B				Y		Misuhin,A	
27.76	819273	5.0	V	E					0.08	B				Y		Paschenko,A	
27.76	819274	5.1	V	E	18				0.08	B				Y		Tatarnikov,A	
27.76	819275	5.0	V	E	19				0.08	B				Y		Fillimonchev,S	
27.76	819276	5.1	B	E					0.08	B		8		Y		Ivanov,V	
27.76	819277	5.1	B	M	19				0.08	B		8		Y		Maylisov,P	
27.76	819278	5.0	B	M	19				0.08	B				Y		Bukotkin,A	
27.76	819279	5.1	B	AAVSO	20				0.08	B		8		Y		Golubev,V	
27.763	819280	4.5	M	3B		4	12	102	0.08	B			5.6	Y	1	Fleet,R.W	
27.764	819281	4.0	3B		60	4	3.00	100	0.08	B			5.5	Y	1	Campos,J	
27.767	819282	5.1	M	3B	18	6	3.0	97	0.08	B		11	5.6	Y	1	Fleet,R.W	P
27.78	819283	5.5	B	M		4			0.05	B		7		Y		Mamedov,V	
27.816	819284	4.9	M	AAVSO	7	4			0.156	N	10	54	4.0	Y		Kosa-Kiss,A	
27.816	819285	5.2	M	CZ	15	5			0.08	B		10	4.5C	N	1	Rapavy,P	
27.816	819286	6.2	M	CZ	15	7			0.10	B		25		Y	1	Silhan,J	Q
27.826	819287	5.1	S	3B	25	4			0.08	B		10	4.0	Y	1	Znasik,M	R
27.837	819288	6.1	M	CZ	20	6			0.055	R	6	12		Y	1	Silhan,J	Q
27.844	819289	4.9	B	3B		4			0.05	B		7	5	Y	2	Paradowski,M	
27.861	819290				14	4			0.08	B		15	2.0C	Y	1	Hurst,G.M	
27.868	819291	4.9	S	113	14	4			0.05	B		10	2.0C	Y	1	Hurst,G.M	
27.875	819292	6.0	B	113	15	3			0.035	B		7	5.0C	N	1	Sciezor,T	S
27.88	819293	4.7	B	3B					0.08	B		5.5		Y	34	Shanklin,J.D	T
27.882	819294	4.6	M	113		5	0.25	10	0.050	B		7	5.7	Y	1	Stott,D	
27.896	819295	5.5	M	113					0.06	R	4.5	10	4.0	Y	1	Chodorowski,F	
27.899	819296				10	5			0.064	R	12	32	4.0	Y	1	Chodorowski,F	
27.938	819297	6.1	S	113		4			0.070	B		16	4.1C	Y	1	Taylor,M.D	U
27.941	819298	4.9	B	AAVSO	18	3	0.5	90	0.115	N	7.8	30	5.5	Y	1	Alves,A.A	V
27.965	819299	5.1	B	113			0.83	75	0.05	B		7	5.7C	Y	2	Martinez,C	
27.98	819300	4.9	B	AAVSO			5.4		0.04	B		7		Y		Kiselev,N	

NOTE A Magnitude estimate uncertainty +/-0.2 mag.

NOTE B Tail length and PA approximate.

NOTE C Seeing conditions very good.

NOTE D Newtonian RFT.

NOTE E Coma diameter and tail length are rough estimations.

NOTE F Coma was slightly elliptical; long dimension recorded. No tail seen.

NOTE G Tail length approximate.

NOTE H Coma diameter approximate.

NOTE I Wan. gib. moon. Fair see. High thin clouds.

NOTE J Tail north boundary 12.17 deg. at PA 93; south boundary 13.03 at PA 107.

NOTE K Tail greatest length at PA 105; north boundary 5.05 deg. at PA 88, south boundary 10.48 deg. at PA 113.

NOTE L Tail length = "ansatz". [sic]

NOTE M Moon 18 days. Drifting clouds.

NOTE N Nucleus. Small nucleus - condensation not very bright.

NOTE O PA 95 125. [sic]

NOTE P Gas tail at PA 97. Midpoint on dust tail: 8.5 deg. at PA 102. End point of dust tail: 12.7 deg. at PA 102. Type III [sic] tail at PA 110.

NOTE Q Limit around 27 Stars in Corvus invisible.

NOTE R Cirrus.

NOTE S Thin fog above horizon.

NOTE T Cloud.

NOTE U Haze, low. Antoniadi III.

NOTE V Comet visible at first sight. (Translated by IHW staff. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
27.149	831175	0.5	0.13	SC	10	32,120	20	6.5	1	Hays Jr,R.H	A
27.198	831176	0.53	0.41	N	5	64	90	5	1	Levy,D.H	B
27.241	831177	3	0.050	B		7	5	6.0	19	Cook,A.J	C
27.417	831178							6.0		Thompson,G	D
27.767	831179	4	0.08	B		11		5.6	1	Fleet,R.W	E

DATE: 27 APR 1986

DATE: 27 APR 1986

NOTE A Dim fan or jet at PA 225. This was my first view of Halley since my Texas trip. Comet in general is more diffuse than it was in March. Tail more fan-shaped; apparently the gas tail is gone and only the dust one is left. Comet seems to be a quieter object than it was in March. 'Nucleus' is quite prominent and looked to be slightly sunward of center of coma.

NOTE B Scale is approximate.

NOTE C Some high cloud interference.

NOTE D Naked eye observation. (Duration not indicated. Time of observation is assumed to be an approximate start time. Ed.)

NOTE E Gas tail at PA 97. Dust tail end point at PA 102. Type III [sic] at PA 110. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
27.070	851922	0.305	1.5	0.203	6.8 x 4.5	0.50	Kodak 2415		Y	X	264/P	1	Sabia, J.D	A
27.087	851923	0.200	4		10.3 x 6.9	10.00	Kodak Tri-X	400/	N	M	2/P	1	Laroche, Y	
27.142	851924	0.050	4		39.6 x 27.0	0.67	Kodak Tri-X	400/27	N	X	016/P		Castineiras, R.S.J	B
27.224	851925	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	18/P	3	Yen, B	C
27.381	851926	0.055	2.8		36.2 x 24.6	20.83	Kodak 2415		Y	O	79/S	8	Garradd, G	D
27.394	851927	0.180	2.8		11.4 x 7.6	10.00	Kodak 2415		Y	O	80/S	8	Garradd, G	E
27.843	851928	0.300	4		6.9 x 4.6	5.00	Fotopan HL	400/27	N	O	9/P	1	Slusarczyk, J	

NOTE A Layer of hazy clouds is evident in photograph. Photograph made by J. Kamichitis and J.D. Sabia.

NOTE B Moonlights. [sic] City lights.

NOTE C (Observer's image identifier is 12. Ed.) Instrument is Schmidt camera.

NOTE D Film excessively hypered (65-70 deg. C), causing severe fogging.

NOTE E Film was excessively hypered (70 deg. C), causing severe fogging.

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
27.083	870141	600G-O	CL	0.135	1.9		30.00	Kodak 2415		Y	C	235/S	3	Buchanan, W.T	AB
27.101	870142	600G-O	CL	0.135	1.9		20.00	Kodak 2415		Y	C	236/S	3	Buchanan, W.T	BC

NOTE A (Observer's image identifier is E-122-35. Ed.)

NOTE B Comet Halley visible to naked eye.

NOTE C (Observer's image identifier is E-122-36. Ed.)

DATE: 28 APR 1986

DATE: 28 APR 1986

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	
28.002	819301	4.3	M	3B, 113	10	3			0.05	B		7	3.1	Y	2	DeYoung, J.A		
28.05	819302	4.6	S	3B	45	7	2	70	0.203	N	7	54	5.0	Y	1	Harrington, P	A	
28.056	819303	5.2	S	3B					0.035	B		7	4.8	Y	4	Rudak, D.M		
28.056	819304	5.1	B	113					0.05	B		7	5.3CM	Y	2	Martinez, C		
28.059	819305	4.9	B	113					0.05	B		7	5.3CM	Y	2	Martinez, C		
28.06	819306	4.5	B	3B	12	5	4.3	100	0.050	B		10	6	Y	1	Bortle, J.E		
28.06	819307	4.1	S	3B	30	3			0.05	BY		6	6	Y	1	Bortle, J.E		
28.06	819308	4.0	S	3B	20	4			0.050	R	3	6	6	Y	1	Bortle, J.E		
28.066	819309	4.8	B	3B	6.3	4			0.127	SC	10	50	2.6	Y	1	Rousom, J	B	
28.076	819310	4.0	S	3B	4.4	5			0.08	R	11	39	4.1C	N	1	Graves, D	C	
28.095	819311	5.1	S	3B	17	5			0.05	B		10	5	C	Y	3	House, R.R	D
28.095	819312	5.1	S	3B		6			0.05	B		7	5	C	Y	3	House, R.R	E
28.112	819313	4.9	S	3B	17		0.37	95	0.035	B		7	5.5	Y	3	Morrison, W		
28.139	819314	4.9	M	3B	18.4	7	6.0	104	0.05	B		12	6.4	Y	1	Knight, S		
28.139	819315	4.6	B	3B			2.0		0.05	BY		7	6.4	Y	1	Knight, S		
28.139	819316	9.9	V	RYA					0.152	N	6	101	6.4	Y	1	Knight, S	F	
28.144	819317	3.9	B	113		3			0.05	B		20	4.5	Y	1	da Silva, L.A.L	G	
28.146	819318	5.2	B	3B					0.05	B		7	4.5C	Y	2	Lupianez, B		
28.18	819319	4.9	M	3B			2	90	0.05	B		10	5.5C	Y	31	Hale, A	H	
28.18	819320	4.9	B	3B					0.05	BY		5.5C	Y	31	Hale, A	H		
28.2014	819321	4.3	M	3B	20	6	38.43	103	0.05	BY		6.4	Y	20	Cook, A.J	I		
28.21	819322	4.9		3B			12		0.05	BY			Y	7	Edberg, S.J	J		
28.21	819323	5.3	B	113	16	7			0.080	B		20		Y		Kronk, G		
28.22	819324		B	113	10.2	8	0.62	96	0.154	N	8.0	68		Y		Kronk, G		
28.22	819325	4.3	M	3B	16	4	13	95	0.050	B		10	6.0	Y	16	Morris, C.S	K	
28.2278	819326	4.6	S	DCS	9	8	0.63	103	0.254	N	3.8	32	5.8		1	Machholz, D		
28.2292	819327	4.3	S	DCS	12	6	0.60	103	0.05	BY			5.8		1	Machholz, D		
28.23	819328	3.8	M	3B		5	85		0.05	BY			6.0	Y	13	Keen, R	L	
28.2327	819329	4.6	S	DCS	11	7	1.01	103	0.080	B		20	5.8		1	Machholz, D		
28.2333	819330	4.3	M	3B	26		20.87		0.05	B		7	6.4	Y	20	Cook, A.J	M	
28.24	819331	4.3	B	3B			11	73	0.05	BY			6.0	Y	16	Morris, C.S	K	
28.292	819332	5.5	S	3B	34	4			0.05	B		10	4	C	Y	1	Gronek, J.D	N
28.343	819333	5.1	S	TIRION	15	2			0.050	B		15	2.5			Witte, F	O	
28.406	819334	4.8	B	3B		4	2	100	0.05	B		10		Y	1	Tregaskis, T.B	P	
28.406	819335		B	3B	9	5	1.17	100	0.10	N	6	24		Y	1	Tregaskis, T.B	Q	
28.406	819336		A				1		0.05	BY			5.5	Y	1	Tregaskis, T.B	R	
28.41	819337	4.0	A				14		0.05	BY			6.2	Y	1	Lovejoy, T	S	
28.448	819338	5.1	B	3B	15	3			0.05	B		7	4.0	Y	1	Hayashi, H		
28.473	819339	5.0	M	113	27	6			0.030	B		8	4.0C	Y	1	Kato, T		
28.479	819340	5.0	B	3B					0.035	B		7		N	1	Okada, M		
28.505	819341	4.5	S	3B	15	4	1	90	0.07	B		10	3.0	Y	1	Kobayashi, J		
28.51	819342	5.0	S	3B	12	6			0.07	B		10	4.0	Y	1	Yasuki, M		
28.542	819343	5.2	B	3B					0.07	B		10	4.9	Y	1	Date, M		
28.61	819344	3.8	B						0.07	B			5.5	Y		Pearce, A		
28.718	819345	5.0	B	113	30	2	5	200	0.065	B		20	4.3	Y	1	McBain, J	T	
28.76	819346	5.3	B	M	8	2	0.7	263	0.11	N		30				Yurchenko, Yu		
28.768	819347	5.4	M	3B					0.035	B		9	6.4	Y	1	Begbie, M.J.R		
28.778	819348				9.4	6	5.0	100	0.30	N	8.5	102	6.4	Y	1	Begbie, M.J.R	U	
28.78	819349	5.4	B	E	24				0.11	B		20				Krylov, A		
28.78	819350	5.2	B	E	18				0.08	B		8				Kasirin, I		
28.78	819351	4.9	B	E	21				0.08	BY						Kurtsov, S		
28.78	819352	5.0	B	E	22				0.08	B		8				Oskin, E		
28.78	819353	5.2	B	E					0.08	R						Belyaev, D		
28.78	819354	5.0	B	E	20				0.08	BY						Maksimov, S		
28.78	819355	5.2	B	E	18				0.08	R						Misuhin, A		
28.78	819356	5.1	B	E	21				0.08	BY						Tatarskiy, A		
28.78	819357	5.1	B	E	20				0.08	BY						Fillimonchev, S		
28.78	819358	5.2	V	E					0.08	BY						Ivanov, V		
28.78	819359	4.9	B	M	25				0.08	B		8				Maylisov, P		
28.78	819360	5.1	V	M	20				0.08	BY						Bukotkin, A		
28.78	819361	4.8	B	AAVSO	25				0.08	B		8				Golubev, V		
28.79	819362	4.3	B	E	20		5	1.5	98	0.05	B	7				Mormil, V		
28.802	819363	4.8	S	3B	20		5	2.50	105	0.08	B	30	5.2	Y	1	Campos, J		
28.807	819364	6.0	S	112					0.05	B		7		Y	1	Dziura, W	V	
28.81	819365	5.3	B	M	10	4			0.05	B		7				Kolomeyets, S		
28.813	819366	4.3	B	3B	60	4	0.5	100	0.05	BY			5.2	Y	1	Campos, J		
28.823	819367	4.9	M	3B	25	6	1.5	100	0.05	B		12	5.5	Y	1	Tanti, T	W	
28.833	819368	4.9	M	113	20	5		50	0.089	R	5.5	18	5.1	N	1	Ventura, F	X	
28.840	819369	5.8	B	113	14	4			0.066	R	15.2	28	5.0	Y	1	Gora, D		
28.85	819370	5.4	B	M	10	4			0.07	N	8	33				Pashko, D		
28.854	819371	6.0	B		5				0.080	R	6.2	50	4.0	Y	1	Pfittner, E		
28.854	819372	5.0	M	3B	21	6			0.07	B		20	5.5	Y	1	Tanti, T	Y	
28.868	819373	6.3	M	CZ		5			0.05	B		7				Silhan, J	Z	
28.87	819374	5.3	B	113	15	4			0.050	B		10	5.5	Y	1	Ward, A		
28.88	819375	4.3	B	3B					0.05	BY			5.5		35	Shanklin, J.D	a	
28.882	819376	4.9	B	AAVSO	18	3	0.5	90	0.115	N	7.8	30	5.9	Y	1	Alves, A.A		
28.882	819377	5.4	B	3B		4			0.090	N	7	26	3.0	Y	1	Vohla, F		
28.910	819378	5.4	S	113	21	5	0.15	40	0.070	B		16	4.5C	Y	1	Taylor, M.D	b	
28.972	819379	5.5	B	113, 112					0.05	B		7	5.5C	Y	1	Martinez, C		
28.979	819380	5.7	B	113, 112					0.05	R	8	7	5.5C	Y	1	Martinez, C		
28.98	819381	4.8	B	AAVSO		5			0.04	B		7				Kiselev, N		

NOTE A Also used 7x50.

NOTE B With 32 cm Newtonian using 68x: circular coma with diffuse boundaries showing relatively little condensation toward the center. However, at its heart is an essentially stellar nucleus of blue-white color, surrounded by a very small, dense haze of bright material. Nucleus and condensation no more than 5" in diameter using 170x.

NOTE C Haze. Nucleus fuzzy with brighter center.

NOTE D Urban lights, nuclear pin point with averted vision.

NOTE E Naked eye with averted vision only.

NOTE F Stellar condensation magnitude. Chart 112 also used.

NOTE G Moonlight.

NOTE H Some interference from local light pollution (street lights). Also possibility of some very thin cirrus in sky. Magnitude estimate is probably trustworthy but tail length estimate appears much too small in light of other observers' estimates at the same time (plus my own subsequent estimates).

NOTE I Tail greatest length at PA 103, north boundary 37.50 at PA 97, south boundary 36.57 deg. at PA 109.

NOTE J Tail length is lower limit.

NOTE K Multiple tails define the shape of the fan tail.

NOTE L Observation from Tahiti.

NOTE M Tail north boundary at PA 92, south boundary at PA 108.

NOTE N Beg. lesser light pol. Good see.

NOTE O Very difficult. (Translated by IHW staff. Ed.)

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NOTE P N. f. a 6 mag. star. Broken cloud. (Observer gave limit as approximately 10. Ed.)  
 NOTE Q Broken cloud. (Observer gave limit as approximately 11.5. Ed.)  
 NOTE R Broken cloud.  
 NOTE S Naked eye tail length. Coma diameter through 15x80 binoculars: 20'.  
 NOTE T (PA value appears to be incorrect. Ed.)  
 NOTE U Antitail in PA 280. Tail measurement refers to dust tail only.  
 NOTE V Clouds, fog.  
 NOTE W Seeing good, transparency good/excellent. Clouds.  
 NOTE X PA uncertain. The coma is large, round and bluish gray in colour.  
 NOTE Y Seeing good, transparency good/excellent.  
 NOTE Z Limit around 2? Stars in Corvus invisible. Thick mist.  
 NOTE a Brief gap in cloud.  
 NOTE b Antoniadi III. Nearly circular central condensation offset from centre. Suspected 10 arc min. tail fan, PA 0-76.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
28.077	831180	0.33	0.204	N	8	58,271	40	4.5	1	Robinson,P.C	A
28.109	831181		0.080	B		20	15		5	Arpin,P	B
28.219	831182		0.41	N		64	30	6.5	1	Levy,D.H	
28.237	831183	3	0.050	B		7	10	6.4	20	Cook,A.J	

NOTE A Hood at PA 270; dust tail at PA 125; dust tail at PA 315. The "hood" was a small (1.3') area just west of stellar central condensation which had a triangular or parabolic shape opening west. The apparent jet at PA 320 is a flaw in the drawing - not observed. The coma was broader southwest than northeast by 3 to 1. 6.6' vs. 2.3'. City lights interfered with the observation.

NOTE B Tail very faint. Best seen by averted vision.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
28.086	851929	0.200	4		10.3 x 6.9	10.00	Kodak 2415		Y	M	3/P	1	Laroche,Y	
28.213	851930	2.306	5	0.45	0.9 x 0.6	15.00	Kodak Tri-X		N	M	24/P	1	Webb,R	A
28.213	851931	0.200	4		10.3 x 6.9	15.00	Kodak Tri-X		N	M	25/P	1	Webb,R	B
28.231	851932	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	19/P	3	Yen,B	C
28.255	851933	0.050	1.8		39.6 x 27.0	10.00	Agfachrome	1000/	N	S	25/P	20	Cook,A.J	D
28.389	851934	0.180	2.8		11.4 x 7.6	19.00	Kodak 2415		Y	O	81/S	2	Garradd,G	E
28.407	851935	0.055	2.0		36.2 x 24.6	20.00	Kodak 2415		Y	O	82/S	2	Garradd,G	F
28.868	851936	0.300	4		6.9 x 4.6	7.00	Fotopan HL	400/27	N	O	10/P	1	Slusarczyk,J	
28.924	851937	1.200	7	0.17	1.7 x 1.1	30.00	Kodak IIA-F		N	M	12/P	1	Ridley,E.B	G

NOTE A Guiding/error. [sic] Film pushed to ASA 1000. Standard 3 min.-3 min. processing.

NOTE B Film pushed to ASA 1000. Standard 3 min.-3 min. processing.

NOTE C (Observer's image identifier is 18. Ed.) Instrument is Schmidt camera.

NOTE D This picture may help support claims made by visual observers of a tail length of 20 deg. or greater on that date.

NOTE E Film was excessively hypered (70 deg. C), causing severe fogging.

NOTE F Film excessively hypered (65-70 deg. C), causing severe fogging. Lens aperture stopped down from f/1.2 to f/2.0.

NOTE G (Observer's image identifier is preceded by prefix 2B. Ed.) Instrument uses photographic plates.

DATE: 29 APR 1986

DATE: 29 APR 1986

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
29.05	819382	4.6	B	IHW BAA						EY						Green,D.W.E	
29.06	819383	5.2	B	IHW BAA	20	5	3.5		0.035	B		7				Green,D.W.E	A
29.07	819384	4.4	S	IHW BAA	20	5	3.5		0.035	B		7				Green,D.W.E	A
29.073	819385	5.5	B	113					0.080	B		20	5.5	Y		Smith,D	
29.08	819386	4.3	S	3B	15	4			0.050	B		10	6	Y	1	Bortle,J.E	
29.08	819387	4.2	S	3B	43					EY		6		Y	1	Bortle,J.E	
29.08	819388				12	3	6.0	100	0.050	B		7	6	Y	1	Bortle,J.E	
29.08	819389	4.6	B	3B					0.050	B		10	6	Y	1	Bortle,J.E	
29.08	819390				12				0.317	N	6	55	6	Y	1	Bortle,J.E	B
29.092	819391	5.1	S	3B	14	4	1.2	100	0.035	B		7	6.0	Y	3	Morrison,W	
29.094	819392	4.8	M	113			2.33	100	0.050	B		10	5.4	Y	1	Smith,A	C
29.097	819393	5.0	B	112		3	1.5	137	0.05	B		10	5.2	Y	1	Harris,L.A	D
29.099	819394	3.9	B	113		3		97	0.05	B		20	5.0	Y	1	da Silva,L.A.L	E
29.102	819395	5.3	M	113			1.50	100	0.152	N	5	29	5.4	Y	1	Smith,A	F
29.111	819396	4.8	B	3B		9			0.08	B		11	5.2	Y	6	Gorski,L	
29.125	819397	5.2	B	112	16	2			0.05	B		7	3.9		1	Lairret,R	
29.125	819398	4.9	B	113	15.8	5	0.37	270	0.050	B		7	4.5C	Y	1	Will,M	G
29.142	819399	5.2	B	113		4			0.050	B		20	6.4	Y	1	Careello,S	
29.188	819400				10.9	5	0.58	270	0.050	R	12	24	4.5C	Y	1	Will,M	G
29.208	819401	4.5	M	113		6	2.5	100	0.279	SC	10	166	5	Y	1	Kemble,L.J	H
29.22	819402	4.4	3B			4	30	80		EY			6.0	Y	16	Morris,C.S	I
29.24	819403	4.4	M	3B	17	5			0.050	B		10	6.0	Y	16	Morris,C.S	
29.26	819404	4.5	M	3B	15	5			0.080	B		20	6.0	Y	16	Morris,C.S	
29.2653	819405				20					EY			6.3	Y	3	Cook,A.J	J
29.31	819406	4.0	M	3B			10	95		EY			6.5	Y	14	Keen,R	K
29.354	819407	5.3	S	TIRION	17	3			0.050	B		10	2.8			Witte,F	L
29.36	819408	4.3	S	3B, 113	23	5			0.023	B		3				Jones,A	
29.36	819409						1.4		0.050	B		7	5.9			Jones,A	M
29.37	819410	8.9	V	SAO					0.317	N	5	86				Jones,A	N
29.375	819411	4.6	S	3B			5	105		EY			6.1	Y	1	Seargent,D	O
29.410	819412	4.8	B	3B	50	4	3	100	0.05	B		10		Y	1	Tregaskis,T.B	P
29.410	819413	4.8	3B				0.5	100		EY			5.5	Y	1	Tregaskis,T.B	Q
29.42	819414	4.2	A							EY			6.3	Y	1	Lovejoy,T	
29.458	819415	4.3	S	3B			15			EY			6.0	Y	2	Garradd,G	
29.467	819416	4.5	S	3B	15	4	2	90	0.07	B		10	2.5	Y	1	Kobayashi,J	
29.476	819417	5.3	B	113		3			0.050	B		20	6.2	Y	1	Castroillon,M.E	
29.480	819418	5.0	M	113	22	6			0.12	B		8	4.5C	Y	1	Kato,T	
29.48	819419	4.5			15	6	1		0.10	N		20	5.8	Y	1	Washi,S	S
29.485	819420			3B	35	6		100	0.07	B		24		Y	1	Tregaskis,T.B	T
29.490	819421	5.3	B	3B					0.07	B		10	4.1	Y	1	Date,M	
29.493	819422	5.3	B	113,112	15	3	1		0.05	B		7	4.0	Y	1	Hayashi,H	
29.494	819423	5.1	S	113	12.9	5			0.05	B		7	3.0	N	1	Kasai,K	
29.500	819424	4.9	B	3B			0.7		0.035	B		7		Y	2	Okada,M	
29.50	819425	5.0	S	3B	12	6			0.07	B		10	4.0	Y	1	Yasuki,M	
29.51	819426	4.7	S	AAVSO	10	4			0.07	B		10	4.5	Y	1	Hayashi,A	
29.524	819427	4.6	M	112,113	17	4	2	100	0.08	B		11	6	Y	4	Mitsuma,S	
29.53	819428	3.8	M	3B	15	6	0.5	90	0.08	B		20	5.0C	Y	1	Oka,A	
29.53	819429	7			5	5			0.15	N	6	23	3	Y	7	Tanikawa,M	
29.53	819430	4.5	B		30	7			0.05	B		10	5.0	Y	1	Uda,K	
29.54	819431	4.4	M	3B, 113	16.0	6	5	130	0.080	B		11	5	Y	2	Watanabe,N	U
29.562	819432	4.0	S	113	9	6	2.0		0.080	B		20		Y	1	Batza,H	V
29.563	819433	5.0	B	113	15	5	3		0.070	B		10	5.5	Y	1	Nakamura,Y	
29.61	819434	3.8	B	113						EY			6.1	Y		Clark,M.L	
29.62	819435	3.9	S	113					0.03	R		6		Y		Clark,M.L	
29.62	819436	4.3	S	113	16	7	3.3		0.25	N	5	38	6.1	Y		Clark,M.L	N
29.71	819437				8	5			0.20	N		7	80			Rudakov,G	
29.75	819438	5.4	B	M		4			0.05	B		7				Mamedov,V	
29.75	819439	5.7	B	M	10		0.4		0.04	B		12				Rudenko,S	
29.77	819440	5.5	B	E	22				0.11	B		20				Krylov,A	
29.77	819441	5.4	B	E					0.11	B		20				Kasirip,I	
29.77	819442	5.4	V	E	23					EY						Kurtsov,S	
29.77	819443	5.3	B	E	23				0.08	B		8				Oskin,E	
29.77	819444	5.4	B	E					0.11	B		20				Belyaev,D	
29.77	819445	5.2	B	E					0.08	B		8				Navalibin,M	
29.77	819446	5.0	B	E	20				0.08	B		8				Maksimov,S	
29.77	819447	5.4	B	E	17				0.11	B		20				Misubin,A	
29.77	819448	5.2	B	E						EY						Paschenko,A	
29.77	819449	5.2	B	E					0.08	B		8				Tatarnikov,A	
29.77	819450	5.3	V	E						EY						Filimonchev,S	
29.77	819451	5.3	B	E	18				0.08	B		8				Maylisov,P	
29.77	819452	5.2	V	E	20					EY						Bukotkin,A	
29.77	819453	5.2	B	AAVSO	20				0.08	B		8				Golubev,V	
29.78	819454	5.6	B	M	12					EY						Rudenko,S	
29.79	819455	4.4	B	E	20	5	3	100	0.05	B		7				Mormil,V	
29.791	819456	5.4	M	3B					0.035	B		9	6.4	Y	1	Begbie,M.J.R	
29.799	819457				11.1	5	6.0	100	0.30	N	8.5	102	6.4	Y	1	Begbie,M.J.R	X
29.802	819458	4.9	M	113	30	6			0.05	B		12	5.5	Y	1	Tanti,T	Y
29.806	819459	5.2	M	3B	17	5	6.1	107	0.08	B		11	5.2	Y	2	Fleet,R.W	Z
29.809	819460	4.4	M	3B		3	0.6	102		EY			5.2	Y	2	Fleet,R.W	
29.81	819461	5.1	B	E	6	1	0.1	190	0.05	B		7				Kolomeyets,S	
29.81	819462	5.2	B	E	6	1	0.1	190	0.07	N	8	33				Pashko,D	
29.81	819463	5.3	B	E	7	3	0.6	268	0.11	N		30				Yurchenko,Yu	
29.819	819464	5.4	S	3B	17	5			0.08	B		10	4.0	Y	1	Znasik,M	
29.823	819465	6.0	S	112					0.05	B		7		Y	1	Dziura,W	
29.823	819466	6.0	M	CZ		4			0.055	R	6	12				Silhan,J	a
29.833	819467	5.0	M	112	15	5	0.5	100	0.089	R	5.5	18	5.2	N	1	Ventura,F	
29.840	819468	5.9	B	113	16	4			0.066	R	15.2	28	4.0	Y	1	Gora,D	
29.844	819469	5.0	B	3B		4			0.05	B		7	5	Y	2	Paradowski,M	
29.85	819470	5.2		113	15	4			0.050	B		10	5	Y	1	Ward,A	
29.854	819471	5.2	M	CZ		4			0.06	B		12	3.0	Y	3	Rapavy,P	
29.86	819472	5.0	B	AAVSO			1	115	0.11	B		20				Chernis,K	
29.875	819473	5.0	3B						0.030	B		8	4.0	Y	2	Kieltyka,G	
29.875	819474	5.8	M	CZ	25	4			0.05	B		7				Silhan,J	
29.882	819475	4.9	M	CZ	20				0.05	B		7				Kucera,P	
29.882	819476	4.7	S	3B	18.0 11.0	5	0.10	86	0.050	B		10	4.5	Y	3	Abbott,J	b
29.888	819477	5.0	S	112	17	5			0.05	B		10	3.2	Y	1	Hurst,G.M	
29.893	819478				17	5	0.42	98	0.08	B		15	3.2	Y	1	Hurst,G.M	c
29.90	819479	3.9	B	3B						EY			6.0		36	Shanklin,J.D	d
29.90	819480	4.5	S	3B					0.05	B		7	6.0		36	Shanklin,J.D	e
29.91	819481	6.0	B	DCS 12		3			0.080	B		15	5 C	N			

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Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
29.941	819483	5.1	S	3B, 112	12	2	0.4	80	0.050	B		10	5.3	N	2	Rogers, J.H	f
29.978	819484	5.1	B	113		3	2.33		0.050	B		20	6.4	Y	1	Lovera, A	
NOTE A	Coma diameter and tail length approximate.																
NOTE B	Circular, only slightly condensed coma containing a sharp, tight, very small condensation which appears almost stellar at times. Condensation well under 60" in diameter.																
NOTE C	Beautiful sight.																
NOTE D	With this magnitude 5.0, Halley ceased to be visible in my locality. The night was clear, without moon.																
NOTE E	Moonlight.																
NOTE F	Seeing good.																
NOTE G	(PA value may have been incorrectly determined. Ed.)																
NOTE H	Comet about 19 deg. elevation at my latitude; found with coordinates in bright twilight at about 0350 UT; then with binoculars in late twilight; observed for quite some time, even glimpsed with averted vision, naked eye about 0530 UT; tail followed out to almost 3 deg. with binocs. and then by sweeping with telescope. Coma diameter 7-8'.																
NOTE I	Multiple tails define the shape of the fan tail.																
NOTE J	Tail north boundary 30 deg. at PA 100, south boundary 16 deg. at PA 106.																
NOTE K	Observation from Tahiti.																
NOTE L	Fazy, very difficult. (Translated by IHW staff. Ed.)																
NOTE M	Tail PA 85-104.																
NOTE N	Nucleus. Small nucleus surrounded by bright condensation.																
NOTE O	Tail length approximate.																
NOTE P	Clear. (Observer gave limit as approximately 10. Ed.)																
NOTE Q	PA approximate.																
NOTE R	Naked eye tail length, lower limit.																
NOTE S	(Observer indicated "Y" method. Ed.)																
NOTE T	Hard to define tail; faint and broad.																
NOTE U	Chart 112 also used.																
NOTE V	Moonlight. (Observer gave limit as 10.5. Ed.)																
NOTE W	PA of tail is 107-98.																
NOTE X	Antitail in PA 270. Tail measurement refers to dust tail only.																
NOTE Y	Seeing good, transparency excellent/good. Clouds.																
NOTE Z	Midpoint on tail: 2.9 deg. at PA 106. End point of tail: 6.1 deg. at PA 107.																
NOTE a	Mist.																
NOTE b	Comparison stars (4.1, 5.1), (4.5, 5.2). The coma's long axis was oriented along PA 109-289. The northern "tail-lobe" was 0.10 deg. long at PA 86. The southern "tail-lobe" was 0.03 deg. long at PA 152.																
NOTE c	0.42 deg. tail is broad 5' width tail. 0.20 deg. tail length is approximate; tail suspected only.																
NOTE d	Cloud.																
NOTE e	Tail 10 degrees wide.																
NOTE f	Coma slightly pear-shaped; no nucleus. Tail suspected; length and PA approximate.																

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
29.118	831184	1.32	0.050	B		7	20	4.5	1	Will, M	A
29.18	831185	0.72	0.050	R	12	24	26	4.5	1	Will, M	B
29.53	831186	1.39	0.15	N	6	23	14	3	7	Tanikawa, M	
29.806	831187	4	0.08	B		11	5.2	2		Fleet, R.W	
29.840	831188	0.28	0.30	N	8.5	102, 212	22	6.4	1	Begbie, M.J.R	D
29.865	831189	0.08	0.125	N	5.8	24, 28, 40	10	3.5	1	Riccabone, G	E
NOTE A	The coma of the comet has three concentric zones of brightness. Zone 3 seems to parallel some of the tail in magnitude and nebulosity. Zone 2 is brighter and more intense in visual texture. Zone 1 is best described as a sudden peak in the brightness of the coma at its center and cannot be accurately measured in angular size. The tail is of a conical shape overall. However, a brighter "strip-like" patch appears in the center region of the tail and extends the entire length of the tail of comet Halley. Inner coma 6.58'; outer coma 15.80'; tail 22.38' at PA 270. Dark adapted.										
NOTE B	The tail appeared to be cone shaped and symmetric in its overall shape. Note the slight curvature along the outer boundary of the cone shaped tail. A dark lane, (actually white in the drawing) labeled no. 1, runs the length of the tail and is slightly visible to the eye just displaced from the center region of the tail, in the tail's northern half. Two other dark lanes are present in the northern sector. Labeled no. 2 and no. 3 they were not nearly as visible as no. 1. Two stars were observed in the tail and the one near the vertex or end of the tail was the brighter. Coma diameter 10.91'; inner coma diameter 3.60'; tail length 34.91' at PA 270. Dark lanes 1, 2, 4 3 also at PA 270. Dark adapted.										
NOTE C	Tail end point at PA 107. Suspected tail at PA 95. (Duration not indicated. Time of observation is assumed to be start time. Ed.)										
NOTE D	Anti-tail centered on PA 280. Extended fan centered on PA 330. Vertex distance 5.5 arc min.; semi latus rectums P1 = 6.9 arc min., P2 = 6.4 arc min. Antitail = 11 arc min. from central condensation. [sic] An antitail, with a faint spike near its centre was observed. A second, possibly associated feature, a fan-like extension to the coma was also seen but was less prominent.										
NOTE E	Intense city lights interfered with the observation. Magnifications of 60 and 80 also used. Two drawings included.										

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
29.024	851938	0.135	2.8		15.2 x10.2	8.00	Kodak 2415		Y	C	601/S	2	Buchanan, W.T	A
29.077	851939	0.225	1.7	0.140	9.1 x 6.1	3.00	Kodak 2415		Y	S	1/P	1	Dilsizian, R	
29.111	851940	0.305	1.5	0.203	6.8 x 4.5	2.50	Kodak 2415		Y	X	265/P	1	Sabia, J.D	B
29.131	851941	0.210	4		9.8 x 6.5	18.00	Polaroid 612		N	X	4/P	2	Carragan, W	C
29.178	851942	0.305	1.5	0.203	6.8 x 4.5	5.00	Kodak 2415		Y	X	266/P	1	Sabia, J.D	B
29.197	851943	0.500	3.6	0.140	4.1 x 2.7	10.00	3M 1000	1000/	N	O	2/N	7	Edberg, S.J	
29.197	851944	0.200	4		10.3 x 6.9	10.00	Kodak Tri-X	400/	N	O	15/C	7	Edberg, S.J	
29.204	851945	0.500	3.6	0.140	4.1 x 2.7	5.00	3M 1000	1000/	N	O	3/N	7	Edberg, S.J	
29.204	851946	0.200	4		10.3 x 6.9	5.00	Kodak Tri-X	400/	N	O	16/C	7	Edberg, S.J	
29.207	851947	0.500	3.6	0.140	4.1 x 2.7	1.00	3M 1000	1000/	N	O	4/N	7	Edberg, S.J	
29.207	851948	0.200	4		10.3 x 6.9	1.00	Kodak Tri-X	400/	N	O	17/C	7	Edberg, S.J	
29.217	851949	0.500	8		4.1 x 2.7	5.00	Kodak Tri-X	400/27	N	X	034/P	1	Bro, M	
29.219	851950	0.200	4		10.3 x 6.9	4.50	3M 1000	1000/	N	O	5/N	7	Edberg, S.J	
29.219	851951	0.500	3.6	0.140	4.1 x 2.7	4.50	Ektachrome	400/	N	O	3/N	7	Edberg, S.J	
29.219	851952	0.050	2.8		39.6 x27.0	4.50	Kodak Tri-X	400/	N	O	18/C	7	Edberg, S.J	
29.223	851953	0.200	4		10.3 x 6.9	5.00	3M 1000	1000/	N	O	6/N	7	Edberg, S.J	
29.223	851954	0.500	3.6	0.140	4.1 x 2.7	5.00	Ektachrome	400/	N	O	4/N	7	Edberg, S.J	
29.223	851955	0.050	2.8		39.6 x27.0	5.00	Kodak Tri-X	400/	N	O	19/C	7	Edberg, S.J	
29.224	851956	0.500	8		4.1 x 2.7	5.00	Kodak Tri-X	400/27	N	X	035/P	1	Bro, M	
29.225	851957	2.306	5	0.45	0.9 x 0.6	18.00	Kodak Tri-X		N	M	27/P	1	Webb, R	D
29.228	851958	0.200	4		10.3 x 6.9	10.00	3M 1000	1000/	N	O	7/N	7	Edberg, S.J	
29.228	851959	0.500	3.6	0.140	4.1 x 2.7	10.00	Ektachrome	400/	N	O	5/N	7	Edberg, S.J	
29.228	851960	0.050	2.8		39.6 x27.0	10.00	Kodak Tri-X	400/	N	O	20/C	7	Edberg, S.J	
29.232	851961	0.200	4		10.3 x 6.9	1.00	3M 1000	1000/	N	O	8/N	7	Edberg, S.J	
29.232	851962	0.500	3.6	0.140	4.1 x 2.7	1.00	Ektachrome	400/	N	O	6/N	7	Edberg, S.J	
29.232	851963	0.050	2.8		39.6 x27.0	1.00	Kodak Tri-X	400/	N	O	21/C	7	Edberg, S.J	
29.241	851964	0.050	2.8		39.6 x27.0	1.00	3M 1000	1000/	N	O	9/N	7	Edberg, S.J	
29.241	851965	0.500	3.6	0.140	4.1 x 2.7	1.00	Kodak Tri-X	400/	N	O	22/C	7	Edberg, S.J	
29.241	851966	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	20/P	3	Yea, B	E
29.242	851967	0.050	2.8		39.6 x27.0	1.00	3M 1000	1000/	N	O	10/N	7	Edberg, S.J	
29.243	851968	0.050	2.8		39.6 x27.0	1.00	3M 1000	1000/	N	O	11/N	7	Edberg, S.J	F

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Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
29.244	851969	0.500	3.6	0.140	4.1 x 2.7	5.00	Kodak Tri-X	400/	N	O	23/C	7	Edberg, S.J	
29.249	851970	0.080	4		25.4 x17.1	5.00	Kodak Tri-X	400/27	N	X	033/P	1	Bro, M	G
29.252	851971	0.050	2.8		39.6 x27.0	10.00	3M 1000	1000/	N	O	12/N	7	Edberg, S.J	H
29.252	851972	0.500	3.6	0.140	4.1 x 2.7	10.00	Kodak Tri-X	400/	N	O	24/C	7	Edberg, S.J	
29.259	851973	0.050	2.8		39.6 x27.0	5.00	3M 1000	1000/	N	O	13/N	7	Edberg, S.J	H
29.259	851974	0.500	3.6	0.140	4.1 x 2.7	5.00	Kodak Tri-X	400/	N	O	25/C	7	Edberg, S.J	
29.447	851975	0.135	3.5		15.2 x10.2	20.00	Ektachr. 400		N	X	29/S	1	Tregaskis, T.B	I
29.458	851976	0.135	3.5		15.2 x10.2	10.00	Ektachr. 400		N	X	30/S	1	Tregaskis, T.B	I
29.464	851977	0.085	2.4		23.9 x16.1	27.00	Kodak 2415		Y	O	83/S	2	Garradd, G	J
29.464	851978	0.135	3.5		15.2 x10.2	5.00	Ektachr. 400		N	X	31/S	1	Tregaskis, T.B	I
29.469	851979	0.055	1.2		36.2 x24.6	2.00	Ektachr. 400		N	X	32/S	1	Tregaskis, T.B	I
29.473	851980	0.055	2.8		36.2 x24.6	8.00	Ektachr. 400		N	X	33/S	1	Tregaskis, T.B	K
29.479	851981	0.055	4		36.2 x24.6	8.00	Ektachr. 400		N	X	34/S	1	Tregaskis, T.B	L
29.484	851982	0.180	2.8		11.4 x 7.6	20.00	Kodak 2415		Y	O	84/S	2	Garradd, G	M

NOTE A (Observer's image identifier is F-126-01. Ed.)

NOTE B Photograph made by J. Kamichitis and J.D. Sabia.

NOTE C Lens has zoom range of 70 to 210 mm. Film ISO 20000. Photograph made by Julie and William Carragan.

NOTE D Windy. Film pushed to ASA 1000. Standard 3 min.-3 min. processing.

NOTE E (Observer's image identifier is 24. Ed.) Instrument is Schmidt camera.

NOTE F Start time and exposure duration uncertain.

NOTE G Zoom lens 80-210 mm f/3.8-4 used at 80 mm f/4.

NOTE H Start time and exposure duration uncertain.

NOTE I Push processed to 800 ASA.

NOTE J Lens aperture stopped down from f/2.0 to f/2.4. Film excessively hypered, causing severe fogging.

NOTE K Lens aperture stopped down from f/1.2 to f/2.8. Push processed to 800 ASA.

NOTE L Lens aperture stopped down from f/1.2 to f/4. Push processed to 800 ASA.

NOTE M Film was excessively hypered (70 deg. C), causing severe fogging.



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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	
30.05	819485	4.4:	B	IHW BAA						EY						Green,D.W.E		
30.05	819486	4.1	S	IHW BAA	36	3			0.035	B		7				Green,D.W.E	A	
30.052	819487	5.0	B	113	9				0.040	B		8	5.3	Y	1	Levai,R	B	
30.059	819488	5.2	S	3B					0.035	B		7	4.9	Y	4	Rudak,D.M		
30.059	819489	4.7	M	113,112	10	4	0.6	93	0.05	B		7	3.1	Y	1	DeYoung,J.A		
30.063	819490	5.3	B	3B					0.05	B		7	4.5C	Y	2	Lupianez,B		
30.072	819491	4.2	B	112	4.5	1	0.7	125	0.06	R	12	56	5.5	Y	1	Onofre D.,D		
30.073	819492	3.9	B	112		6		110	0.05	B		20	5.0	Y	1	da Silva,L.A.L		
30.073	819493	5.2	M	112			2.00	90	0.050	B		10	5.2	Y	1	Smith,A		
30.083	819494	5.3	B	112					0.080	B		20	4.8	Y		Smith,D		
30.102	819495	5.2	B	3B		7			0.08	B		11	5.4	Y	6	Gorski,L		
30.104	819496	5.1	B	AAVSO	18	3			0.040	B		10	5.2	Y	1	Alves,A.A		
30.106	819497	5.3	B	3B	8.3	1			0.05	B		7	4.1C	Y	1	Dodd,W.J		
30.135	819498	5.4	S	112	8	4			0.05	B		7	5	C	Y	3	House,R.R	C
30.139	819499	5.0	B	113,112	18.0	5			0.050	B		7	4.5C	Y	1	Will,M		
30.16	819500	5.5	B	112	12	4			0.080	B		20		Y		Kronk,G		
30.16	819501	5.7	B	112	6.6	6		102	0.335	N	4.5	56		Y		Kronk,G	D	
30.210	819502	5.4	B	3B		1			0.03	B		8	3.1CM	Y	2	Giraudi,J.D	E	
30.21	819503	4.9	S	3B	6.0	4			0.080	B		11	5.0	Y	2	Spratt,C.E	F	
30.22	819504	4.6	M	3B	21	4	18	85	0.050	B		10	6.0	Y	16	Morris,C.S		
30.2208	819505	4.7	S	DCS	18	4	0.30	89	0.080	B		20	5.4		3	Machholz,D		
30.226	819506	5.7	B	3B		1			0.03	B		8	3.1CM	Y	2	Giraudi,J.D	E	
30.23	819507	4.6	B	3B		3	30	95		EY		6.0		Y	16	Morris,C.S		
30.31	819508	4.6	B	3B			25	95		EY		6		Y	19	Hale,A	G	
30.31	819509	4.7	M	3B					0.05	B		10	6	Y	19	Hale,A	G	
30.340	819510	5.4:	S	TIRION	14	3			0.050	B		15	2.5			Witte,F	H	
30.35	819511	4.6	S	113	30	3			0.023	B		3				Jones,A		
30.35	819512				20	5	3		0.050	B		7	5.9			Jones,A	I	
30.35	819513				7	8			0.317	N	5	86				Jones,A	J	
30.403	819514	4.5		3B		18			EY			6.0		Y	2	Garradd,G		
30.455	819515	5.0:	B	3B	20	4	4		0.035	B		7	5.5	Y	7	Gomez,A	K	
30.458	819516	4.6	S	3B			5	100	EY			6.1		Y	1	Seargent,D	L	
30.465	819517	5.2	S	3B	3.8	3			0.12	N	6	36	2.0C	Y	1	Kishi,A		
30.472	819518	4.7	S	113	14.4	5			0.05	B		7	4.0	N	1	Kanai,K		
30.476	819519	5.5	B	113	14.4	5			0.05	B		7	4.0	N	1	Kanai,K		
30.48	819520	5.4	S	112		3			0.065	R	7.7	16	3.0	N	1	Momose,M		
30.486	819521	4.9	M	112,113	13	4	0.50		0.08	B		11	4.5	Y	1	Mitsuma,S	M	
30.486	819522								0.16	N	6.3	31	4.5	Y	1	Mitsuma,S	N	
30.49	819523	4.8	S	AAVSO	12	4			0.07	B		10	4.5	Y	1	Hayashi,A		
30.50	819524	4.7	S	AAVSO	15	5			0.13	N	6.3	24	4.5	Y	1	Hayashi,A		
30.712	819525	5.5	B	112	20	1	3	200	0.065	B		20	5.5	Y	1	McBain,J	O	
30.78	819526	4.8:	B	AAVSO					0.08	B						Churyumov,K		
30.78	819527	5.8	B	E	6				0.04	B		12				Rudenko,S		
30.78	819528	5.5	B	E					0.08	B						Belyaev,D		
30.78	819529	5.5	B	E	17				0.08	B						Misuhin,A		
30.78	819530	5.5	B	E		5			0.08	B		8				Ivanov,V		
30.78	819531	5.3	B	AAVSO	20				0.08	B		8				Golubev,V		
30.78	819532	5.6	V	E	20				EY							Bukotkin,A		
30.79	819533	5.9	B	M	10				0.05	B		7				Konstantinov,S		
30.79	819534	4.7	B	E	15	5	1.5	110	0.05	B		7				Mormil,V		
30.792	819535	5.5	M	113					0.035	B		9	6.4	Y	1	Begbie,M.J.R		
30.80	819536	5.3		113	15	4			0.050	B		10	5	Y	1	Ward,A		
30.807	819537				8.3	5	5.0	92	0.30	N	8.5	102	6.4	Y	1	Begbie,M.J.R	P	
30.823	819538	6.5	M	3B, 113	45	3			0.067	R	12	60	5.5	Y	1	Kosinski,J	Q	
30.837	819539	5.6	S	3B	17	4			0.08	B		10	4.2	Y	1	Znasik,M		
30.843	819540			112	14	1			0.080	R	6.2	31	2.5CT	N	2	Richert,M		
30.847	819541	5.4		113					EY			5.5		Y	1	Chodorowski,F	R	
30.849	819542	5.0	S	112		5			0.080	B		15	3.5	Y	1	Korth,S	S	
30.851	819543	5.3	M	113					0.06	R	4.5	10	5.5	Y	1	Chodorowski,F	R	
30.854	819544	5.7	B	112	11	4			0.05	B		10	4.5C	Y	1	Menichetti,R		
30.854	819545				10	5			0.064	R	12	32	5.5	Y	1	Chodorowski,F	R	
30.854	819546	6.0	B		15	3			0.050	B		10	4.5	Y	1	Linke,H		
30.854	819547	5.8	M	CZ	10	4			0.05	B					1	Silhan,J	T	
30.86	819548	5.2	B	AAVSO	20	5	1	113	0.11	B		20				Chernis,K		
30.861	819549	4.4	M	112	38	7			0.030	B		8	5.0	Y	14	Villa,M		
30.87	819550	5.5	B	DCS 13	25	3			0.063	B		8	5	C	N	1	Geenen,J.J	
30.87	819551	6.2	B	DCS 12		3			0.080	B		15	5	C	N	1	Keijmel,P.C	
30.875	819552	5.2	M	CZ		3			0.08	B		10	3.0C	Y	1	Rapavy,P		
30.88	819553	6.0	B	3B		5			0.080	B		20				Jannink,D.W	U	
30.88	819554	6.2	S	DCS 13		2			0.080	B		15	3	C	N	1	Scholten,A	
30.88	819555	4.8	S	112	20	6	0.5		0.100	B		14	4.5	Y	1	van Loo,F.R		
30.90	819556	3.9	S	3B	18	6	1.5		0.060	B		12	6	Y	3	van de Weg,R.L.W	V	
30.90	819557	4.2	B	3B	18	6	1.5		0.060	B		12	6	Y	3	van de Weg,R.L.W	V	
30.906	819558	5.7	B	SAO,IHW	7.2	3			0.125	R	6	35	2.0	Y	1	Guthier,O		
30.907	819559	4.8:	S	112	6	4			0.152	N	5	44	3.8	Y	2	Moeller,M	W	
30.920	819560	4.9	S	113	12	3		90	0.08	B		11	4	Y	1	Gainsford,M.J	X	
30.927	819561	5.0	S	113				130	0.25	N	6	60	4	Y	1	Gainsford,M.J	Y	
30.931	819562	4.8	M	3B	12	5			0.050	B		7		Y	1	Mikuz,H	Z	
30.938	819563	5.3	B	AAVSO	12	2			0.040	B		10	5.2	Y	1	Alves,A.A		
30.993	819564	5.6	B	112		2			0.05	R	8	7	5.5C	Y	1	Martinez,C	a	

NOTE A Coma diameter approximate.

NOTE B Magnitude estimate uncertainty +/-0.2 mag.

NOTE C Only used two comparison stars for magnitude estimate. No tail seen.

NOTE D Tail fanned to PA 65 deg.

NOTE E At the limit of visibility in this instrument. (Translated by IHW staff. Ed.)

NOTE F Hint of tail.

NOTE G Naked-eye tail is very long but is extremely faint. Difficult to tell where tail ends and sky begins.

NOTE H Very difficult. (Translated by IHW staff. Ed.)

NOTE I Tail PA 95-110.

NOTE J Condensation about 2' diameter.

NOTE K Wind. Coma diameter exceeds 20 arc min.; tail length approximate.

NOTE L Cloud.

NOTE M Tail PA 95 to 100.

NOTE N 10&gt;.

NOTE O (PA value appears to be incorrect. Ed.)

NOTE P Antitail in PA 280. Tail measurement refers to dust tail only.

NOTE Q Chart 112 also used.

NOTE R Very clear sky.

NOTE S Coma diameter 8-10 arc min.

NOTE T Mist.

DATE: 30 APR 1986

DATE: 30 APR 1986

NOTE U Binocular limit is 7.5.  
 NOTE V Tail length is lower limit. PA 95 to 115.  
 NOTE W Coma diameter approximate. Hazy.  
 NOTE X Haze. Coma diameter 12'+.  
 NOTE Y Haze. Coma dia. = "large".  
 NOTE Z Good cond.  
 NOTE a At 23:55 T.U. with another comparison stars mag = 5.7. [sic]

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
30.123	831190	0.25	0.20	N	8	120	25	6	1	Vargas B.,A.G	A
30.156	831191	4	0.050	B		10	32	5.0	2	Robinson,P.C	B
30.836	831192	0.30	0.30	N	8.5	102,212,425	18	6.4	1	Begbie,M.J.R	C
30.858	831193	0.08	0.36	SC	11	325	10	3.5	1	Korth,S	D
30.869	831194	0.09	0.125	N	5.8	24, 28, 40	37	3.5	4	Riccabone,G	E

NOTE A DC 5; coma diameter: 7.5' approx. The coma diameter appear a little oval, with its major axis at PA 50 approx. It will be a illusion caused by the bright tail and the star near the zone. [sic] A remarkable tail central division was observed.  
 NOTE B Dust tail at PA 90-105; this main tail had straight, well defined edges and was very long (>100 deg.)! It went to the Oph. Milky Way. Ray at PA 100; the ray originated just NE of the center of coma and then ran along southern border of main tail as in drawing. Tail at PAs 0 (80'), 5 (180'), and 10 (280'); tail curved gracefully northward to 3 deg. length. Fan at PAs 180 (16'), 145 (80') to 100; fan was very dim. The tails were all plotted on a star chart at the site for best accuracy. Zodiacal light interfered with the observation. (Additional drawings supplied made using naked eye. Ed.)  
 NOTE C Antitail centred on PA 270. Extended fan centred on PA 330. Nuclear fan centred on PA 240. Jet centred on PA 200. Nuclear fan centred on PA 350. Vertex distance = 4.2 arc min.; semi latus rectums P1 = 5.9 arc min., P2 = 5.2 arc min. Antitail = 11.6 arc min. from central condensation. The antitail is slightly fainter, as is the extended fan. A deal of activity [sic] is apparent in the central condensation with two fans and one jet quite prominent. An unusual dark strip is apparent in the tail as if there is no tail material there. (Two drawings are included in this listing: one made at magnifications of 102, 212, and 425 and scale 0.33 arc min./mm and one made at a magnification of 425 and scale 0.09 arc min./mm. Ed.)  
 NOTE D Jet 3-4" long at PA 180.  
 NOTE E Magnifications of 60 and 80 also used. Two drawings included. City lights and twilight interfered with the observation.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdag	Id/Typ	Site	Observer(s)	Notes
30.064	851983	0.225	1.7	0.140	9.1 x 6.1	2.50	Kodak 2415		Y	S	2/P	1	Dilsizian,R	
30.201	851984	0.540	1.8	0.30	3.8 x 2.5	20.00	Kodak 2415		N	X	01/P	1	Emerson,G	A
30.252	851985	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	21/P	3	Yen,B	B
30.398	851986	0.085	2.4		23.9 x16.1	20.00	Kodak 2415		Y	O	85/S	2	Garradd,G	C
30.446	851987	0.055	2.8		36.2 x24.6	22.50	Kodak 2415		Y	O	87/S	2	Garradd,G	D
30.469	851988	0.180	2.8		11.4 x 7.6	22.00	Kodak 2415		Y	O	86/S	2	Garradd,G	E

NOTE A (Observer's image identifier is 1986043001. Ed.)  
 NOTE B (Observer's image identifier is 26. Ed.) Instrument is Schmidt camera.  
 NOTE C Film excessively hypered, causing severe fogging. Lens aperture was stopped down from f/2.0 to f/2.4.  
 NOTE D Film excessively hypered (65-70 deg. C), causing severe fogging.  
 NOTE E Film was excessively hypered (65-70 deg. C), causing severe fogging.

DATE: 1 MAY 1986

DATE: 1 MAY 1986

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	
1.034	819565	3.9	B	112		5		109	0.05	B		20	4.5	Y	1	da Silva,L.A.L		
1.059	819566	5.5	B	3B		7	0.5	100	0.035	B		7	5.2	Y	1	Stephan,C	A	
1.10	819567	4.9	B	113					0.050	B		10	6	Y	1	Bortle,J.E		
1.10	819568	4.7	S	113	12	5	4.5	105	0.050	B		10	6	Y	1	Bortle,J.E		
1.10	819569				18	5	5.0	105	0.050	B		7				Bortle,J.E		
1.116	819570	5.3	M	3B					0.035	B		7	4.0C	Y	1	Allen,E		
1.135	819571	5.4	B	AAVSO	12	2	0.4	90	0.115	N	7.8	30	5.2	Y	1	Alves,A.A		
1.357	819572	5.5	S	TIRION	13	4	1.3		0.050	B		15	4.5			Witte,F	B	
1.38	819573	4.9	S	113					0.023	B		3	5.2	Y		Jones,A	C	
1.38	819574					4	1		0.050	B		7				Witte,F		
1.385	819575		S	TIRION	16	5			0.150	M	15	56	4.5			Seargent,D		
1.406	819576	4.7	S	3B						EY		15	6.1	Y	1	Seargent,D		
1.406	819577						3.5	100	0.08	B		15				Witte,F		
1.413	819578	5.6	S	TIRION	18	5	1.1		0.050	B		10	4.3			Witte,F		
1.74	819579	6	B	M						EY						Rudenko,S		
1.75	819580				5	5			0.20	N		80				Rudenko,S		
1.76	819581	5.9	B	M		5	0.6	117	0.04	B		12				Rudenko,S		
1.76	819582	7.0	B	M					0.10	R						Poroshin,A		
1.77	819583	5.2	B	AAVSO					0.08	B						Churyumov,K		
1.78	819584	5.2	B	AAVSO					0.08	B						Churyumov,K		
1.785	819585	5.8	M	112	12	6	4.4	110	0.04	B		12	6.2	Y	4	Henshaw,C	D	
1.795	819586	5.7	M	113					0.035	B		9	6.4	Y	1	Begbie,M.J.R		
1.802	819587				7.1	6	3.2	105	0.30	N	8.5	102	6.4	Y	1	Begbie,M.J.R	E	
1.813	819588	5.2	M	112	9.5	4			0.089	R	5.5	18	5.0	N	1	Ventura,F		
1.819	819589	5.9	S	3B	24	4			0.06	B		12	4.9	Y	1	Znasik,M		
1.819	819590	5.6	M	112					0.06	R	4.5	10	6.0	Y	1	Chodorowski,F		
1.823	819591			112		3			0.064	R	6.3	20	3.0TC	N	1	Maciejewski,W		
1.828	819592	5.7	M	AAVSO	5	4			0.156	N	10	54	6.2			Kosa-Kiss,A	F	
1.83	819593	5.7	B	M	5	4	0.5	272	0.11	N		30				Yurchenko,Yu		
1.833	819594	5.7	S	112	11	4			0.13	N	5.5	36	5	C	Y	1	Menichetti,R	
1.833	819595	5.8	S	3B	28	5			0.08	B		10	4.9	Y	1	Znasik,M		
1.837	819596	4.4	B	CZ	15	5			0.10	O		25	4.5C	Y	1	Micek,I		
1.840	819597	5.5		112						EY		6.0		Y	1	Chodorowski,F		
1.840	819598	5.8							0.080	B		15	2	Y	1	Nagele,A	G	
1.840	819599	5.6	B	112	6	7	0.5	40	0.050	B		12	3.0	Y	1	Mosch,J		
1.842	819600	6.0	B	112	14	4			0.066	R	15.2	28	5.5	Y	1	Gora,D		
1.8437	819601	5.7	B	112	15	7		80	0.080	B		11	4.5C	N		Broglioni,A	H	
1.844	819602	5.3	S	112	18	6	1.9	115	0.08	B		30	5.5	Y	1	Campos,J	I	
1.844	819603				12	5			0.064	R	12	32	6.0	Y	1	Chodorowski,F		
1.844	819604	5.4	M	112	18	6	0.5	136	0.08	B		11	5.5	Y	1	Gubo,H		
1.844	819605	5.5	B	112	7.8	4			0.10	B		14	4.0	Y	1	Hasubick,W		
1.844	819606	5.5	B	112					0.03	B		8	4.0	Y	1	Hasubick,W		
1.844	819607	6.5	M	112	45	3			0.067	R	12	60	6.0	Y	1	Kosinski,J		
1.844	819608	5.7	B	112	16	6	0.5		0.050	B		10	5.5C	N	1	Richert,M		
1.844	819609	5.6	M	CZ	20	4			0.05	B		10	5			Silhan,J		
1.847	819610	5.7	S	112	11	3			0.05	B		10	5	C	Y	1	Menichetti,R	
1.847	819611	5.2	S	3B	20	6			0.11	R	11	36	4.9	Y	1	Znasik,M		
1.847	819612	5.7	B	CZ	6	4			0.10	B		25	5.1	Y	2	Brancik,K	J	
1.847	819613	4.9	S	112	29.3	5			0.050	B		7	5.8	Y	1	Meozzi,D		
1.85	819614	6.1	B	M	18	0			0.03	B	8	18				Drapun,I		
1.854	819615	6.1	B		13	3			0.050	B		10	5.0	Y	1	Linke,H		
1.854	819616	6.5		112?	9	3			0.175	R	15	43	3.0C	Y	1	Marx,H	K	
1.854	819617	4.5	S	112	15	6	3	100	0.152	N	5	44	5.0	Y	2	Moeller,M		
1.854	819618	6.5	B	112	8	3			0.080	R	6.2	50	4.5	Y	1	Pfitzner,E		
1.857	819619	6.2	B	112		5			0.06	R	8	15	4.5	Y	1	Schumbeck,C.M		
1.858	819620			112	15	6			0.150	R	15	56	5.5C	Y	1	Richert,M		
1.858	819621	5.2	B	112	6.5	5			0.08	R	15	39	5.2C	Y	1	Szulc,M		
1.868	819622	4.2	S	112	26	6	2	100	0.050	B		7	5.0	Y	2	Moeller,M		
1.87	819623	4.3	S	DCS 12	22	4	1	90	0.040	B		7	6	Y	6	Bus,E.P	L	
1.87	819624	4.6	B	DCS 12					0.040	B		7	6	Y	6	Bus,E.P		
1.87	819625	5.2	B	112		3			0.050	B		10	3	C	N	1	Roos,M.C	
1.87	819626	5.0	S	DCS1213	10	6			0.050	B		10	5.5T	Y	1	van der Laan,T.A	M	
1.875	819627	4.5	M	112	35	7			0.030	B		8	4.5	Y	14	Villa,M		
1.875	819628	4.1	B		10	7	7	210	0.030	B		8	6.0	Y	1	Winkler,R	N	
1.878	819629	5.2	B	112	5	3			0.063	R	13	34	4.0C	Y	1	Bauer,H.-P		
1.88	819630	5.2	B	3B						EY		6.5			37	Shanklin,J.D		
1.88	819631	5.5	S	3B					0.05	B		7	6.5		37	Shanklin,J.D	O	
1.88	819632	5.7	S	3B					0.08	B		20	6.5		37	Shanklin,J.D		
1.883	819633	5.5	B		5.5	4			0.200	N	7.2	36	4.5	Y	1	Lipski,P		
1.885	819634	5.8	M	112					0.06	R	4.5	10	6.0	Y	1	Chodorowski,F		
1.885	819635	5.0	B	112		4			0.05	B		7	5	Y	2	Paradowski,M		
1.885	819636	5.2	M	112	8	2			0.09	M	11	56	3.5	Y	9	Westlund,M	P	
1.886	819637	5.0	S	112	13	4			0.05	B		10	2.0	Y	1	Hurst,G.M		
1.888	819638				13	4			0.08	B		15	2.0	Y	1	Hurst,G.M		
1.889	819639				21	4			0.064	R	6.3	25	5	Y	2	Paradowski,M		
1.889	819640	5.8	M	CZ	15	3			0.055	R	6	12			1	Silhan,J		
1.89	819641	6.2	S	DCS 13	10	7			0.080	B		15	4	CT	Y	2	Zanstra,W.T	
1.89	819642	4.8	B	112	12	5			0.050	B		7	5.0	Y	2	Merlin,J.-C		
1.892	819643				10	5			0.064	R	12	32	6.0	Y	1	Chodorowski,F		
1.896	819644	5.9	B	CZ		3			0.03	B		6	5		1	Vaclik,F		
1.896	819645	4.9	B	112	17	6	10		0.05	B		7	5.9	Y	3	Vincent,J	Q	
1.90	819646	4.2	S	3B	17	5	1.0	100	0.060	B		12	5.5	Y	3	van de Weg,R.L.W	R	
1.90	819647	4.5	B	3B	17	5	1.0	100	0.060	B		12	5.5	Y	3	van de Weg,R.L.W	R	
1.910	819648	5.3	B	113,112	8				0.040	B		8	5.2	Y	1	Levai,R	S	
1.91	819649	6.3	S	DCS 13	20	3			0.080	B		15	4.5C	Y	1	Scholten,A	M	
1.9131	819650	5.4	S	112		3			0.080	B		15	3.5C	Y		Giuntoli,M		
1.92	819651	4.8	S	112	10	5			0.050	B		10	2	N	1	van Loo,F.R		
1.924	819652	5.2	M	CZ		4			0.08	B		10	4.0C	Y	1	Rapavy,P		
1.931	819653	5.2	M	112			5.2	102		EY		6.2		Y	3	Fleet,R.W	T	
1.938	819654	5.4	M	112	22	5	16.4	106	0.08	B		11						

NOTE A 1/2 deg. tail in 7x35's - not visible a few days earlier. Still naked eye.

NOTE B Very clear. (Translated by IHW staff. Ed.)

NOTE C Tail PA 92-108.

NOTE D Sequence BAA VSS, U Rya.

NOTE E Tail measurement refers to dust tail only.

NOTE F Comet: naked eye.

NOTE G (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are SAO 156372, 156271.

NOTE H I perceive detail. (Roughly translated by IHW staff. Ed.)

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NOTE I Broad fan shape tail; PA 96 to 115.  
 NOTE J Too great a coma - stars not defocused enough.  
 NOTE K Comparison stars SAO 156271, 156375. (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE L Coma diameter and PA approximate.  
 NOTE M Coma diameter approximate.  
 NOTE N (PA value may have been incorrectly determined. Ed.)  
 NOTE O Tail 12 degrees wide.  
 NOTE P Uncertain because of low altitude.  
 NOTE Q PA 95/105.  
 NOTE R Tail length is lower limit.  
 NOTE S Magnitude estimate uncertainty +/-0.2 mag.  
 NOTE T Suspected tail at PA 104.  
 NOTE U Midpoint in dust tail: 8.7 deg. at PA 104. End point of dust tail: 16.4 deg. at PA 106. Type III [sic] tail: 1.5 deg. at PA 107.  
 NOTE V Misty. (Translated by IHW staff. Observer indicated "A" method [Argelander?]. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
1.083	831195	0.83	0.152	N	8	38		5.8	1	Cuthill,L	A
1.107	831196	0.25	0.20	N	8	120	27	5	1	Vargas B.,A.G	B
1.819	831197		0.314	R	15.9	210		4.5	1	Freydank,B	C
1.865	831198	2.5	0.05	B	8	10	10	5	1	Menichetti,R	
1.884	831199	1.6	0.090	M	11	56		3.5	9	Westlund,M	D
1.938	831200	4	0.08	B		11		6.2	3	Fleet,R.W	E

NOTE A Coma DC = 6. Tail at PA 150-110 gas. [sic] Axis of head at PA 310. A diffuse coma shows a fairly strong intensity at the center. Coma size 4 arc min. Magnitude estimated to be 5.4 using 10x50 binoculars (Morris method).  
 NOTE B Tail's arms at PA 205 and 250 approx. The tail appear with two arms. The tail is more visible than in April 30 observing by binocular (7x50) the tail length will appear almost 4 deg. [sic] DC 5; coma diameter: 7.6' approx.  
 NOTE C DC 3. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE D Low altitude.  
 NOTE E Dust tail end point at PA 106. Type III [sic] at PA 107. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
1.115	851989	0.305	1.5	0.203	6.8 x 4.5	0.33	Kodak 2415		Y	X	267/P	1	Sabia,J.D	A
1.834	851990	0.058	2		34.5 x23.4	2.00	HL	400/27	N		76/S	1	Chodorowski,F	B
1.841	851991	0.058	2		34.5 x23.4	2.00	HL	400/27	N		78/S	1	Chodorowski,F	C
1.859	851992	0.058	2		34.5 x23.4	15.00	HL	400/27	N		80/S	1	Chodorowski,F	D
1.872	851993	0.050	4.0		39.6 x27.0	20.00	ORNO NP 27	400/27	N	S	20/P		Paul,E	
1.885	851994	0.050	2.8		39.6 x27.0	10.00	ORNO NP 27	400/27	N	S	22/P		Paul,E	
1.899	851995	0.135	2.8		15.2 x10.2	10.00	ORNO NP 27	400/27	N	S	28/P		Paul,E	
1.948	851996	0.300	4		6.9 x 4.6	15.00	Ektachrome	400/27	N	X	1/P	2	Lucius,D	
1.967	851997	0.300	4		6.9 x 4.6	15.00	Ektachrome	400/27	N	X	2/P	2	Lucius,D	

NOTE A Taken through a break in clouds. Photograph made by J. Kamichitis and J.D. Sabia.  
 NOTE B (Observer's image identifier is 7/76/77. Ed.)  
 NOTE C (Observer's image identifier is 8/78/79. Ed.)  
 NOTE D (Observer's image identifier is 9/80/81. Ed.)

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
1.216	870143	300G-N	R	0.485		0.088	10.00	3M 1000	1000/31	N	O	17/N	5	Edborg,S.J

DATE: 2 MAY 1986

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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
2.000	819657	5.6	B	112					0.05	B		7	5.0C	Y	2	Martinez,C	
2.010	819658	5.5	B	AAVSO	0.2	2			0.04	B		10	5.2	Y	1	Allen,E	
2.010	819659	5.5	B	AAVSO	12	2			0.040	B		10	5.2	Y	1	Alves,A.A	
2.010	819660	5.5	B	112	5.5	5			0.05	B		20	4.1C	Y	7	Diaz P.,E	
2.022	819661	4.7	B	112		4		116	0.05	B		20	4.5	Y	1	da Silva,L.A.L	
2.049	819662	5.2	S	3B					0.035	B		7	4.1T	Y	4	Hudak,D.M	
2.083	819663	5.5	B	3B					0.05	B		7	4.5C	Y	2	Lupianez,B	
2.125	819664	5.3	B	112	24.1	4	0.67	260	0.050	B		7	4.5C	Y	1	Will,M	A
2.13	819665	5.5	B	112	11	3			0.080	B		20		Y		Kronk,G	
2.134	819666	5.3	B	112		7			0.08	B		11	5.4	Y	6	Gorski,L	
2.146	819667	5.8	B	112	12	2			0.05	B		7	4.2	Y	1	Lairret,R	
2.15	819668	5.3	B	112	6.0	5	0.5	85	0.335	N	4.5	56		Y		Kronk,G	
2.151	819669	5.6	B	112		1			0.03	B		8	3.1C	Y	2	Giraudi,J.D	B
2.156	819670	5.6	B	112		1			0.03	B		8	3.1C	Y	2	Giraudi,J.D	B
2.158	819671	5.5	B	112		1			0.03	B		8	3.1C	Y	2	Giraudi,J.D	B
2.165	819672	4.5	B	112	4	1			0.06	R	12	56	5.3	Y	1	Onofre D.,D	
2.19	819673	4.7	M	3B	15	5	9	100	0.050	B		10	5.5	Y	7	Morris,C.S	
2.20	819674	4.7	M	3B	15	4			0.080	B		20	5.5	Y	7	Morris,C.S	
2.21	819675	4.7	M	3B						Y			5.5	Y	7	Morris,C.S	
2.333	819676	5.5	S	112,132	2	3			0.114	N	7.9	23	4.5C	Y	1	Di Meglio,F	
2.364	819677	5.8	S	TIRION	12	4	0.4		0.050	B		15	4.5			Witte,F	
2.368	819678	5.2	B	112	20	4	2	95	0.05	B		10		N	1	Tregaskis,T.B	C
2.368	819679	5.2			30					Y			5.5	N	1	Tregaskis,T.B	D
2.40	819680	5.0	S	113	40	3			0.023	B		3	5.9			Jones,A	
2.42	819682	10	V			4	1		0.050	B		7				Jones,A	E
2.492	819683	4.9	S	3B					0.317	N	5	86				Jones,A	F
2.494	819684									Y			6.0	Y	16	Garradd,G	
2.562	819685	4.5	S	112		5	2		0.05	B		7				Garradd,G	
2.57	819686	5.8	B	M	4	0			0.080	B		20		Y	1	Batza,B	G
2.58	819687	5.5	M	112	16.2	4			0.05	B		7				Konstantinov,S	
2.69	819688	5.2	B	AAVSO					0.080	B		11	3	Y	2	Watanabe,N	
2.75	819689	4.9	B	E	10	5	1		0.05	B		7				Churyumov,K	
2.81	819690	8.0	S	SAO 96	3				0.205	N	6	80	5.0	Y	1	Mormil,V	
2.81	819691	4.8	B	E	20	5	5	105	0.05	B		7				Germann,R	
2.81	819692	5.8	B	M	4	4	0.5	272	0.11	N		30				Mormil,V	
2.813	819693	6.3	M	CZ	30	3	0.2	90	0.035	B		7	5.0T	Y	1	Yurchenko,Yu	
2.813	819694	5.7	M	CZ	15	5			0.05	B		7	4.7			Kroch,F	H
2.823	819695	4.9	B	CZ	11	9			0.10	O		25	4.5C	Y	3	Pravec,P	
2.823	819696	5.1	B	112		4			0.064	R	6.3	10	6	Y	2	Micsek,I	
2.826	819697	5.6	M	AAVSO	22	4	1.8	105	0.156	N	10	54	7.0			Paradowski,M	
2.826	819698	5.6	M	CZ	25	3			0.03	B		8				Kosa-Kiss,A	I
2.826	819699	5.3	M	112		3			0.089	R	5.5	18	4.0	N	1	Silhan,J	
2.830	819700	4.7	M	112	37	7			0.030	B		8	5.0	Y	14	Ventura,F	J
2.833	819701	5.9	S	112	22	5	0.7	58	0.06	B		12	5.0	Y	1	Villa,M	
2.833	819702	4.7	B	112	17	5	14.4		0.05	B		7	5.9	Y	3	Znasik,M	
2.840	819703	5.9	S	112	26	5	0.7	58	0.08	B		10	5.0	Y	1	Vincent,J	K
2.840	819704	5.9	M	112								25	4.5	N	1	Znasik,M	
2.840	819705	6.3	B	112	13	3			0.066	R	15.2	28	5.5	Y	1	Fabricius,J	
2.840	819706	5.7	B	112	10	6	0.5	40	0.050	B		12	4.0	Y	1	Gora,D	
2.844	819707	5.4	M	112	22	6	1.9	97	0.08	B		11	6.2	Y	3	Mosch,J	
2.844	819708	5.3	M	112	15	7			0.050	B		7		Y	1	Fleet,R.W	L
2.844	819709	6.2	B	CZ		3			0.03	B		6	5			Mikuz,H	M
2.844	819710	5.6	B	112	4.5	4			0.090	N	7	26	4.5	Y	1	Vaclik,F	
2.845	819711	5.4	B	112					0.050	B		10	6.5	Y	1	Vohla,F	
2.847	819712	5.1	M	112			7.8	104		Y		6.2	Y	3	Slusarczyk,J		
2.847	819713	5.6	B	112	4.7	3			0.10	B		14	4.0	Y	1	Fleet,R.W	N
2.847	819714	5.6	B	112					0.03	B		8	4.0	Y	1	Hasubick,W	
2.847	819715	5.9	B	112	11	3			0.064	R	6.3	20	3.5C			Hasubick,W	
2.85	819716	6.0	B	M					0.03	R	8	18				Maciejewski,W	
2.85	819717	5.3	B	AAVSO	20	5	0.8	113	0.11	B		20				Drspan,I	
2.854	819718	6.0	B	112	10	4			0.030	B		8	3	C	N	Chernis,K	
2.854	819719	6.0	B	112	5	6			0.067	R	12	53	5.5C	N	2	Adamoli,G	
2.854	819720	5.7	B	CZ	6				0.02	B		3	5.2			Sciezor,T	O
2.854	819721	6.4	M	112	45	3			0.067	R	12	60	6.2	Y	1	Brancik,K	
2.854	819722	4.9	B	112					0.030	B		8	4.0	Y	2	Kosinski,J	
2.854	819723	6.2	B		13	3			0.050	B		10	5.0	Y	1	Kieltyka,G	
2.854	819724	5.5	S	CZ	9	3			0.10	B		25	5.0	Y	1	Linke,H	P
2.857	819725	5.0	S	112	26	5			0.050	B		7	5.8	Y	1	Polak,J	
2.858	819726	6.0	B	112	20	6			0.035	B		7	5.5C	N	1	Meozzi,D	
2.858	819727	5.7	M	112					0.06	R	4.5	10	4.5	Y	1	Sciezor,T	O
2.858	819728	6.2	B	112	42	3			0.067	R	12	60	6.0	Y	1	Chodorowski,F	
2.858	819729	4.7	B	112		5			0.030	B		8	5.0	Y	1	Nieboerek,T	
2.858	819730	5.5	B	112	5.8	5			0.08	R	15	39	5.2C	Y	1	Moskal,W	Q
2.86	819731	5.5	B	113					0.050	B		10	5	Y	1	Szulc,M	
2.861	819732			112	15	3			0.050	B		10		Y	1	Ward,A	
2.861	819733	6.3	B	112	7	4			0.064	R	12.5	30	4.0	Y	2	Kieltyka,G	
2.861	819734	5.3	M	CZ	15	4			0.080	R	6.2	50	6.0	Y	1	Pfitzer,E	
2.865	819735	5.5	B	112	5	3			0.06	B		12	4.5C	Y	1	Rapavy,P	R
2.865	819736				8	5			0.063	R	13	34	4.0C	Y	1	Bauer,H.-P	
2.865	819737	5	B	112	4	3			0.064	R	12	32	4.5	Y	1	Chodorowski,F	
2.865	819738	5.4	M	CZ	30	5			0.050	B		10	4.9C	Y	1	Laszlo,A	
2.868	819739	5.9	S	112		3			0.05	B		7				Silhan,J	
2.868	819740	6.6		112?	8	5				B		10	4.5	Y	2	Hirth,G	S
2.868	819741	5.6	M	112	6	3			0.175	R	15	43	3.5C	Y	1	Marx,H	T
2.869	819742	5.5	S	CZ	40	9			0.09	M	11	56	3.0T	Y	9	Westlund,M	U
2.872	819743	5.6	B	112	18	4			0.090	N	7	40	4.5	Y	1	Kroch,F	V
2.873	819744	5.4	M	CZ	20	6	0.7	105	0.035	B		7	5.8	Y	1	Kopplin,J	
2.875	819745	5.2	B	112					0.050	B		10	6.5	Y	1	Trebacz,A	W
2.876	819746	5.6	M	CZ	14.0	6			0.060	B		20	5.5	Y	1	Barak,R	
2.878	819747	5.7	B			3			0.080	R	6.2	12	4.5	Y	1	Lieder,F	
2.885	819748				4.5	3			0.130	N	8	40	4.5	Y	1	Lieder,F	
2.885	819749	4.3	B		9	6	6	211	0.030	B		8	6.0	Y	1	Winkler,R	A
2.89	819750	6.0	S	3B					0.08	B		20	6.0			Shanklin,J.D	
2.89	819751	5.3	B	3B						Y			6.5			Shanklin,J.D	
2.89	819752	5.6	S	3B					0.05	B		7	6.5			Shanklin,J.D	
2.89	819753	4.7	B	112	12	4	2.00	103	0.050	B		7	5.5	Y	2	Merlin,J.-C	
2.896	819754	5.4	S	112	15	6	2.75	126	0.13	R	4	21	5.4	Y	1	Campos,J	X
2.896	819755	5.1	B	112		4			0.05	B		7	6	Y	2	Paradowski,M	
2.898	819756	4.6	S	112	23	7	2.5	100	0.152	N							

DATE: 2 MAY 1986

DATE: 2 MAY 1986

Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
2.905	819758	5.4	M	CZ	20	5			0.05	B		7			1	Kucera,P	
2.912	819759	5.7	B	112	19				0.050	B		10	5.0C	N	1	Richert,M	
2.93	819760	4.9:	S	IHW	11	4			0.035	B		7	4.0	Y	1	Granslo,B.E	
2.938	819761	5.0		112	6	4			0.08	B		15	3.8	Y	1	Dietrich,M	2
2.958	819762	6.3	B	113,112					0.05	R	8	7	5.0C	Y	1	Martinez,C	
2.98	819763	5.4	B	AAVSO			5.3		0.04	B		7				Kiselev,N	

NOTE A (PA value may have been incorrectly determined. Ed.)

NOTE B At the limit of visibility in this instrument. (Translated by IHW staff. Ed.)

NOTE C PA approximate. Clear. (Observer gave limit as approximately 10. Ed.)

NOTE D Coma diameter approximate.

NOTE E Tail PA 92-105.

NOTE F Nucleus. Reference star BD -16 3141. Diffuse coma, gradually brighter towards small, bright nucleus, (31.7 N 86x).

NOTE G (Observer gave limit as 11.0. Ed.)

NOTE H Estimated magnitude uncertainty +/-0.3. Coma diameter determined by comparison with a pair of stars. Measurement from a plot yields 25x10 arc min.

NOTE I Comet: naked eye.

NOTE J Strong mist.

NOTE K PA 95/105.

NOTE L Gas tail at PA 97. Midpoint of dust tail: 7.7 deg. at PA 106. End point of dust tail: 18.8 deg. at PA 106. Type III [sic] tail at PA 108.

NOTE M Good cond.

NOTE N Suspected tail at PA 108.

NOTE O Very clear skies.

NOTE P Magnitude estimate uncertainty +/-0.5 mag.

NOTE Q Short tail, faintly visible, barely visible antitail.

NOTE R Coma diameter uncertain.

NOTE S Lights, misty.

NOTE T Comparison stars SAO 156271, 156295. (Observer indicated "A" method [Argelander?]. Ed.)

NOTE U Uncertain because of low altitude.

NOTE V Coma diameter determined by comparison with a pair of stars. Measurement from a plot yields 30 arc min. Magnitude determined with and without glasses -0.75D.

NOTE W Estimated magnitude uncertainty +/-0.2. Coma diameter determined by comparison with a pair of stars. Measurement from a plot yields 30x20 arc min.

NOTE X Broad tail from PA 98 to 126.

NOTE Y Bazy.

NOTE Z Misty. (Translated by IHW staff. Observer indicated "A" method [Argelander?]. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
2.118	831201	1.61	0.050	B		7	20	4.5	1	Will,M	A
2.826	831202		0.050	B		7		7.0		Kosa-Kiss,A	B
2.844	831203	4	0.08	B		11		6.2	3	Fleet,R.W	C
2.865	831204	1.6	0.090	M	11	56	10	3.0	9	Westlund,M	D
2.889	831205	0.08	0.40	N	5	81,170,254	20	5.5	2	Merlin,J.-C	E

NOTE A Tail at PA 260. The coma reveals three concentric zones of brightness. Zone 3 exhibits a similar nebulous tone to that of the central tail region. Zone 2 is more luminous and intense. Zone 1 is the brightest region in the coma. Half as big as zone 2, on this particular night zone 1 was larger than its "dot-like" appearance two nights before. The tail is conical in shape with boundaries that curve slightly toward the vertex or end of the tail. A long thin "strip-like" patch appears in the central region of the tail and extends the length of the entire tail. This portion is the most intense part of the tail. Outer coma diameter 24.12'; inner coma diameter 10.46'; tail length 40.21'. Dark adapted.

NOTE B Coma diameter 22', DC = 4. Tail 1.8 deg. at PA 105. Total magnitude 5.6. Schematic drawing. (Duration not indicated. Time of observation is end time. Ed.)

NOTE C Gas tail at PA 97. Dust tail end point at PA 106. Type III [sic] at PA 108. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Low altitude. Disturbing lights: twilight.

NOTE E Tail at PA 69; tail at PA 114, large and diffuse (dust tail?); tail at PA 142, large and diffuse (dust tail?); jet at PA 195, short and bright; jet at PA 265, nearly sunward; jet at PA 278; jet at PA 340. Fan-shaped structure between jets at PA 278 and PA 340.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
2.274	851998	0.300	1.5	0.200	6.9 x 4.6	8.00	Kodak 2415		Y	S	22/P	3	Yen,B	A
2.833	851999	0.300	4		6.9 x 4.6	10.00	Fotopan HL	400/27	N	O	11/P	1	Slusarczyk,J	
2.855	852000	0.600	5	0.120	3.4 x 2.3	31.00	ORWO NP 27	400/27	N		10/P		Kohler,N	
2.859	852001	0.760	4	0.19	2.7 x 1.8	20.00	Kodak Tri-X	400/27	N	O	20/T	1	Mikuz,H	B
2.876	852002	0.760	4	0.19	2.7 x 1.8	21.00	Kodak Tri-X	400/27	N	O	21/T	1	Mikuz,H	B
2.902	852003	0.300	4		6.9 x 4.6	15.00	Ektachrome	400/27	N	X	3/P	2	Lucius,D	
2.922	852004	0.050	1.8		39.6 x 27.0	15.00	Ektachrome	64/19	N	X	4/P	2	Lucius,D	
2.955	852005	0.300	4		6.9 x 4.6	10.00	Ektachrome	400/27	N	X	5/P	2	Lucius,D	

NOTE A (Observer's image identifier is 36. Ed.) Instrument is Schmidt camera.

NOTE B Weather conditions good.

DATE: 3 MAY 1986

DATE: 3 MAY 1986

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	
3.07	819764	5.4	B	112					0.050	B		10				Bortle,J.E		
3.07	819765	5.0	S	112					0.050	BY						Bortle,J.E		
3.07	819766	5.1	S	112	12				0.050	B		10	6	Y	1	Bortle,J.E		
3.07	819767				12				0.050	B		7				Bortle,J.E		
3.076	819768	4.5	S	112	3.9				0.050	B	11	39	4.1C	N	1	Graves,D	A	
3.094	819769	5.6	B	112					0.080	B		20	5.4	Y	1	Smith,D		
3.101	819770	4.7	B	112	4				0.06	R	12	56	5.3	Y	1	Onofre D.,D	B	
3.104	819771	5.8	B	AAVSO	0.2				0.04	B		10	5.0	Y	1	Allen,E		
3.104	819772	5.8	B	AAVSO	12				0.040	B		10	5.2	Y	1	Alves,A.A		
3.11	819773	5.8	B	112					0.080	B		20		Y	1	Kronk,G		
3.118	819774	5.3	M	112			2.00	105	0.050	B		10	4.9	Y	1	Smith,A	C	
3.12	819775	4.6	M	INW BAA	15				0.035	B		7				Green,D.W.E	D	
3.12	819776	4.5	S	INW BAA	15				0.035	B		7				Green,D.W.E	D	
3.125	819777	5.5	B	112	13.9			0.30	262	0.050	B	7	4.1C	Y	1	Will,M	E	
3.13	819778	4.6	B	INW BAA	20				0.050	BY		7				Green,D.W.E	D	
3.140	819779	5.4	S	112	11				0.05	B		10	5.5	Y	1	House,R.R		
3.153	819780	5.0	B	112	25		0.5		0.20	SC	10	77	5.5	Y	1	Hodonsky,K		
3.160	819781	4.7	B	112	6.5		0.04	280	0.127	SC	10	50	2.6	N	1	Rousom,J	F	
3.167	819782	5.3	S	3B					0.035	B		7	4	N	4	Hudak,D.M		
3.167	819783	5.8	S	112	34				0.05	B		10	4	C	Y	1	Gronck,J.D	G
3.167	819784	5.6	B	112	13		2.0	115	0.05	B		10	6.5	Y	1	Hays Jr,R.H		
3.167	819785				10.2		0.60	262	0.050	R	12	24	4.1C	Y	1	Will,M	E	
3.188	819786	5.4	S	112	75	50			0.080	B		11	4.3C	Y	1	Bailey,G	H	
3.2083	819787	5.4	S	112	15		6.5	101		BY		6.3		Y	3	Cook,A.J		
3.22	819788	5.6	B	112	8				0.035	B		7	6.0	Y	1	Jacobson,E	I	
3.22	819789				31				0.050	BY		6.0		Y	1	Jacobson,E		
3.2236	819790	5.4	M	112	15		7.5	100	0.05	B		7	6.3	Y	3	Cook,A.J		
3.23	819791	4.8	M	112	15		10	100	0.050	B		10	6.5	Y	3	Morris,C.S		
3.24	819792						19	100		BY		6.5		Y	3	Morris,C.S	J	
3.25	819793								0.445	N	4.5	224	6.5	Y	3	Morris,C.S	K	
3.31	819794	4.9	M	3B					0.05	B		10	6.5	Y	18	Hale,A	L	
3.31	819795						19	90		BY		6.5		Y	18	Hale,A	L	
3.35	819796	4.8	S	BETACRA			7	7.0		BY		6.3				Lovejoy,T		
3.361	819797	6.0:	S	TIRION	10		0.37		0.050	B		15	3.7			Witte,F		
3.37	819798	9.8	V						0.317	N	5	86				Jones,A	M	
3.375	819799	5.2	B	112	15				0.03	R		8		Y	1	Tregaskis,T.B	N	
3.385	819800	6.2:	S	TIRION	8		0.33		0.150	M	15	56	3.5			Witte,F		
3.423	819801	5.6	B	112	15		2	95	0.05	B		10		Y	1	Tregaskis,T.B	O	
3.423	819802				11			100	0.10	N	6	24		Y	1	Tregaskis,T.B	P	
3.423	819803				8				0.15	N	8	64		Y	1	Tregaskis,T.B	Q	
3.45	819804	5.1	S	112	26				0.023	B		3				Jones,A		
3.45	819805				5		1		0.050	B		7				Jones,A	R	
3.465	819806	5.6	M	112	7.2		1.5	85	0.2	C	10	50	6.0	Y	10	Ichikawa,K		
3.469	819807	5.4	S	112	12		1.2	90	0.05	B		7	5.4	Y	1	Bryant,K	S	
3.500	819808	5.2	S	3B, 112						BY		6.1		Y	1	Seargent,D	T	
3.500	819809						3	105	0.08	B		15				Seargent,D		
3.58	819810	7			5				0.15	N	6	23	4	Y	5	Tanikawa,M		
3.70	819811	5.6	B	AAVSO					0.08	B		7				Churyumov,K		
3.73	819812	6.4	B	M	5				0.05	B		7				Konstantinov,S		
3.755	819813	4.6	S	112	18				0.05	BY		7	6.1	Y	7	Haver,R		
3.755	819814	4.9	S	112	14		2.5	105	0.05	B		7	6.1	Y	7	Haver,R	U	
3.78	819815	5.6	B	AAVSO					0.08	B						Churyumov,K		
3.802	819816	5.9	M	112					0.035	B		9	6.2	Y	1	Begbie,M.J.R		
3.802	819817	6.6	S	112	8.2				0.08	B		10	4.5	Y	2	Hirth,G		
3.82	819818	6.5	B	M	18				0.08	B		40				Palko,Yu		
3.823	819819	5.8	M	AAVSO	12		1.0	70	0.156	N	10	54	6.8			Kosa-Kiss,A	V	
3.823	819820	4.8	M	112	25				0.030	B		8	5.0	Y	14	Villa,M		
3.825	819821				8.4				0.30	N	8.5	102	6.2	Y	1	Begbie,M.J.R	W	
3.826	819822	6.1	B	112	10.1		3	100	0.08	B		29	5.3	Y	1	Gigli,P	X	
3.826	819823	6.2	M	112					0.100	B		25	4.5	N	1	Fabricius,J		
3.830	819824	6.2	M	112					0.06	R	4.5	10	4.5	Y	1	Chodorowski,F		
3.83	819825	6.5	B	M	18				0.03	R		18				Drapun,I		
3.833	819826				15				0.064	R	12	32	5.0	Y	1	Chodorowski,F		
3.833	819827	5.8	B	112	4.5				0.056	B		8	5.5	Y	1	Koch,V		
3.837	819828	6.0	M	CZ	10		0.5	110	0.035	B		7	4.5	Y	1	Hroch,F	Y	
3.837	819829	5.7	M	CZ	10				0.05	B		7				Kucera,P		
3.840	819830	5.6	M	CZ	16.0				0.060	B		20	6	Y	1	Barak,R		
3.840	819831	4.8	B	112				310	0.064	R	12	60	4.0	Y	1	Moskal,W	Z	
3.840	819832	5.3	M	112					0.08	B		10	4.1C	Y	1	Posa,O	a	
3.844	819833	6.4	B	112	12				0.07	B		10	5.6	Y	6	Decobinck,M	b	
3.844	819834	6.3	B	112	42				0.067	R	12	60	6.0	Y	1	Nieborrek,T		
3.844	819835	5.3	M	112	15				0.15	N	4	37	4.1C	Y	1	Posa,O	a	
3.845	819836	5.3	S	112	22				0.080	B		20	5.6	Y	1	Meozzi,D		
3.845	819837	5.4	M	112	4				0.06	B		12	4.1C	Y	1	Posa,O	a	
3.847	819838	6.2	B	112	11				0.035	B		7	5.0C	N	1	Schwarz,T	c	
3.847	819839	5.3	M	112					0.08	B		10	4.1	Y	1	Csomos,G	d	
3.847	819840	5.1	B	CZ	12	9			0.10	O		25	4.5C	Y	1	Micek,I		
3.847	819841	5.7	S	112	9				0.06	R	8	15	4.5	Y	1	Schambeck,C.M		
3.849	819842	5.4	M	112					0.15	N	4	37	4.1	Y	1	Csomos,G	d	
3.850	819843	5.3	M	112					0.06	B		12	4.1	Y	1	Csomos,G	d	
3.850	819844	5.9	B	112	10	6			0.050	B		12	3.0	Y	1	Mosch,J		
3.854	819845	6.3	B		13				0.050	B		10	4.5	Y	1	Linke,H		
3.854	819846	5.9	M	CZ	15				0.05	B		7				Silhan,J	e	
3.861	819847	6.4	S	CZ	10				0.05	R	10	13	5.0	Y	1	Polak,J	f	
3.861	819848				13				0.080	R	6.2	20	3.5C	Y	2	Richert,M		
3.865	819849	6.5	M	112	45				0.067	R	12	60	6.0	Y	1	Kosinski,J		
3.865	819850	6.3	B	112	7				0.080	R	6.2	50	6.0	Y	1	Pfitzer,E		
3.865	819851	6.0	M	CZ	12				0.03	B		8				Silhan,J		
3.865	819852	5.7	B	112	5.2				0.08	R	15	39	4.5C	Y	1	Szulc,M		
3.868	819853	5.6	M	CZ	10				0.05	B		7				Kucera,P		
3.875	819854	5.6	S	112	14				0.050	B		7		Y	1	Mikuz,H	g	
3.875	819855	4.9	S	112	20		2	100	0.152	N	5	44	4.5	Y	2	Moeller,M		
3.881	819856	5.9	B	112	6.0				0.080	B		20	5.5	Y	1	Koch,B.O		
3.882	819857	5.2	S	112	15				0.05	B		10	2.5	Y	1	Hurst,G.M		
3.884	819858				15				0.08	B		15	2.5	Y	1	Hurst,G.M	h	
3.885	819859	4.9	M	3B					0.050	B		7	6.0	Y	1	Stott,D		
3.885	819860	5.7:	M	112	6				0.09	M	11	56	3.0	Y	9	Westlund,M	i	
3.885	819861	4.3	B		9	5		212	0.030	B		8	6.0	Y	1	Winkler,R	E	
3.889	819862	6.2	S	112	7.0		0.07	90	0.070	B		16	4.1C	Y	1	Taylor,M.D	j	
3.889	81986																	

DATE: 3 MAY 1986

DATE: 3 MAY 1986

Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)	Notes
3.899	819865	5.5	M	CZ		4			0.06	B		12	5.0C	Y	1	Rapavy,P	
3.899	819866	6.2	M	CZ	15	3			0.055	R	6	12			1	Silhan,J	
3.906	819867	5.4	M	CZ		4			0.08	B		10	5.0C	Y	1	Rapavy,P	
3.917	819868	5.6	S	112	8.5	5		90	0.25	N	6	60	4.1	Y	1	Gainsford,M.J	k
3.925	819869	5.7	S	112					0.08	B		11	4.1	Y	1	Gainsford,M.J	1
3.927	819870	5.1	B	112		4			0.05	B		7	4.5	Y	2	Paradowski,M	
3.997	819871	4.7	B	112		5			0.05	B		20	4.5	Y	1	da Silva,L.A.L	

NOTE A Diffuse coma.  
 NOTE B Cirrus.  
 NOTE C Seeing average.  
 NOTE D Coma diameter approximate.  
 NOTE E (PA value may have been incorrectly determined. Ed.)  
 NOTE F Light haze. Nucleus stellar. (PA value appears incorrect. Ed.)  
 NOTE G Exc. see.  
 NOTE H Recovered. Couldn't tell if tail or extended coma.  
 NOTE I Condensation.  
 NOTE J Tail suspected out to 25 degrees.  
 NOTE K Bright sector was seen coming from the central condensation between PAs 340: and 240:.  
 NOTE L Naked-eye magnitude estimate difficult due to proximity of comet to 3rd magnitude star (Nu Hydrae). The naked-eye tail is again very long but extremely faint.  
 NOTE M Nucleus. Diffuse coma, strongly condensed about small nucleus.  
 NOTE N Coma diameter approximate. Clear. (Observer gave limit as approximately 9. Ed.)  
 NOTE O Clear. (Observer gave limit as approximately 10. Ed.)  
 NOTE P Tail fairly narrow and faint. Faint stellar-like nucleus.  
 NOTE Q Nucleus not so stellar-like.  
 NOTE R Tail PA 92-103.  
 NOTE S DC = strong.  
 NOTE T Near bright star.  
 NOTE U Center tail, see drawing.  
 NOTE V Comet: naked eye.  
 NOTE W Tail measurement refers to dust tail only.  
 NOTE X Serene, without wind.  
 NOTE Y Estimated magnitude uncertainty +/-0.4. Coma diameter determined by comparison with a pair of stars. Measurement from a plot yields 10 arc min.  
 NOTE Z Bad weather, tail barely visible.  
 NOTE a Coma dia. = elipt. [sic]. Tail length indeterm.  
 NOTE b Star nu very light. [sic]  
 NOTE c Thin fog.  
 NOTE d Coma elliptical.  
 NOTE e Mist.  
 NOTE f Magnitude estimate uncertainty +/-0.3 mag.  
 NOTE g Possible very thin cirrus clouds.  
 NOTE h Comet near bright star.  
 NOTE i Uncertain because of low altitude. Cirrus.  
 NOTE j Antoniadis III-IV. Haze.  
 NOTE k Coma diameter 8.5'+.  
 NOTE l Coma dia. = "large".

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
3.118	831206	1.07	0.050	B		7	20	4.1	1	Will,M	A
3.160	831207	0.68	0.050	R	12	24	20	4.1	1	Will,M	B
3.175	831208	0.5	0.13	SC	10	32,120	15	6.5	1	Hays Jr,R.H	C
3.227	831209	3	0.050	B		7	10	6.3	3	Cook,A.J	
3.755	831210	3	0.050	B		7	5	6.1	7	Haver,R	D
3.835	831211		0.30	N	8.5	102,212,425	34	6.2	1	Begbie,M.J.R	E
3.882	831212	1.6	0.090	M	11	56	10	3.0	9	Westlund,M	F

NOTE A The coma of the comet has three concentric zones of brightness. Zone 3, the most nebulous part of the coma, is a good deal more intense than the tail of comet Halley this evening. Zone 2 is still brighter and the glow peaks out at a point in the center of the coma called zone 1. The tail is cone shaped, very diffuse showing no detail. Coma diameter 13.91'; inner coma diameter 7.49'; tail length 18.18' at PA 262. Dark adapted.  
 NOTE B The general purpose of this sketch was to observe detail in the tail of comet Halley. Overall the tail seems to be less luminous than the outer reaches of the coma. Bifurcation was observed in the tail's structure. The northern branch is shown to be slightly longer than its southern counterpart. Note that a star can be seen through one of the branches, the northern branch. This star is greater in brightness than magnitude 9.5 according to AAVSO Star Atlas chart 112. Coma diameter 10.23', tail length 36.13' at PA 262.  
 NOTE C Quiet comet. 'Nucleus' not as prominent as on Apr. 26/27.  
 NOTE D Tail center at PA 105.  
 NOTE E Fans at variable PAs. Tail spine at PA 80. Vertex distance 4.2 arc min.; semi latus rectums P1 = 4.7 arc min., P2 = 3.2 arc min. At 425x - faint streamers were observed that moved out from the central condensation and then flowed backward into the tail. Two fans also appeared to behave similarly. A relatively bright and thin spine of material flowed away from the central condensation into the tail. The tail at 102x was narrow, but prominent. (Two drawings are included in this listing: one made at magnifications of 102 and 425 and scale 0.25 arc min./mm and one at a magnification of 425 and scale of 0.07 arc min./mm. There is no reference to a magnification 212 except on the coversheet. Ed.)  
 NOTE F Low altitude, cirrus.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
3.091	852006	0.225	1.7	0.140	9.1 x 6.1	4.00	Kodak 2415		Y	S	3/P	1	Dilsizian,R	
3.173	852007	0.200	3.5		10.3 x 6.9	10.00	Ektachrome	400/	N	T	759/S	2	Woidyla,B	A
3.195	852008	0.200	3.5		10.3 x 6.9	11.50	Ektachrome	400/	N	T	762/S	2	Woidyla,B	A
3.205	852009	0.135	2.8		15.2 x10.2	8.50	Kodak 2415		Y	C	617/S	2	Buchanan,W.T	B
3.232	852010	0.300	1.5	0.200	6.9 x 4.6	8.00	Kodak 2415		Y	S	23/P	3	Yen,B	C
3.234	852011	0.260	5.2	0.050	7.9 x 5.3	1.00	3M 1000	1000/	N	O	19/N	2	Eddberg,S.J	
3.234	852012	0.050	2		39.6 x27.0	1.00	Ektachrome	400/	N	O	7/N	2	Eddberg,S.J	
3.234	852013	0.500	3.6	0.140	4.1 x 2.7	1.00	Kodak Tri-X	400/	N	O	27/C	2	Eddberg,S.J	
3.238	852014	0.260	5.2	0.050	7.9 x 5.3	10.00	3M 1000	1000/	N	O	20/N	2	Eddberg,S.J	
3.238	852015	0.050	2		39.6 x27.0	10.00	Ektachrome	400/	N	O	8/N	2	Eddberg,S.J	
3.238	852016	0.500	3.6	0.140	4.1 x 2.7	10.00	Kodak Tri-X	400/	N	O	28/C	2	Eddberg,S.J	
3.245	852017	0.260	5.2	0.050	7.9 x 5.3	5.00	3M 1000	1000/	N	O	21/N	2	Eddberg,S.J	
3.245	852018	0.500	3.6	0.140	4.1 x 2.7	5.00	Kodak Tri-X	400/	N	O	29/C	2	Eddberg,S.J	
3.259	852019	0.050	2		39.6 x27.0	10.00	3M 1000	1000/	N	O	22/N	2	Eddberg,S.J	
3.259	852020	0.500	3.6	0.140	4.1 x 2.7	10.00	Ektachrome	400/	N	O	10/N	2	Eddberg,S.J	
3.259	852021	0.260	5.2	0.050	7.9 x 5.3	10.00	Kodak Tri-X	400/	N	O	30/C	2	Eddberg,S.J	
3.280	852022	0.050	2		39.6 x27.0	20.00	Ektachrome	400/	N	O	11/N	2	Eddberg,S.J	
3.280	852023	0.260	5.2	0.050	7.9 x 5.3	20.00	Kodak Tri-X	400/	N	O	31/C	2	Eddberg,S.J	
3.400	852024	0.135	3.5		15.2 x10.2	5.00	Ektachr.400		N	X	35/S	1	Tregaskis,T.B	D
3.407	852025	0.135	3.5		15.2 x10.2	10.00	Ektachr.400		N	X	36/S	1	Tregaskis,T.B	D
3.419	852026	0.135	3.5		15.2 x10.2	20.00	Ektachr.400		N	X	37/S	1	Tregaskis,T.B	D



DATE: 3 MAY 1986

DATE: 3 MAY 1986

Date(UT)	ACON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
3.845	852027	0.058	2		34.5 x 23.4	5.00	HL	400/27	N		28/S	1	Chodorowski,F	E
3.850	852028	0.300	4		6.9 x 4.6	20.00	Fotopan HL	400/27	N	O	12/P	1	Slusarczyk,J	
3.897	852029	0.950	4.7	0.20	2.2 x 1.4	2.00	Kodak 2415		Y		23/P	1	Conrad,R	F
3.935	852030	0.300	4		6.9 x 4.6	15.00	Ektachrome	400/27	N	X	6/P	2	Lucius,D	
3.946	852031	0.300	4		6.9 x 4.6	10.00	Ektachrome	400/27	N	X	7/P	2	Lucius,D	

NOTE A (Observer's image identifier is preceded by prefix 1. Ed.)

NOTE B (Observer's image identifier is F-126-17. Ed.)

NOTE C (Observer's image identifier is 1. Ed.) Instrument is Schmidt camera.

NOTE D Push processed to 800 ASA.

NOTE E (Observer's image identifier is 12/28. Ed.)

NOTE F City lights interfered with the observation; Vienna, from room.

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	ACON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
3.239	870144	600G-O	CL	0.135	2.8		18.00	Kodak 2415		Y		618/S	2	Buchanan,W.T	A

NOTE A Frame has light from passing vehicle. (Observer's image identifier is E-126-18. Ed.) Comet Halley just below naked eye visibility.

DATE: 4 MAY 1986

DATE: 4 MAY 1986

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	
4.00	819872	5.6	B	AAVSO			5		0.04	B		7				Kiselev,N		
4.021	819873	4.9	B	112					0.05	R	8	7	5.5	Y	2	Villegas,S		
4.031	819874	6.4	S	112					0.05	R	8	7	5.5C	Y	1	Martinez,C		
4.059	819875	6.1	B	AAVSO	0.2	2			0.04	B		10	5.2	Y	1	Allen,E		
4.059	819876	6.1	B	AAVSO	12	2			0.040	B		10	4.5	Y	1	Alves,A.A		
4.066	819877	5.3	S	112	5.0	6			0.203	N	6	101	4.9	Y	1	Hudak,D.M		
4.076	819878	4.5	S	112	3.6	3			0.08	R	11	39	4.1C	N	1	Graves,D	A	
4.08	819879	5.1	S	112,113	12	4	2.3	113	0.050	B		10	6	Y	1	Bortle,J.E		
4.08	819880				14	4	3.0	113	0.050	B		7				Bortle,J.E	B	
4.090	819881	5.9	S	112	12				0.035	B		7	6.0	Y	3	Morrison,W		
4.090	819882	5.0	B	112	8.4	3			0.127	SC	10	50	4.4	Y	1	Rousom,J	C	
4.094	819883	5.9	B	112					0.080	B		20	5.5	Y		Smith,D		
4.11	819884	5.8	B	112	15	5			0.080	B		20		Y		Kronk,G		
4.115	819885	5.9	B	112		6			0.08	B		11	5.2	Y	6	Gorski,L		
4.121	819886	5.5	B	112	9.3	1			0.05	B		7	4.9C	Y	4	Dodd,W.J	D	
4.128	819887	5.1	M	112,113	13	5	6.0	102	0.05	B		7	5.1	Y	5	DeYoung,J.A	E	
4.128	819888	5.9	B	112	13.0	4	0.18	256	0.050	B		7	4.5C	Y	1	Will,M	F	
4.146	819889	5.8	B	112	13	3	1.6	120	0.05	B		10	6.5	Y	1	Hays Jr,R.H		
4.15	819890	4.8	S	IHW BAA	15	4			0.035	B		7				Green,D.W.E	G	
4.165	819891	5.8	S	112	9	4			0.05	B		10	5.5	Y	1	House,R.R		
4.169	819892	4.7	B	112		3			0.05	B		20	6.0	Y	4	da Silva,L.A.L		
4.17	819893	4.9	M	112					0.050	B		10	4.0C	Y	38	Morris,C.S		
4.177	819894	5.5	B	112	5	6	0.25		0.15	N	8	60	5.0	Y	4	Gilchrist,D.K	H	
4.188	819895	5.9	S	112	34	3			0.05	B		10	4	C	Y	1	Gronek,J.D	I
4.19	819896	5.1	B	112	9	3			0.035	B		7	6.0	Y	1	Jacobson,E	J	
4.19	819897				34	3				EY		6.0		Y	1	Jacobson,E		
4.208	819898	5.8	S	112	6	3	0.5	285	0.080	B		11		Y	1	Pryal,J	K	
4.21	819899	5.2	S	113	5.5	3			0.080	B		11	5.8	Y	2	Spratt,C.E	L	
4.211	819900	6.3	B	AAVSO	0.2	2			0.115	N		30	4.0	Y	1	Allen,E		
4.2493	819901	5.1	S	DCS	10	5			0.080	B		20	5.0		3	Machholz,D		
4.375	819902	5.6	S	112	5	3	1		0.080	B		20		Y	1	Batza,H	M	
4.381	819903	6.5	S	TYRION	10	6			0.200	C	15	75	3.9			Witte,F	N	
4.41	819904	5.1	S	112	25	3			0.023	B		3	5.9			Jones,A		
4.41	819905					4			0.050	B		7				Jones,A		
4.451	819906								0.078	R	7.5	30				Jones,A	O	
4.451	819907	5.7	M	112	8.2	6	0.83	85	0.2	C	10	50	6.0	Y	3	Ichikawa,K		
4.47	819908	5.6	S	3B	10	6			0.07	B		10	3.5	Y	1	Yasuki,M		
4.484	819909	5.4	S	112	11.2	4			0.05	B		7	3.0	N	1	Kanai,K		
4.486	819910	5.7	M	112	12	5	0.67	105	0.08	B		11	5.5	Y	4	Mitsuma,S		
4.500	819911	5.5	B	112					0.05	B		7	5.5	Y	2	Hayashi,H		
4.52	819912	5.1	S	112		3			0.04	B		7	4.5	N	3	Momose,M		
4.522	819913	6.3	M	112	7	5			0.10	N	10	55	4.0C	Y	1	Kato,T		
4.528	819914	6.1	S	112	6.7	5			0.15	N	6	28	2.5	N	1	Kanai,K		
4.54	819915	5.3	M	112	14.1	5	1	130	0.080	B		11	4	Y	2	Watanabe,N		
4.572	819916	5.6	B	112	15	4	1	100	0.05	B				N	1	Tregaskis,T.B	P	
4.575	819917	5.4	B	112	20					EY		6		Y	1	Tregaskis,T.B	Q	
4.611	819918	5.4	S	112	10				0.05	B		7	4.9	N	1	Bryant,K	R	
4.70	819919	5.6	B	AAVSO					0.08	B						Churyumov,K		
4.715	819920	5.7	M	112	13	4	3.9	107	0.08	B		11	5.3	Y	4	Fleet,R.W	S	
4.72	819921	5.8	B	M					0.05	B		7				Konstantinov,S		
4.76	819922	8.0	B	M					0.10	R						Poroshin,A		
4.81	819923	7	B	M	12	5			0.08	B		40				Palko,Yu		
4.813	819924	5.6	B	113					0.050	B		10	6.5	Y	1	Trebacz,A		
4.821	819925	5.7	M	AAVSO	7	5	0.7	70	0.156	N	10	54	6.7			Kosa-Kiss,A	T	
4.830	819926	5.5	M	CZ	10	4			0.080	B		10	4	Y	1	Bilek,V		
4.830	819927	5.3	M	112		5			0.08	B		10	5.2C	Y	1	Posa,O	U	
4.83	819928	6.5	B	M	18	0			0.03	R	6	8				Drapun,I		
4.833	819929	5.4	M	112		4			0.08	B		10	5.2	Y	1	Csamos,G	V	
4.833	819930	5.3	M	112	15	4			0.15	N	4	37	5.2C	Y	1	Posa,O	U	
4.834	819931	5.5	M	112					0.035	B		9	6.4	Y	1	Begbie,M.J.R		
4.835	819932	5.3	M	112		4			0.15	N	4	37	5.2	Y	1	Csamos,G	V	
4.835	819933	5.4	M	112		4			0.06	B		12	5.2C	Y	1	Posa,O	U	
4.837	819934	5.4	M	112		4			0.06	B		12	5.2	Y	1	Csamos,G	V	
4.837	819935	5.3	M	112	10	5			0.15		15	56	5.2C	Y	1	Posa,O	N	
4.842	819936	6.4	B	112	11	3			0.066	R	15.2	28	5.5	Y	1	Gora,D		
4.844	819937	6.2	S	112	22	5			0.08	B		10	4.4	Y	1	Znasik,M		
4.844	819938	5.9	B	112	5.0	4			0.08	R	15	39	4.5C	Y	1	Szulc,M		
4.846	819939				10.1	5	3.7	108	0.30	N	8.5	102	6.4	Y	1	Begbie,M.J.R	X	
4.847	819940	5.8	S	112	20	6			0.11	R	11	36	4.4	Y	1	Znasik,M		
4.847	819941	5.2	B	112	3	4			0.050	B		10	4.9	Y	1	Laszlo,A		
4.847	819942	5.2	B	CZ	12	4			0.10	O		25	4.0C	Y	1	Micak,I		
4.849	819943	5.7	M	CZ	12.0	6			0.060	B		20	5.7	Y	1	Barak,R		
4.851	819944	5.6	S	112		4			0.06	R	8	15	4.5	Y	1	Schambeck,C.M		
4.854	819945	6.4	B	112	6	5			0.050	R	5.6	19	5.5C	N	1	Sciezor,T	Y	
4.854	819946	6.6	M	112	43	3			0.067	R	12	60	6.0	Y	1	Kosinski,J		
4.854	819947	5.9	B	SAO	9.6	4			0.125	R	6	35	3.0	Y	1	Guthier,O		
4.854	819948	5.4	M	112	15	6			0.050	B		7		Y	1	Mikuz,H	Z	
4.858	819949	6.4	B	112	12	5			0.035	B		7	5.5C	N	1	Sciezor,T	Y	
4.858	819950	6.4	M	112					0.06	R	4.5	10	5.0	Y	1	Chodorowski,F		
4.865	819951				15	5			0.064	R	12	32	5.0	Y	1	Chodorowski,F		
4.872	819952	6.0	M	CZ	10	3	0.3		0.035	B		7	4.0C	Y	1	Broch,F	a	
4.8750	819953	5.2	S	112	10	5			0.080	B		15	4.0	Y	1	Korth,S		
4.875	819954	5.1	B	112		4			0.064	R	6.3	10	6	Y	2	Paradowski,M		
4.882	819955	6.0	M	112	5	3			0.09	M	11	56	3.5	Y	9	Westlund,M	b	
4.888	819956	5.8	B		5.0	4			0.110	R	6.8	47	4.5	Y	1	Lipski,P		
4.892	819957	5.6	B	112					0.050	B		10	6.5	Y	1	Slusarczyk,J		
4.906	819958	5.1	B	112		4			0.05	B		7	5	Y	2	Paradowski,M		
4.927	819959	6.3	B	AAVSO	12	2			0.115	N		30	4.0	Y	1	Alves,A.A		
4.941	819960	5.6	M	CZ		3			0.06	B		12	4.0C	Y	1	Rapavy,P		
4.948	819961	5.6	M	CZ	9	3			0.10	B		25	4.0C	Y	1	Rapavy,P		

NOTE A Diffuse coma.

NOTE B With 31.7 cm Newtonian using 55x: coma appears slightly elliptical, major axis NNE to SSW. Bright knot of material situated significantly NNW of center. Using 110x there is a very strong suggestion of a large, complex system of rays or jets which fills the entire coma. This same impression is to be had at 170x with the rays in the long axis of the coma being certain but not sharp enough to draw. It appears that two rays extend toward the SSW and one goes NNE but there are certainly others that are less clearly seen. The comet's nuclear region is composed of a small knot of bright material containing a minute, stellar feature which is very faint.

NOTE C Very hazy. Nucleus fuzzy.

NOTE D Mild interference by city lights. No tail seen.

NOTE E Ion tail at PA 102; edge of dust tail at PA 115.

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NOTE F (PA value may have been incorrectly determined. Ed.)  
 NOTE G Coma diameter approximate.  
 NOTE H Coma diameter and tail length are rough estimations.  
 NOTE I Exc. see.  
 NOTE J Condensation.  
 NOTE K Very transparent faint broad tail. (Observer gave limit as 9. Ed.)  
 NOTE L Hint of tail. DC approximate.  
 NOTE M (Observer gave limit as 11.0. Ed.)  
 NOTE N Coma diameter approximate. Somewhat cloudy, very difficult. (Translated by IHW staff. Ed.)  
 NOTE O Short, narrow, wispy tail.  
 NOTE P Tail faint. Very clear. (Observer gave limit as approximately 10. Ed.)  
 NOTE Q Coma diameter approximate. Very clear.  
 NOTE R Some haze and light pollution. DC = strong.  
 NOTE S Midpoint on tail: 2.7 deg. at PA 105. End point of tail: 3.9 deg. at PA 107.  
 NOTE T Comet: naked eye.  
 NOTE U Coma dia. = elipt. [sic]  
 NOTE V Coma elliptical.  
 NOTE W Instrument is Coude refractor. Coma dia. = elipt. [sic]  
 NOTE X Tail measurement refers to dust tail only.  
 NOTE Y Very good weather.  
 NOTE Z Very thin cirrus clouds!  
 NOTE a Estimated magnitude uncertainty +/-0.2. Coma diameter determined by comparison with a pair of stars. Measurement from a plot yields 15 arc min.  
 NOTE b Uncertain because of low altitude.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
4.094	831213	0.40	0.204	N	8	58,130	30	4.5	1	Robinson,P.C	A
4.122	831214	1.00	0.050	B	7		19	4.5	1	Will,M	B
4.715	831215	4	0.08	B		11		5.3	4	Fleet,R.W	C
4.857	831216	0.08	0.36	SC	11	325	7	4.0	1	Korth,S	D
4.877	831217	1.6	0.090	M	11	56	15	3.5	9	Westlund,M	E

NOTE A Gas tail at PA 110; dust tail at PA 110-130; hooded border at PAs 140 (62.8'), 175 (17.6'), 260 (6.0'), 340 (9.6'), and 20 (34.8'); half hood at PA 355 (35.6') to 275 (6.0') (end). Slightly stellar central condensation. Coma mainly round. Half hood was very hard to see. I judge this drawing as highly accurate since it was done at scope on preplotted stars. Also, my ability to observe has been improving each time. City lights interfered with the observations.  
 NOTE B The coma can be divided into two concentric zones. The outer zone is of a dimmer more nebulous tone than the inner zone. The tail is almost nonexistent, or barely visible. It gives the impression of being cone shaped. The 3rd magnitude star Nu Hydrae situated at the tip of the tail may have served to hide or at least dim comet Halley's tail with its brilliance. Coma diameter 12.96', inner coma diameter 2.74', tail length 10.97' at PA 256.  
 NOTE C Tail end point at PA 107. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE D ? at about PA 145, very diffuse, ? at about PA 0, very diffuse. Condensation slightly elongated, the comet passed very near to the star south of it in the drawing, but it didn't occult it nor a magnitude decrease has been observed.  
 NOTE E Low altitude.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
4.088	852032	0.225	1.7	0.140	9.1 x 6.1	4.00	Kodak 2415		Y	S	4/P	1	Dilsizian,R	
4.094	852033	0.500	3.6	0.140	4.1 x 2.7	25.00	Kodak 2415		Y	S	2/C	1	Chester,G.R	A
4.101	852034	0.135	2.8		15.2 x 10.2	15.00	Kodak 2415		Y	C	622/S	3	Buchanan,W.T	B
4.124	852035	0.500	3.6	0.140	4.1 x 2.7	30.00	Kodak 2415		Y	S	3/C	1	Chester,G.R	C
4.132	852036	0.305	1.5	0.203	6.8 x 4.5	2.50	Kodak 2415		Y	X	268/P	1	Sabia,J.D	D
4.145	852037	0.500	3.6	0.140	4.1 x 2.7	25.00	Kodak 2415		Y	S	4/C	1	Chester,G.R	E
4.166	852038	0.200	3.5		10.3 x 6.9	8.50	Fujichrome	400/	N	T	772/S	2	Woidyla,B	F
4.172	852039	0.500	3.6	0.140	4.1 x 2.7	20.00	Kodak 2415		Y	S	5/C	1	Chester,G.R	G
4.180	852040	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	270/P	1	Sabia,J.D	H
4.194	852041	0.200	3.5		10.3 x 6.9	9.00	Fujichrome	400/	N	T	776/S	2	Woidyla,B	F
4.201	852042	0.200	3.5		10.3 x 6.9	10.00	Fujichrome	400/	N	T	774/S	2	Woidyla,B	F
4.219	852043	0.300	5.6		6.9 x 4.6	10.00	Ektachrome	400/	N	T	763/S	2	Woidyla,B	F
4.224	852044	0.200	3.5		10.3 x 6.9	6.50	Fuji	400/	N		19/S		Pryal,J	
4.230	852045	0.180	2.8		11.4 x 7.6	10.00	Fujichrome P 1600/	N			12/S	1	Sanford,J	
4.235	852046	0.180	2.8		11.4 x 7.6	6.00	Fujichrome P 1600/	N			13/S	1	Sanford,J	
4.241	852047	0.180	2.8		11.4 x 7.6	5.00	Fujichrome P 1600/	N			14/S	1	Sanford,J	
4.844	852048	0.300	4		6.9 x 4.6	30.00	Fotopan HL	400/27	N	O	13/P	1	Slusarczyk,J	
4.858	852049	0.058	2.8		34.5 x 23.4	20.00	HL	400/27	N		48/S	1	Chodorowski,F	I
4.861	852050	0.950	4.7	0.20	2.2 x 1.4	4.00	Kodak 2415		Y		24/P	1	Conrad,R	J

NOTE A (Observer's image identifier is 2A. Ed.)  
 NOTE B (Observer's image identifier is F-126-22. Ed.)  
 NOTE C (Observer's image identifier is 3A. Ed.)  
 NOTE D Photograph made by J. Kamichitis and J.D. Sabia.  
 NOTE E (Observer's image identifier is 4A. Ed.)  
 NOTE F (Observer's image identifier is preceded by prefix 1. Ed.)  
 NOTE G (Observer's image identifier is 5A. Ed.)  
 NOTE H Anti-tail suspected on negative, very short and stubby. Photograph made by J. Kamichitis and J.D. Sabia.  
 NOTE I (Observer's image identifier is 18/48. Ed.)  
 NOTE J City lights interfered with the observation, Vienna, from room.

## SUB-NETWORK: SPECTROSCOPY

Date(UT)	AON#	Config	Ins	FL	f/	Ap	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
4.168	870145	600G-O	CL	0.135	1.9		31.00	Kodak 2415		Y		626/S	3	Buchanan,W.T	A

NOTE A (Observer's image identifier is E-126-26. Ed.) Comet Halley just below naked eye visibility.

DATE: 5 MAY 1986

DATE: 5 MAY 1986

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
5.035	819962	5.9	B	112	7				0.040	B		8	4.9	Y	1	Levai,R	
5.073	819963	5.4	S	112					0.035	B		7	4.7	Y	4	Hudak,D.M	A
5.073	819964	6.0	B	112		6			0.035	B		7	4.0	Y	1	Stephan,C	B
5.12	819965	4.9	S	IHW BAA	15	4			0.035	B		7				Green,D.W.E	C
5.131	819966	5.9	B	112		5			0.08	B		11	5.4	Y	6	Gorski,L	
5.153	819967	5.7	B	112	19.4	4	0.34	257	0.050	B		7	4.9C	Y	1	Will,M	D
5.18	819968	4.9	M	112					0.050	B		10	4.0C	Y	9	Morris,C.S	
5.19	819969	4.9	B	112					0.035	B		7	6.0	Y	1	Jacobson,E	E
5.19	819970				34	4			BY			7	6.0	Y	1	Jacobson,E	
5.29	819971	6.8	B	M	1	0	2		0.05	B		30				Trost,D	
5.2917	819972	5.4	M	112	12	5			0.05	B		7	6.0	Y	2	Cook,A.J	F
5.31	819973	4.2	M	112	40	3	6	95	BY			6	6.0	Y	13	Keen,R	G
5.31	819974	5.1	M	112					0.05	B		10	6	Y	3	Hale,A	
5.31	819975	5.1	B	112			15	105	BY			6		Y	3	Hale,A	
5.340	819976	5.6	B	112		3	1.6	100	0.050	B		7	5.9	Y	3	Krisciunas,K	H
5.35	819977	5.0	S	N BYA	12		7.5	114	BY			6	6.0	N	1	Lovejoy,T	
5.364	819978	6.8	S	TIRION	7	7			0.050	B		15	2.8			Witte,F	I
5.49	819979	5.7	M	112	10.7	5			0.080	B		11	3	Y	2	Natanabe,N	
5.49	819980	5.7	S	112	10	6			0.07	B		10	3.0	Y	1	Yasuki,M	
5.499	819981	6.4	M	112	6	5	0.2	90	0.10	N	10	55	4.5C	Y	1	Kato,T	
5.500	819982	5.0	S	112					BY			6		Y	1	Seargent,D	
5.500	819983				12	4	2	105	0.08	B		15				Seargent,D	
5.503	819984	5.6	M	112	9	5			0.030	B		8	4.5C	Y	1	Kato,T	
5.510	819985	5.4	S	112	20	5	3	90	0.07	B		10	3.5	Y	1	Kobayashi,J	
5.51	819986	5.0	M	AAVSO	15	5		80	0.065	R	8	16	5.0	Y	5	Nakamura,A	J
5.703	819987	5.8	M	112	10	6	3.5	110	0.04	B		12	6.2	Y	4	Henshaw,C	
5.708	819988	5.7	M	112	12	5	5.4	109	0.08	B		11	5.3	Y	4	Fleet,R.W	K
5.712	819989	5.2		112					BY			5.3		Y	4	Fleet,R.W	
5.75	819990				12				BY							Rudenko,S	
5.758	819991	7.9	M	88					0.035	B		9	6.5	Y	1	Begbie,M.J.R	
5.77	819992	6	B	M		5	0.6	111	0.04	B		12				Rudenko,S	
5.799	819993	5.5	M	112	10	4			0.08	B		10	4.1C	Y	1	Posa,O	
5.819	819994	5.0	B	112					0.030	B		8	4.0C	Y	2	Kieltyka,G	
5.82	819995	6.7	B	M		5			0.08	B		40				Palko,Yu	
5.823	819996	5.2	M	112	24	5			0.05	B		12	3.5	Y	1	Tanti,T	L
5.826	819997	6.0	S	112		5			0.08	B		10	4.7	Y	1	Znasik,M	
5.826	819998					5			0.064	R	12.5	30	4.0C	Y	2	Kieltyka,G	
5.826	819999	6.2	M	CZ	10	5			0.05	B		7				Silhan,J	
5.830	820000	5.7	M	CZ	10	4			0.080	B		10	5.0	Y	1	Bilek,V	
5.833	820001	5.6	M	CZ	10	5			0.050	B		7	5.0	Y	1	Bilek,V	
5.833	820002	6.5	M	CZ	30	3			0.035	B		7	5.0T	Y	1	Broch,F	M
5.833	820003	5.7	M	CZ	15	3			0.05	B		7				Kucera,P	
5.833	820004	5.6	B	112	3	3			0.050	B		10	4.9C	N	1	Laszlo,A	
5.837	820005	6.4	M	CZ	15	5			0.05	B		7				Silhan,J	
5.840	820006	5.9	S	112	18	6			0.11	R	11	36	4.7	Y	1	Znasik,M	
5.844	820007	6.1	B	CZ	10	3			0.05	R	10	13	4.5	Y	1	Polak,J	N
5.847	820008	5.8	S	112	11	3			0.05	B		10	4.5C	Y	1	Menichetti,R	
5.85	820009	5.2	B	112	12	4	0.50	83	0.050	B		7	5.5	Y	2	Merlin,J.-C	
5.85	820010	6.6	B	M	12	0			0.03	R	6	8				Drapun,I	
5.85	820011	5.5	B	AAVSO	12	4	0.5	113	0.05	B		7				Chernis,K	
5.851	820012	6.5	B	112	10	2			0.066	R	15.2	28	5.0	Y	1	Gora,D	
5.854	820013	6.6	M	112	41	3			0.067	R	12	60	6.0	Y	1	Kosinski,J	
5.856	820014	5.8	B	CZ	10	6			0.060	B		20	5.5	Y	1	Barak,R	
5.858	820015	6.2	B	CZ	6	5			0.04	B		7	5.0			Brancik,K	
5.861	820016	5.5	S	112	13	6	1.50	106	0.13	R	4	21	5.2	Y	1	Campos,J	
5.861	820017	5.9	B	112	5.0	4			0.08	R	15	39	4.1C	Y	1	Szulc,M	
5.866	820018	5.7	B	112					0.050	B		10	6.0	Y	1	Slusarczyk,J	
5.868	820019	5.5	S	112	12	5			0.063	B		9	2.5C	N	1	Kammerer,A	O
5.868	820020	5.7	M	112	11	4			0.06	B		12	5.5C	Y	1	Rapavy,P	
5.87	820021	5.5	S	112					0.05	B		7	5.5		39	Shanklin,J.D	
5.878	820022	5.1	M	3B	5	7			0.050	B		7	6.0	Y	1	Stott,D	
5.878	820023	5.6	M	112		4			0.08	B		10	5.0C	Y	1	Rapavy,P	
5.878	820024	6.1	M	CZ	20	6			0.03	B		8				Silhan,J	
5.884	820025	5.2	S	112	17	5	0.5	105	0.05	B		10	4.0	Y	1	Eurat,G.M	
5.888	820026				17	6	0.5	105	0.08	B		15	4.0	Y	1	Eurat,G.M	P
5.89	820027	6.0	B	DCS 13		3			0.080	B		15	5.5C	Y	1	Keijmel,P.C	
5.896	820028	5.9	B	112	8	3			0.07	B		10	5.6	N	7	Deconinck,M	
5.896	820029	5.4	S	112	7.5	6			0.25	N	6	60	4.1	Y	1	Gainsford,M.J	Q
5.899	820030	6.5	M	112					0.06	R	4.5	10	4.5	Y	1	Chodorowski,F	
5.899	820031	5.8	M	112	6	2			0.09	M	11	56	4.0	Y	9	Westlund,M	R
5.903	820032	5.6	S	112	11.5	3			0.08	B		11	4.1	Y	1	Gainsford,M.J	
5.903	820033	5.9	S	112	16	2	0.5	90	0.050	B		10	5.9	Y	2	Rogers,J.E	S
5.903	820034	5.6	S	112	7.1	4	0.15	93	0.070	B		16	4.9C	Y	1	Taylor,M.D	T
5.906	820035				8	5			0.064	R	12	32	4.5	Y	1	Chodorowski,F	
5.906	820036	5.4	S	112	7.4	5.6	0.10	45	0.050	B		10	4.7	Y	3	Abbott,J	U
5.910	820037	5.7	S	112	10.0	6		100	0.050	B		10	5.0	Y	1	Rossi,L	
5.910	820038	5.7	B	CZ	12	4			0.10	O		25	4.0C	Y	1	Nicek,I	
5.917	820039	5.5	S	112	13.5	3	0.17	93	0.040	B		8	4.9C	Y	1	Taylor,M.D	
5.98	820040	5.8	B	AAVSO			4.5		0.04	B		7				Kiselev,N	

NOTE A Magnitude estimate uncertainty +/-0.1 mag.

NOTE B Sky hazy. Comet not visible naked eye. Getting more diffuse. No tail seen.

NOTE C Coma diameter approximate.

NOTE D (PA value may have been incorrectly determined. Ed.)

NOTE E Condensation.

NOTE F Tail north boundary 3.50 deg. at PA 102, south boundary 3.30 deg. at PA 117.

NOTE G Observation from Tahiti.

NOTE H Tail plotted on chart.

NOTE I Very difficult. (Translated by IHW staff. Ed.)

NOTE J Tail length = yes.

NOTE K Midpoint on tail: 3.2 deg. at PA 105. End point of tail: 5.4 deg. at PA 109.

NOTE L Seeing good, transparency fair. Haze. Clouds.

NOTE M Estimated magnitude uncertainty +/-0.3. Coma diameter determined by comparison with a pair of stars. Measurement from a plot yields 10 arc min.

NOTE N Magnitude estimate uncertainty +/-0.3 mag.

NOTE O Relatively bright sky.

NOTE P Tail at PA 105 is broad. Tail at PA 30 is narrow and faint.

NOTE Q Coma diameter 7.5'+.

NOTE R Uncertain because of low altitude.

NOTE S Coma slightly pear-shaped, PA approximately 80 deg., no nucleus. Tail length and PA approximate.

NOTE T Transparent and dark. Antoniadi II. Fan 9 arc min. or more, PA 10 to 93.

DATE: 5 MAY 1986

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NOTE U Comparison stars (4.9, 6.0), (4.9, 5.4). The coma's long axis was oriented along PA 88-268. The northern "tail-lobe" was 0.10 deg. long at PA 45. The central "tail-lobe" was 0.08 deg. long at PA 88. The southern "tail-lobe" was 0.08 deg. long at PA 162.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
5.144	831218	0.92	0.050	B		7	26	4.9	1	Will,M	A
5.295	831219	3	0.050	B		7	10	6.0	2	Cook,A.J	
5.708	831220	4	0.08	B		11		5.3	4	Fleet,R.W	B
5.885	831221	2.3	0.08	B		15	29	4.0	1	Hurst,G.M	C
5.896	831222	1.6	0.090	M	11	56	10	4.0	9	Westlund,M	D

NOTE A The outer coma, zone 3, is circular and is the most nebulous portion of the coma. The inner coma, zone 2, is oval shaped and more concentrated. Zone 1, the central peak of brightness in the coma appears slightly larger than dot shape indicating that it too could have measurable size. The tail is a conical shape overall. The boundaries of the tail with space are curved toward the vertex or tip. More diffuse and fainter than the rest of the comet, the tail has star shining through it, probably as bright as magnitude 8. Coma diameter (zone 3) 19.37'; zone 2 major axis 11.14', minor axis 7.75', zone 1 diameter 2.42'; tail length 20.34' at PA 257.

NOTE B Tail end point at PA 109. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C Tail at PA 105 broad and diffuse. Tail at PA 30 narrower and faint. Both also seen in 10x50 binoculars.

NOTE D Low altitude.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
5.148	852051	0.050	2.0			3.50	Kodak Tri-X	400/	N	X	19/P		Falsarella,N	
5.243	852052	0.050	2.8		39.6 x 27.0	10.00	Fujichrome	1600/	N	T	2/S	1	Coco,M	
5.275	852053	0.300	1.5	0.200	6.9 x 4.6	8.00	Kodak 2415		Y	S	24/P	3	Yen,B	A
5.331	852054	0.300	1.5	0.203	6.9 x 4.6	15.00	Kodak 2415		Y	X	18/P	1	Marafie,A.H	B
5.849	852055	0.100	2.8		20.4 x 13.7	5.00	HL	400/27	N		62/S	1	Chodorowski,F	C
5.852	852056	0.300	4		6.9 x 4.6	30.00	Fotopan HL	400/27	N	O	14/P	1	Slusarczyk,J	
5.915	852057	1.780	5	0.356	1.2 x 0.8	25.60	Fuji 1600	1600/	N	M	1/P	1	Mobberley,M	D

NOTE A (Observer's image identifier is 10. Ed.) Instrument is Schmidt camera.

NOTE B Instrument is Schmidt camera.

NOTE C (Observer's image identifier is 24/62. Ed.)

NOTE D This color slide film was processed as a negative.

DATE: 6 MAY 1986

DATE: 6 MAY 1986

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
6.069	820041	6.4	B	AAVSO	10	3			0.115	N	7.8	30	4.2	Y		Alves, A.A	
6.069	820042	5.7	B	112	7				0.040	B		8	4.9	Y	1	Leval, R	A
6.076	820043	5.3	S	112					0.035	B		7	4.8	Y	4	Hudak, D.M	
6.104	820044	5.7	B	112					0.080	B		20	4.5	Y		Smith, D	
6.21	820045	5.0	B	112	12	4			0.035	B		7	6.0	Y	1	Jacobson, E	B
6.21	820046				29	4				EY			6.0	Y	1	Jacobson, E	
6.37	820047	4.4	M	112						EY			5.5	Y	13	Keen, R	C
6.38	820048	5.1	S	112	20	3			0.023	B		3	5.4			Jones, A	
6.38	820049						0.6	115	0.050	B		7				Jones, A	D
6.38	820050					8			0.317	N	5	86				Jones, A	E
6.458	820051	5.1	S	112						EY			6	Y	1	Seargent, D	
6.458	820052						2.6	107	0.08	B		15				Seargent, D	
6.48	820053				12		6.5	100		EY			6.3	Y	1	Lovejoy, T	F
6.50	820054	4.9	M	112	10	6			0.15	N	5.3	32	5.0C	Y	1	Oka, A	
6.525	820055	5.8	S	112	18	4	2.2	90	0.07	B		10	6	Y	1	Kobayashi, J	
6.698	820056	5.4	B	112	17	5	2		0.05	B		7	4.8	Y	4	Vincent, J	G
6.712	820057	5.9	B	112	10	1	2	208	0.050	B		7	6.2	Y	1	McBain, J	H
6.715	820058	5.5	M	112	11	5	4.3	107	0.08	B		11	5.2	Y	4	Fleet, R.W	I
6.76	820059	5.9	B	M	4	4	0.4	273	0.11	N		30				Yurchenko, Yu	
6.781	820060	5.5	S	112	10	6	2.00	104	0.13	R	4	21	5.4	Y	1	Campos, J	
6.79	820061	9	B	M					0.10	R						Poroshin, A	
6.80	820062	4.9	B	E	12	5	1	105	0.05	B		7				Mormil, V	
6.800	820063	5.3	M	112	14	5	1.4	105	0.089	R	5.5	18	5.1	N	1	Ventura, F	J
6.82	820064	5.0	B	E	10	5			0.05	B		7				Mormil, V	
6.826	820065	6.7	M	CZ	10	0	0.5	145	0.035	B		7	4.5T	Y	1	Hroch, F	K
6.83	820066	6.8	B	M	18	0			0.03	B		8				Drapun, I	
6.833	820067	6.9	112?		6	3			0.350	SC	11	120	TC		1	Marx, H	L
6.833	820068	6.4	M	CZ	10	2			0.05	B		7				Silhan, J	
6.838	820069	5.6	M	112	7	4	0.5	120	0.15	B	15	56	5.2C	Y	1	Posa, O	M
6.840	820070	5.9	B	112	8	6			0.050	B		12	3.0	Y	1	Mosch, J	
6.840	820071	6.2	M	CZ	15	2			0.03	B		8				Silhan, J	
6.844	820072	5.5	M	112	4				0.08	B		10	5.2	Y	1	Csomos, G	N
6.844	820073	5.1	B	112	4				0.064	R	6.3	10	6	Y	2	Paradowski, M	
6.844	820074	5.5	M	112	10	4	0.5	120	0.15	N	4	37	5.2C	Y	1	Posa, O	O
6.847	820075	6.0	S	112	9.9	3	0.41	90	0.10	B		14	5.0	Y	1	Hasubick, W	
6.847	820076	6.0	B	112	9.9	3			0.03	B		8	5.0	Y	1	Hasubick, W	
6.848	820077	6.6	B	112	10	2			0.066	R	15.2	28	5.5	Y	1	Gora, D	
6.848	820078	5.6	M	112	4				0.06	B		12	5.2C	Y	1	Posa, O	P
6.850	820079	5.5	M	112	10	4	0.4	120	0.15	N	4	37	5.2	Y	1	Csomos, G	
6.851	820080	5.9	S	112	16	6			0.11	R	11	36	4.6	Y	1	Znasik, M	
6.851	820081	5.2	B	112					0.030	B		8	4.0C	Y	2	Kieltyka, G	
6.851	820082	5.6	M	112					0.08	B		10	5.2C	Y	1	Posa, O	P
6.854	820083	6.1	S	112	21	5			0.08	B		10	4.6	Y	1	Znasik, M	
6.854	820084	6.2	B	CZ	6	4			0.04	B		7	4.5	Y	1	Brancik, K	
6.854	820085	5.5	M	112	6				0.06	B		12	5.2	Y	1	Csomos, G	Q
6.856	820086	6		CZ					0.060	B		20	4	N	1	Barak, R	R
6.858	820087	5.9	B	CZ	12	5			0.10	O		25	5.0C	Y	1	Micek, I	
6.858	820088	6.0	B	112	4.5	3			0.08	R	15	39	4.1C	Y	1	Szulc, M	
6.861	820089	6.0	S	112	20	4			0.06	B		12	4.6	Y	1	Znasik, M	
6.861	820090	5.8	M	CZ	15	2			0.05	B		7				Kucera, P	
6.861	820091	6.7	M	112	41	3			0.067	R	12	60	5.5	Y	1	Kosinski, J	
6.861	820092	6.1	M	CZ	15	1			0.05	B		7				Silhan, J	
6.865	820093	5.0	B	112		5			0.064	R	12	60	4.0	Y	1	Moskal, W	
6.865	820094	5.1	B	112		4			0.05	B		7	6	Y	2	Paradowski, M	S
6.865	820095	5.9	B	112		4			0.06	R	8	15	5.0	N	1	Schambeck, C.M	
6.865	820096	5.8	B	112		4			0.090	N	7	26	4.5	Y	1	Vohla, F	
6.868	820097	5.0	M	112	28	6			0.030	B		8	5.0	Y	14	Villa, M	
6.869	820098	5.1	S	112	12	5	1	100	0.152	N	5	44	3.8	Y	2	Moeller, M	T
6.871	820099	6.9	B			2			0.080	R	6.2	12	3.5	Y	1	Lieder, F	
6.872	820100	6.2	M	CZ	15				0.03	B		8				Silhan, J	
6.875	820101	6.7	M	112					0.06	R	4.5	10	4.0	Y	1	Chodorowski, F	
6.875	820102	6.0							0.080	B		15	4	Y	1	Nagele, A	U
6.882	820103				12	5			0.064	R	12	32	4.0	Y	1	Chodorowski, F	
6.883	820104	6.0	B		5.2	4			0.110	R	6.8	47	5.0	Y	1	Lipski, P	
6.890	820105	6.2	M	112			4.5		0.035	B		9	5.5	Y	1	Begbie, M.J.R	V

NOTE A Magnitude estimate uncertainty +/-0.1 mag.

NOTE B Condensation.

NOTE C Observation from Tahiti.

NOTE D Also 7.8 R, 30x.

NOTE E Large diffuse coma, small strong condensation.

NOTE F Tail still naked eye.

NOTE G PA 85/95.

NOTE H Visible with naked eye. (PA value appears incorrect. Ed.)

NOTE I Midpoint on tail: 1.3 deg. at PA 108. End point of tail: 4.3 deg. at PA 107.

NOTE J A very faint broad tail, widening from the coma outwards. It measured a surprising 84 arc min. long.

NOTE K Estimated magnitude uncertainty +/-0.5. Coma diameter determined by comparison with a pair of stars. Measurement from a plot yields 15 arc min.

NOTE L Coma diameter approximate. (Observer indicated "A" method [Argelander?]. Ed.)

NOTE M Instrument is Coude refractor.

NOTE N Coma elliptical.

NOTE O Tail length is lower limit.

NOTE P Coma dia. = circle.

NOTE Q Coma circular.

NOTE R The observation was ended by clouds.

NOTE S No tail.

NOTE T Hazy.

NOTE U (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are SAO 156124, 156095, 156310, 156170.

NOTE V Tail measurement refers to dust tail only.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
6.083	831223	0.83	0.15	N	8	38		5.6	1	Cuthill, L	A
6.095	831224	0.4	0.204	N	8	58,271	35	4.0	1	Robinson, P.C	B
6.715	831225	4	0.08	B		11		5.2	4	Fleet, R.W	C

NOTE A Coma DC = 6. Tail at PA 110 gas - 155. Axis of head at PA 315. Coma has a fairly strong central condensation. Coma size - 4 arc min. A possible gas tail at PA 110 deg. Magnitude estimated to be 6.0 using 10x50 binoculars (Morris method).

NOTE B Gas tail at PA 115; main dust tail at PA 120 to 135 (42.8') to 210 (3.2'); hood border, at PAs 160 (61.6'), 170 (38.8'), 180

DATE: 6 MAY 1986

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(18.0'), 290 (3.2') and 10 (27.2'); parabolic hood passes about 3' NW of center, tangent to coma. Tail at PA 0; tail at PA 295; forward jet at PA 295; "wing" jet at PAs 300 (0.16'), 210 (0.64'), 180 (1.36'); and "wing" jet at PAs 300 (0.16'), 30 (0.56'), 55 (1.6 deg.). [sic] Slightly stellar central condensation is non stellar at 271x. Close up drawing of coma shows that the NW half is much brighter than opposite side. "Wing" jets are curved gradually SE. Comet features were plotted with preplotted stars. City lights interfered with the observation. Two drawings in this listing.

NOTE C Tail end point at PA 107. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
6.029	852058	0.050	2.0			3.50	Kodak Tri-X	400/	N	X	20/P		Falsarella,N	
6.078	852059	0.050	2.0			3.50	Kodak Tri-X	400/	N	C	3/P		Falsarella,N	
6.087	852060	0.305	1.5	0.203	6.8 x 4.5	3.50	Kodak 2415		Y	X	275/P	1	Sabia,J.D	A
6.110	852061	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	277/P	1	Sabia,J.D	B
6.128	852062	0.050	4		39.6 x 27.0	10.00	Kodak Tri-X	400/27	N	X	043/P	1	Bro,M	C
6.142	852063	0.500	8		4.1 x 2.7	10.00	Kodak Tri-X	400/27	N	X	044/P	1	Bro,M	C
6.322	852064	0.300	1.5	0.203	6.9 x 4.6	7.00	Kodak 2415		Y	X	19/P	1	Marafie,A.H	D
6.858	852065	0.950	4.7	0.20	2.2 x 1.4	2.00	Kodak 2415		Y	X	25/P	1	Conrad,R	E
6.890	852066	0.300	4		6.9 x 4.6	20.00	Fotopan HL	400/27	N	O	15/P	1	Slusarczyk,J	

NOTE A Anti-tail suspected on negative, very short and stubby. Photograph made by J. Kamichitis and J.D. Sabia.

NOTE B Anti-tail noted on negative, very short and spike-like. Not seen visually. Photograph made by J. Kamichitis and J.D. Sabia.

NOTE C Some distant heat lightning present.

NOTE D Instrument is Schmidt camera.

NOTE E City lights interfered with the observation; Vienna, from room.

DATE: 7 MAY 1986

DATE: 7 MAY 1986

## 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
7.028	820106	5.8	B	112		1		98	0.05	B		10	4.9	Y	1	Harris, L.A	A
7.052	820107	6.3	M	112	6.5	3			0.114	N	8	45	3.8	Y	1	Mac Kenzie, G	
7.125	820108	6.0	B	112					0.080	B		20	4.5	Y		Smith, D	
7.149	820109	6.2	B	112	10	2			0.05	B		7	4.0		1	Laird, R	
7.17	820110	6.1	B	112	13	3			0.080	B		20		Y		Kronk, G	
7.1826	820111	5.6	S	DCS	12	5			0.080	B		20	5.4		3	Machholz, D	
7.19	820112	5.1	S	112					0.050	B		10	4.0C	Y	9	Morris, C.S	
7.198	820113	6.2	S	112	34	3			0.05	B		10	4 C	Y	1	Gronek, J.D	B
7.21	820114						0.5			EY					7	Edberg, S.J	
7.29	820115	4.5	M	112						EY			5.5	Y	15	Keen, R	C
7.39	820116	5.6	S	112					0.023	B		3	5.4			Jones, A	
7.39	820117	5.7	S	112	13				0.049	B		30				Jones, A	
7.39	820118					4	0.4	107	0.078	R	7.5	3				Jones, A	
7.40	820119					7			0.317	N	5	86				Jones, A	
7.457	820120	5.7	M	112	5.4	6	0.50	90	0.1	N	10	56	5.0	Y	1	Ichikawa, K	
7.47	820121	5.6	B		20	6			0.05	B		10	4.5	Y	1	Uda, K	
7.479	820122	6.2	M	112	12	5			0.08	B		11	4 C	Y	1	Mitsuma, S	
7.48	820123	5.6	S	AAVSO	10	4			0.07	B		10	5.0	Y	1	Hayashi, A	D
7.48	820124	6.2	M	112	11.7	4			0.080	B		11	3	Y	2	Watanabe, N	
7.482	820125	6.2	M	112	6	4			0.10	N	10	55	3.5C	Y	1	Kato, T	E
7.482	820126	5.7	S	112	15	4	2.5	90	0.07	B		10	5.5	Y	1	Kobayashi, J	
7.49	820127	5.5	S	AAVSO	10	5	0.25	80	0.13	N	6.3	24	5.0	Y	1	Hayashi, A	
7.51	820128	6.0	S	112		2			0.08	B		11	3.0	N	1	Momose, M	
7.52	820129	5.4	M	AAVSO	15	4			0.065	R	8	16	4.5	Y	6	Nakamura, A	F
7.52	820130	5.5	M	3B					0.05	B		7	4.5	Y	2	Suzuki, K	
7.52	820131		3B		2.0	4			0.31	N	5.7	147	4.5	Y	2	Suzuki, K	G
7.524	820132	5.9	B	112	15	3			0.05	B		7	4.0	Y	1	Hayashi, B	H
7.528	820133	5.8	B	112					0.035	B		7		Y	2	Okada, M	
7.535	820134	7.1	S	112		3			0.12	N	6	60	1.0C	Y	1	Kishi, A	
7.549	820135	5.9	B	3B					0.07	B		10	3.6	Y	1	Date, M	
7.55	820136	6.2	S	112	10	6			0.07	B		10	3.0	Y	1	Yasuki, M	
7.743	820137	5.7	M	112	12	5	7.0	107	0.08	B		11	5.9	Y	1	Fleet, R.W	I
7.750	820138	5.2	M	112		8				EY			5.9	Y	1	Fleet, R.W	
7.75	820139	5.0	B	E	10	5	1	106	0.05	B		7				Mormil, V	
7.77	820140	6.4	M	M	15	5			0.04	B		12				Maydik, A	
7.781	820141	5.6	B	112	17	5	1.5	100	0.05	B		7	5.1	Y	4	Vincent, J	
7.792	820142	5.4	M	112	14	5			0.089	R	5.5	18	5.1	N	1	Ventura, F	
7.795	820143	6.1	S	112						B		10	4.5	Y	3	Birch, G	J
7.80	820144	4.8	B	E	15	5	3	106	0.05	B		7				Mormil, V	
7.809	820145	5.9	M	112	23	5			0.05	B		12	5.5	Y	1	Tanti, T	K
7.833	820146	6.0	M	CZ	15	2			0.05	B		7			1	Kucera, P	
7.833	820147	6.2	M	AAVSO	6	3	0.5	67	0.156	N	10	54	5.0			Kosa-Kiss, A	L
7.837	820148	5.1	M	112	25	6			0.030	B		8	4.5	Y	14	Villa, M	
7.840	820149	6.8	B	112	9	2			0.066	R	15.2	28	5.5	Y	1	Gora, D	
7.84	820150	5.0	B	E	8	5		106	0.05	B		7				Mormil, V	
7.840	820151	6.5	M	CZ	10	3			0.05	B		7			1	Silhan, J	E
7.840	820152			112	18	14			0.07	B		20	5.5	Y	1	Tanti, T	K
7.8437	820153	5.9	S	112		3			0.080	B		15	3.5C	Y		Giuntoli, M	
7.844	820154	6.3	B	CZ	10	3			0.10	O		25	4.0C	Y	1	Micek, I	
7.847	820155	5.7	M	CZ	12	6			0.080	B		10	5.0	Y	1	Bilek, V	
7.851	820156	6.1	B	112	4.5	3			0.08	R	15	39	4.1C	Y	1	Szulc, M	
7.854	820157	6.3	M	112					0.035	B		9	5.5	Y	1	Begbie, M.J.R	
7.854	820158	6.5	M	CZ	15	3			0.05	B		7			1	Silhan, J	M
7.858	820159	6.8	M	112	13	11			0.135	R	15	80	5.1T	Y	1	Humenansky, J	
7.858	820160	6.1	M	CZ	10	1			0.05	B		7			1	Kucera, P	
7.859	820161	6.3	B	CZ	5.0	6			0.060	B		20	5	Y	1	Barak, R	
7.861	820162	6.6	M	112					0.06	R	4.5	10	4.5	Y	1	Chodorowski, F	
7.861	820163	5.2	B	112					0.030	B		8	4.0	Y	2	Kieltyka, G	
7.868	820164	6.1	S	112	18	5			0.11	R	11	36	4.3	Y	1	Znasik, M	
7.868	820165				12	5			0.064	R	12	32	4.5	Y	1	Chodorowski, F	
7.871	820166				4.9	5	2.8	100	0.30	N	8.5	102	5.5	Y	1	Begbie, M.J.R	N
7.878	820167	6.3	S	112	20	5			0.08	B		10	4.3	Y	1	Znasik, M	
7.889	820168	6.8	M	CZ	12	2			0.055	R	6	12			1	Silhan, J	
7.896	820169	5.7	S	U HYA	14	5			0.050	B		7		Y	1	Mikuz, H	O
7.90	820170	6.0	S	112					0.08	B		10	5.3		1	Shanklin, J.D	P
7.90	820171	5.4	B	112	14	3	2.50	95	0.050	B		7	5.5	Y	2	Merlin, J.-C	
7.90	820172	6.6	B	AAVSO	15	4			0.11	B		20				Chernis, K	
7.903	820173			112	8	1			0.09	M	11	56	3.0	Y	9	Westlund, M	Q
7.910	820174	5.8	S	112	8.0	4			0.070	B		16	4.1C	Y	1	Taylor, M.D	R
7.924	820175	5.9	S	112	11.5	6		105	0.050	B		10	5.5	Y	1	Rossi, L	

NOTE A Comparison stars = 5.7 and 6.0 (chart 112, Manual II, Bohr. method). (Translated by I8W staff. Ed.)

NOTE B Exc. see.

NOTE C Observation from Tahiti.

NOTE D Tail detected?

NOTE E Haze.

NOTE F Tail length = yes?

NOTE G Meter. (Coma diameter. Ed.) 0.4 deg. tail measured with magnification of 55.

NOTE H Tail length 0.17 deg. to 0.33 deg.

NOTE I Midpoint on tail: 3.4 deg. at PA 107. End point of tail: 7.0 deg. at PA 107.

NOTE J Lights.

NOTE K Seeing good, transparency excellent.

NOTE L 0.7 deg. tail PA 119, 127, 136 deg.

NOTE M Clear sky.

NOTE N Tail measurement refers to dust tail only.

NOTE O Possible very thin cirrus clouds.

NOTE P Tail not certain.

NOTE Q Low altitude. Just visible.

NOTE R Antoniadi III. Haze.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
7.051	831226	0.61	0.114	N	8	45	45	3.8	1	Mac Kenzie, G	
7.743	831227	4	0.08	B	11	11		5.9	1	Fleet, R.W	A
7.898	831228	1.6	0.090	M	11	56	15	3.0	9	Westlund, M	B
7.927	831229	0.9	0.40	N	5	81,170	10	5.5	2	Merlin, J.-C	C

NOTE A Tail end point at PA 107. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Low altitude; just visible.



DATE: 7 MAY 1986

DATE: 7 MAY 1986

NOTE C Tail at PA 61, tail at PA 95, axis of a multiple-tail structure; jet at PA 201, bright feature ending in a fountain like structure (toward PA 146); jet at PA 242, nearly sunward; jet at PA 303, short feature prolonged by a fountain-like structure (toward PA 34.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
7.835	852067	0.300	1.5	0.200	6.9 x 4.6	8.00	Kodak 2415		Y		506/P	4	Jager,M	A
7.858	852068	0.950	4.7	0.20	2.2 x 1.4	2.00	Kodak 2415		Y		26/P	1	Conrad,R	B
7.861	852069	0.300	4		6.9 x 4.6	10.00	HL	400/27	N		57/S	1	Chodorowski,F	C

NOTE A Magnitude 5.4, antitail 13 arc min. at PA 287. (Print submitted is composite of two 4 min. exposures separated by 5 min. Ed.)

NOTE B City lights interfered with the observation, Vienna, from room.

NOTE C (Observer's image identifier is 34/57/58. Ed.)

DATE: 8 MAY 1986

DATE: 8 MAY 1986

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	820176	5.9	B	AAVSO					0.04	B		7				Kiselev,N		
8.049	820177	5.9	B	112		4			0.05	B		20	5.0	Y	1	da Silva,L.A.L		
8.059	820178	6.9	B	AAVSO		3			0.115	N	7.8	30	4.0	Y		Alves,A.A		
8.090	820179	5.4	S	112					0.035	B		7	4.1	Y	4	Eudak,D.M		
8.097	820180	5.2	S	112	3.1	2			0.08	R	11	39	4.1C	N	1	Graves,D	A	
8.110	820181	5.9	S	112	13	3			0.05	B		10	5.5C	Y	3	House,R.R		
8.120	820182	5.9	S	112	8	5			0.05	B		7	5.5C	Y	3	House,R.R		
8.122	820183	5.9	S	112	20	4			0.035	B		7	6.2	Y	3	Morrison,W		
8.122	820184	5.4	B	112	9.2	3			0.127	SC	10	50	4.4	Y	1	Rousom,J	B	
8.128	820185	6.1	B	112	13	3	1.8	120	0.05	B		10	6.5	Y	1	Hays Jr,R.H		
8.14	820186	6.4	B	112	14	3			0.080	B		20		Y		Kronk,G		
8.146	820187	6.3	B	112					0.080	B		20	4.5	Y		Smith,D		
8.22	820188	5.2		112			10	100		EY			6.0	Y	16	Morris,C.S	C	
8.23	820189	5.4	M	112	13	4	10	100	0.050	B		10	6.0	Y	16	Morris,C.S		
8.240	820190	6.3	S	112	34	3			0.05	B		10	4	C	Y	1	Gronck,J.D	D
8.2569	820191	5.2	M	112	13	6	10.40	104	0.05	B		7	6.4	Y	3	Cook,A.J	E	
8.2569	820192				13	10	104			EY			6.4	Y	3	Cook,A.J	F	
8.406	820193	5.8	S	112	11				0.025	B		3		Y	1	Seargent,D		
8.406	820194				11	5	4	110	0.08	B		15				Seargent,D	G	
8.41	820195	5.7	S	112	20				0.049	B		3	5.4	Y		Jones,A		
8.414	820196	5.9	S	112			6		0.05	B		7	5.5C	Y	6	Garradd,G		
8.417	820197	5.8	B	112	3				0.05	B		20		Y	1	Tregaskis,T.B	H	
8.420	820198			112						EY		6		Y	1	Tregaskis,T.B	I	
8.47	820199	5.7	M	3B		4			0.05	B		7	4.0	Y	2	Suzuki,K	J	
8.50	820200	5.7	M	112	10	5			0.15	N	5.3	32	5.0C	Y	1	Oka,A		
8.500	820201	6.4	M	112	9.5	4			0.08	B		11	3	Y	1	Mitsuma,S		
8.51	820202	5.7	S	112						EY			6.6	Y		Clark,M.L		
8.51	820203	5.9	S	112	21				0.03	R		6	6.6	Y		Clark,M.L		
8.52	820204	6.3	S	112	14	7	1.9	103	0.25	N	5	38	6.6	Y		Clark,M.L	K	
8.56	820205	6.3	M	112	14.1	3	0	100	0.080	B		11	4.5	Y	2	Watanabe,N		
8.67	820206	6.0	B	AAVSO					0.08	B						Churyumov,K		
8.71	820207	6.7	B	M	7	0			0.05	B		7				Konstantinov,S		
8.71	820208	5.8	B	AAVSO					0.11	R						Churyumov,K		
8.760	820209	5.5	M	112			3.6	108		EY			6.1	Y	1	Fleet,R.W		
8.767	820210	5.9	M	112	14	6	13.9	107	0.08	B		11	6.1	Y	1	Fleet,R.W	L	
8.77	820211	6.5	B	AAVSO					0.20	R						Churyumov,K		
8.780	820212	6.0	M	112					0.035	B		9	6.2	Y	1	Begbie,M.J.R		
8.792	820213	6.0	B	112	17	5	1	90	0.05	B		7	4.8	Y	4	Vincent,J		
8.801	820214				6.8	6	3.3	105	0.30	N	8.5	102	6.2	Y	1	Begbie,M.J.R	M	
8.816	820215	5.6	M	112	12	4		100	0.089	R	5.5	18	5.4	N	1	Ventura,F		
8.833	820216	6.1	M	112	20	5	1.1	102	0.05	B		12	5.5	Y	1	Tanti,T	N	
8.840	820217	6.5							0.080	B		15	4	Y	1	Nagele,A	O	
8.844	820218	5.6	S	112		4			0.05	B		7		Y	1	Dziura,W	P	
8.850	820219	6.6	B	112		6			0.050	B		12	3.5	Y	1	Mosch,J		
8.851	820220	6.1	M	112	20	11	4	1.5	102	0.08	B	11	5.5	Y	1	Gubo,H		
8.851	820221	6.1	S	112	10.8	4			0.10	B		14	5.0	Y	1	Hasubick,W	Q	
8.851	820222	6.2	B	112	10.8	4			0.10	B		14	5.0	Y	1	Hasubick,W	Q	
8.854	820223	6.2	B	112	11.1	4	0.37	90	0.080	B		11	5.0	Y	1	Koch,V		
8.854	820224	6.4	B	112	8.6	4	0.42	90	0.080	B		20	5.0	Y	1	Koch,B.O		
8.854	820225	6.0	B	112					0.090	N	7	26	4.5	Y	1	Vohla,F		
8.858	820226	6.3	B	112	13.0	3			0.03	B		8	5.0	Y	1	Hasubick,W		
8.861	820227	7.0		112?	8	5			0.175	R	15	43	4.2C	Y	1	Marx,H	R	
8.861	820228	6.5	B	112	7	4	1.2		0.06	R	8	15	5.5	Y	1	Schambeck,C.M	S	
8.865	820229	6.0		112	6	3			0.08	B		15		Y	1	Dietrich,M	T	
8.868	820230	6.4	B	112		4			0.050	B		7	4.5	Y	1	Linder,J		
8.868	820231	6.8		112?	10				0.080	B		11	4.2C	Y	1	Marx,H	U	
8.868	820232	5.8	M	112		7	0.07	90	0.050	B		7	6.0	Y	1	Stott,D		
8.87	820233	4.8	S	DCS 13	15	5		105	0.050	B		10	5.5	Y	9	Comello,G	V	
8.872	820234	6.9	M	112	13	11			0.135	R	15	80	5.0	Y		Humenansky,J		
8.875	820235	6.8	B		9	1			0.050	B		10	5.0	Y	1	Linke,H		
8.875	820236	6.4	B	112	6	7			0.05	B		10	5.3C	Y	2	Franciosi,C	W	
8.879	820237	6.2	B		4.8	5			0.110	R	6.8	47	4.5	Y	1	Lipski,P		
8.885	820238	6.3	B	112	9	2			0.05	B		10	4.5	Y	1	Bottger,B		
8.885	820239	7.1	B	112	15	6			0.050	B		10	4.5C	N	2	Richert,M		
8.906	820240	5.3	S	112	16	4			0.05	B		10	4.0	Y	1	Hurst,G.M		
8.909	820241				14	5	0.4	118	0.08	B		15	4.0	Y	1	Hurst,G.M	X	
8.910	820242	6.3	S	112	2.3	8			0.076	R	12	37	4.1C	Y	1	Taylor,M.D	Y	
8.913	820243	6.4	S	112	6.8	4			0.070	B		16	4.1C	Y	1	Taylor,M.D	Z	
8.917	820244	6.2	S	112	12	3			0.08	B		11	4.1	Y	1	Gainsford,M.J		
8.92	820245	6.3	S	112					0.08	B		10	4.0			Shanklin,J.D		
8.92	820246	6.4	S	112					0.08	B		20	4.0		1	Shanklin,J.D	a	

NOTE A Faint coma.

NOTE B Haze. Nucleus fuzzy.

NOTE C Comet involved with stars.

NOTE D Exc. see.

NOTE E Tail greatest length at PA 104; tail north boundary 10.25 deg. at PA 98, south boundary 7.50 deg. at PA 111.

NOTE F Still vis. naked eye.

NOTE G Tail length approximate.

NOTE H Clear.

NOTE I Comet at limit and doubtful. Clear.

NOTE J Cloud.

NOTE K Tail photo'd. to 3.1 deg.

NOTE L Midpoints on tail: 3.8 deg. at PA 106; 7.9 deg. at PA 106. End point of tail: 13.9 deg. at PA 106.

NOTE M Tail measurement refers to dust tail only.

NOTE N Seeing good, transparency excellent.

NOTE O (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are SAO 156124, 156024.

NOTE P Foggy.

NOTE Q Starting point of tail length. (Translated by IHW staff. Ed.)

NOTE R Comparison stars SAO 156057, 156137. (Observer indicated "A" method [Argelander?]. Ed.)

NOTE S PA 95 to 109.

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

NOTE U Comparison stars SAO 156124, 156057. (Observer indicated "A" method [Argelander?]. Ed.)

NOTE V Coma diameter and tail length approximate.

NOTE W Nucleus. Coma diameter approximate.

NOTE X Broad tail.

NOTE Y Antoniadi II. Stellar central condensation or nearby star?

NOTE Z Stellar central condensation or nearby star? Antoniadi II, haze.

NOTE a Tail not certain.

DATE: 8 MAY 1986

DATE: 8 MAY 1986

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
8.137	831230	0.5	0.13	SC	10	32,120	15	6.5	1	Hays Jr,R.H	A
8.260	831231	3	0.050	B		7	10	6.4	3	Cook,A.J	
8.767	831232	4	0.08	B		11		6.1	1	Fleet,R.W	B
8.863	831233	0.15	0.298	N	5	40, 65,179	15	6.0	1	Stott,D	C

NOTE A Very dim spike or streamer at PA 120. 'Nucleus' not as prominent as on Apr. 26 and tail not so fan-shaped. Tiny condensation 1' across noted 'nucleus'.

NOTE B Tail end point at PA 107. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE C Tail seen as double, brightest at PA 90. The tail at PA 10 deg. is rather more elusive. Magnification of 269 also used.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
8.071	852070	0.225	1.7	0.140	9.1 x 6.1	5.00	Kodak 2415		Y	S	5/P	1	Dillsizian,R	
8.095	852071	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	278/P	1	Sabia,J.D	A
8.226	852072	0.050	2		39.6 x27.0	1.00	Ektachrome	400/	N	O	12/N	7	Edberg,S.J	
8.226	852073	0.500	3.6	0.140	4.1 x 2.7	1.00	Kodak Tri-X	400/	N	O	32/C	7	Edberg,S.J	
8.230	852074	0.050	2		39.6 x27.0	10.00	Ektachrome	400/	N	O	13/N	7	Edberg,S.J	
8.230	852075	0.500	3.6	0.140	4.1 x 2.7	10.00	Kodak Tri-X	400/	N	O	33/C	7	Edberg,S.J	
8.239	852076	0.200	4		10.3 x 6.9	5.00	3M 1000	1000/	N	O	1/N	7	Edberg,S.J	
8.239	852077	0.050	2		39.6 x27.0	5.00	Ektachrome	400/	N	O	14/N	7	Edberg,S.J	
8.239	852078	0.500	3.6	0.140	4.1 x 2.7	5.00	Kodak Tri-X	400/	N	O	34/C	7	Edberg,S.J	
8.244	852079	0.200	4		10.3 x 6.9	10.00	3M 1000	1000/	N	O	2/N	7	Edberg,S.J	
8.248	852080	0.200	4		10.3 x 6.9	1.00	3M 1000	1000/	N	O	3/N	7	Edberg,S.J	
8.456	852081	0.135	3.5		15.2 x10.2	14.50	Ektachr.400		N	X	38/S	1	Tregaskis,T.B	B
8.848	852082	0.135	3.2		15.2 x10.2	2.50	Agfa-Pan Pro	400/27	N	M	22/C	2	Trixler,F	C
8.856	852083	0.135	3.2		15.2 x10.2	5.00	Agfa-Pan Pro	400/27	N	M	24/C	2	Trixler,F	C
8.863	852084	0.135	3.2		15.2 x10.2	5.00	Agfa-Pan Pro	400/27	N	M	28/C	2	Trixler,F	C

NOTE A Anti-tail noted on negative, very short and spike-like. Not seen visually. Photograph made by J. Kamichitis and J.D. Sabia.

NOTE B Push processed to 800 ASA.

NOTE C City lights interfered with the observation.

DATE: 9 MAY 1986

DATE: 9 MAY 1986

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	
9.00	820247	6.0	B	AAVSO					0.04	B		7				Kiselev,N		
9.073	820248	5.5	S	112					0.035	B		7	4.8	Y	4	Hudak,D.M		
9.139	820249	6.5	B	112					0.080	B		20	4.5	Y		Smith,D		
9.17	820250	5.5	S	112	13	3			0.050	B		10	4.0C	Y	38	Morris,C.S		
9.17	820251	5.5	S	112					0.080	B		20	4.0C	Y	38	Morris,C.S		
9.30	820252	5.2	M	112			6	105	0.05	B		10	6	Y	19	Hale,A		
9.30	820253						4	105		EY		6		Y	11	Hale,A		
9.3611	820254	5.9	S	DCS	8	2			0.130	R	7.1	27	4.8		1	Machholz,D	A	
9.382	820255	5.8	B	112		3	4.0	110	0.050	B		7	5.9	Y	3	Krisciunas,K	B	
9.406	820256	5.9	S	112			11		0.05	B		7	6.0	Y	14	Garradd,G		
9.417	820257	5.9	S	112					0.025	B		3	6	Y	1	Seargent,D		
9.417	820258						2	105	0.08	B		15				Seargent,D		
9.417	820259	5.8:	B	3-39			3.5		0.03	B		8	6.3	Y	7	Thompson,G	C	
9.50	820260	5.6	M	AAVSO	12	4			0.065	R	8	16	4.0C	Y	10	Nakamura,A	D	
9.507	820261	6.1	B	112		5			0.05	B		7	3.5	Y	1	Hayashi,H	E	
9.679	820262	6.3	M	112		6			0.04	B		12	6.2	Y	4	Henshaw,C		
9.68	820263	6.6	B	M					0.05	B		7				Konstantinov,S		
9.70	820264	5.8	B	AAVSO					0.08	B						Churyumov,K		
9.724	820265	6.5	B	112	10	1	2.5	208	0.050	B		7	6.3	Y	1	McBain,J	F	
9.736	820266	5.8	S	112	9	5	2.50	106	0.13	R	4	21	5.5	Y	1	Campos,J		
9.74	820267	6.1	B	AAVSO					0.11	R						Churyumov,K		
9.750	820268	5.9	M	112	12	6	12.3	106	0.08	B		11	6.1	Y	1	Fleet,R.W	G	
9.764	820269	5.7	M	112			3.0	106		EY			6.1	Y	1	Fleet,R.W	H	
9.792	820270	5.9	M	112	12	4	0.4	100	0.089	R	5.5	18	5.5	N	1	Ventura,F		
9.806	820271	5.9	M	112	17	5			0.05	B		12	5.5	Y	1	Tanti,T	I	
9.81	820272	6.5	B	AAVSO					0.20	R						Churyumov,K		
9.823	820273	6.5	B	CZ	8	3			0.10	O		25	4.5C	Y	1	Micek,I		
9.833	820274	6.4	B	112	60	20	5		0.05	B		7	5.2	Y	4	Vincent,J	J	
9.834	820275	6.1	M	112					0.035	B		9	6.1	Y	1	Begbie,M.J.R		
9.847	820276	6.3	M	CZ	9	6			0.05	B		7	5.0		4	Pravec,P		
9.850	820277				7.5	6	4.0	110	0.30	N	8.5	102	6.1	Y	1	Begbie,M.J.R	K	
9.851	820278	6.4	M	CZ	15	4			0.055	R	6	12			1	Silhan,J	L	
9.852	820279	5.6	S	112	15	4			0.050	B		7	5.7	Y	1	Meozzi,D		
9.8541	820280	6.4	B	112	15	8			0.080	B		11	5	C	Y	1	Brogioloni,A	M
9.861	820281	6.5	B	112	9.5	2			0.08	B		20	4.8	Y	1	Gigli,P		
9.861	820282	6.9	M	112	13	11	6		0.135	R	15	80	5.1	Y	1	Humenansky,J		
9.868	820283	6.0	M	CZ	10	6			0.080	B		10	5.0	Y	1	Bilek,V		
9.875	820284	6.9	B		8	1			0.050	B		10	4.5	Y	1	Linke,H		
9.875	820285	6.3	B	112	5	7			0.05	B		10	4.0C	Y	2	Franciosi,C	N	
9.875	820286	6.3	S	112	5	5	0.2	98	0.050	B		10	5.5	Y	1	Vanin,G		
9.882	820287	6.1	S	112	8.0	7	1.0	98	0.050	B		10	5.5	Y	1	Rossi,L		
9.885	820288	6.6	S	112	7	3			0.05	B		10	5	C	Y	1	Menichetti,R	
9.887	820289	6.3	B		3.5	6			0.110	R	6.8	47	4.0	Y	1	Lipski,P		
9.896	820290	5.9	M	FF HYA	16	6	0.50	100	0.050	B		7		Y	1	Mikuz,H	O	
9.906	820291		S	112					0.06	R	11.7	28	5.5	Y	1	Rossi,L	P	
9.931	820292	5.9	M	112	16	6			0.030	B		8	5.0	Y	2	Villa,M		
9.938	820293	6.0	M	112		6			0.03	B		8	4.5	Y	2	Melandri,F	Q	
9.9395	820294	6.2	S	112		4			0.080	B		15	3.5C	N		Giuntoli,M		
9.941	820295	6.5	B	112	6				0.040	B		8	5.5	Y	1	Levai,R	R	

NOTE A Comet was 5 degrees high.

NOTE B Tail plotted on chart. Still visible naked eye.

NOTE C Tail quite visible in 20x80 binoculars. PA 88 91. [sic]

NOTE D Tail length = yes.

NOTE E Cloud.

NOTE F Visible with naked eye. (PA value appears incorrect. Ed.)

NOTE G Midpoints on tail: 5.3 deg. at PA 107; 8.5 deg. at PA 106. End point of tail: 12.3 deg. at PA 106.

NOTE H 5.7 mag. star interfering.

NOTE I Seeing good, transparency excellent.

NOTE J Coma elongated east and west.

NOTE K Antitail in PA 270. Tail measurement refers to dust tail only.

NOTE L Very clear sky.

NOTE M I perceive detail. (Roughly translated by IHW staff. Ed.)

NOTE N Nucleus. Coma diameter approximate. Fog.

NOTE O Excellent conditions.

NOTE P m2 = 7.2.

NOTE Q I haven't seen the tail with the binoculars.

NOTE R Magnitude estimate uncertainty +/-0.2 mag.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
9.057	831234	1	0.229	R	10	45	15	6.0	1	Nowak,G.T	A
9.095	831235	0.40	0.204	N	8	58,271	35	4.5	1	Robinson,P.C	B
9.144	831236	0.25	0.20	N	8	120	45	5	1	Vargas B.,A.G	C
9.750	831237	4	0.08	B		11		6.1	1	Fleet,R.W	D
9.851	831238	0.18	0.30	N	8.5	102	12	6.1	1	Begbie,M.J.R	E
9.875	831239		0.356	SC	11	200			1	Soc. Astro. de France	F

NOTE A Dust tail at PA 270.

NOTE B Gas tail at PA 110; main dust tail at PA 115 to 180 (2.0') to 130 (60.0'); dust tail at PAs 290 (6.4'), 250 (6.6'), 180 (17.6'), 150 (66.4'); dust tail at PAs 290 (11.4'), 210 (17.6'), 180 (42.8'), 165 (75.2'); tail at PA 0; forward tail at PA 290; tail at PA 210. Very slightly stellar condensation. Round coma. Dust tails wrap around coma to north side of gas tail. Tail at PA 210 is only one which goes to center. South inner side of forward tail is brightest - sharp S border. Tail at PA 0 has sharp west border, diffuse east border. Comet plotted on chart with pre-plotted stars. City lights interfered with the observation.

NOTE C Central tail at PA 100 approx. Tail arms at PA 50 and 120 approx. A central tail and two arms (diffuse arms) was observed. [sic] A remarkable tail is visible and two little tails appear at both sides of the coma. The tail length is almost 4 deg. observing by binoculars (7x50). DC 6 approx.; coma diameter 3' approx.

NOTE D Tail end point at PA 106. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE E Fan centred on PA 40. Vertex distance 3.8 arc min.; semi latus rectums P1 = 3.1 arc min., P2 = 2.9 arc min. Coma elongated, tail still narrow.

NOTE F Drawing made by M. Verdenet. (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
9.203	852085	2.306	5	0.45	0.9 x 0.6	25.00	Kodak Tri-X		N	M	28/P	1	Webb,R	A

DATE: 9 MAY 1986

DATE: 9 MAY 1986

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdag	Id/Typ	Site	Observer(s)	Notes
9.263	852086	0.300	1.5	0.200	6.9 x 4.6	8.00	Kodak 2415		Y	S	25/P	3	Yen,B	B
9.454	852087	0.200	3.5		10.3 x 6.9	14.00	Fujichrome	1600/	N	O	4/S	1	Haagh,N	
9.571	852088	0.180	2.8		11.4 x 7.6	16.50	Kodak 2415		Y	O	88/S	14	Garradd,G	C
9.847	852089	0.760	4	0.19	2.7 x 1.8	8.00	Kodak Tri-X	400/27	N	O	26/T	1	Mikuz,H	D
9.866	852090	0.760	4	0.19	2.7 x 1.8	13.00	Kodak Tri-X	400/27	N	O	27/T	1	Mikuz,H	D

NOTE A Film pushed to ASA 1000. Standard 3 min.-3 min. processing.

NOTE B (Observer's image identifier is 0. Ed.) Instrument is Schmidt camera.

NOTE C Film was affected by heat and humidity before development, causing additional fogging. Film was excessively hypered (65-70 deg. C), causing severe fogging.

NOTE D Weather conditions excellent. (Observer's image identifier is followed by suffix A. Ed.)

DATE: 10 MAY 1986

DATE: 10 MAY 1986

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	
10.066	820296	7.0	M	112	6.7	3	0.3	67	0.114	N	8	45	4.1	Y	1	Mac Kenzie, G	A	
10.07	820297	5.2	S	112	14	4	2.8	105	0.050	B		10	6.5	Y	1	Bortle, J.E		
10.07	820298				45					EY						Bortle, J.E	B	
10.073	820299	6.4	B	112						EY			6.9	Y	1	Knight, S		
10.076	820300	5.5	S	112	4.6	7			0.152	N	5.5	69	5.3	Y	1	Hudak, D.M		
10.08	820301	5.6	M	AA					0.035	B		7				Green, D.W.E		
10.08	820302	5.7	S	AA	20	5			0.035	B		7				Green, D.W.E	B	
10.09	820303	6.3	B	AA					0.080	B		20				Green, D.W.E		
10.09	820304	5.7	M	AA	14	4	2		0.080	B		20				Green, D.W.E	C	
10.096	820305	6.4	S	112	11	3			0.035	B		7	6	Y	3	Morrison, W	D	
10.097	820306	6.1	B	112	6.3	4			0.127	SC	10	50	4.4	N	1	Rousom, J	E	
10.100	820307	7.7	M	112	3.7	5			0.15	N	8	44	3.0C	Y	1	Allen, E		
10.110	820308	6.3	S	112	7	3			0.05	B		10	5.5C	Y	3	House, R.R		
10.115	820309	6.5	S	112	2.4	1			0.08	R	11	39	4.1C	N	1	Graves, D	F	
10.149	820310	7.0	B	112	4.5	1			0.05	B		7	4.1C	Y	1	Dodd, W.J	G	
10.174	820311	6.7	M	112	15.0	5			0.152	N	6	24	6.5	Y	1	Knight, S		
10.181	820312	6.4	M	112	12.0	6	5.1	106	0.05	B		12	6.5	Y	1	Knight, S		
10.20	820313	4.8	S	112		2		110		EY			6.0	Y	1	Keen, R	H	
10.20	820314					2		110	0.32	N	4	33	6.0	Y	1	Keen, R		
10.20	820315	5.6	M	112	13	5	8	105	0.050	B		10	6.0	Y	16	Morris, C.S	I	
10.21	820316					4	4	105		EY			6.0	Y	16	Morris, C.S		
10.22	820317	5.6	M	112	13	4			0.080	B		20	6.0	Y	16	Morris, C.S		
10.23	820318								0.256	N	4.5	222	6.0	Y	16	Morris, C.S	J	
10.23	820319	5.6	M	112					0.050	R		8	6.0	Y	16	Morris, C.S		
10.24	820320	5.5	M	112	18	4			0.015	B		6	6.0	Y	16	Morris, C.S		
10.2694	820321	6.1	S	DCS	8	3			0.080	B		20	4.5		3	Machholz, D		
10.365	820322	6.0	B	112	20	5			0.05	B				Y	1	Tregaskis, T.B	K	
10.381	820323			112	6		1	100	0.32	N	8	150		Y	1	Tregaskis, T.B	L	
10.381	820324			112					0.15	N	8	64		Y	1	Tregaskis, T.B	M	
10.381	820325			112		5			0.10	N	6	24			1	Tregaskis, T.B	N	
10.417	820326	6.0	S	112					0.025	B		3				Seargent, D		
10.417	820327				11		1.2	100	0.08	B		15	6	Y	1	Seargent, D		
10.441	820328	5.1	B	112		3	4.0	105	0.08	B		11	5.6	Y	5	Bembrick, C		
10.485	820329	6.5	M	112	6	4			0.10	N	10	55	4.0C	Y	1	Kato, T		
10.488	820330	6.0	M	112	8	4			0.030	B		8	4.0C	Y	1	Kato, T		
10.493	820331	6.5	B	112					0.035	B		7		Y	1	Okada, M		
10.50	820332	7.8	B	112	6	4			0.080	B		11		C	3	Okada, M		
10.50	820333	5.8	M						0.05	B		7	4.5	Y	2	Suzuki, K		
10.50	820334	6.5	M			4	0.6		0.31	N		55	4.5	Y	2	Suzuki, K		
10.543	820335	6.1	S	112	10	4	1	90	0.07	B		10	6	Y	1	Kobayashi, J		
10.55	820336	6.4	M	112	14	3			0.080	B		11	3	Y	2	Watanabe, N		
10.576	820337	6.2	S	112	10				0.05	B		7	4.9	Y	1	Bryant, K	O	
10.625	820338	6.7	S	112		6			0.05	B		10	5.0	Y	1	Williams, P.F		
10.66	820339	7.1	B	M	7				0.05	B		7				Konstantinov, S		
10.68	820340	6.7	B	M	20	5			0.05	B		7				Konstantinov, S		
10.71	820341	6.2	B	AAVSO					0.08	B						Churyumov, K		
10.77	820342	6.3	B	AAVSO					0.11	R						Churyumov, K		
10.771	820343	6.4	M	112	10	6	9.6	107	0.08	B		11	6.1	Y	1	Fleet, R.W	P	
10.778	820344	5.5	M	112						EY			6.1	Y	1	Fleet, R.W	Q	
10.792	820345	6.1	M	112	9	4			0.089	R	5.5	18	5.0	N	1	Ventura, F	R	
10.792	820346	6.2	B	112	60	20	5		0.05	B		7	5.0	Y	4	Vincent, J	S	
10.816	820347	5.9	S	112	10	2			0.05	B		12	5	Y	1	Tanti, T	T	
10.819	820348	6.7	B	112	9.5	3			0.08	B		20	4.8	Y	1	Gigli, P		
10.836	820349	5.8	S	112	11	3			0.050	B		7	5.6	Y	1	Meozzi, D		
10.847	820350	6.2	B	112	15	14			0.090	N	7	40	4.0	Y	1	Kopplin, J		
10.8472	820351	6.4	S	112	10	8			0.080	B		11	5	C	Y	2	Broglioni, A	U
10.85	820352	5.9	B	112	10	3			0.050	B		7	5.0	Y	2	Merlin, J.-C		
10.854	820353	5.7	S	112		4	0.50		0.05	B		7		Y	1	Dziura, W		
10.854	820354	5.8	B	112		4			0.05	B		7	4	Y	2	Paradowski, M		
10.858	820355	5.6	B	112					0.030	B		8	3.0	Y	2	Kieltyka, G	V	
10.861	820356	6.9	B	CZ	8	3			0.10	O		25	4.5C	Y	1	Micek, I		
10.865	820357	6.8	S	112, 132	7	3			0.114	N	7.9	50	4.5C	Y	1	Di Meglio, F		
10.865	820358	6.7	S	112	17	3			0.06	B		12	4.0	Y	1	Znasik, M	W	
10.875	820359	6.6	S	112	6	3			0.13	N	5.5	36	5	C	Y	1	Menichetti, R	
10.875	820360	6.7	M	CZ	20	3			0.10	B		25	5.2			Hajek, P		
10.875	820361	6.3	S	112	6.9	3			0.10	B		14	5.0	Y	1	Hasubick, W		
10.875	820362	6.3	B	112	6	7			0.05	B		10	4.0C	Y	2	Franciosi, C	X	
10.875	820363	6.2	M	112	12	6			0.030	B		8	6.0	Y	2	Villa, M		
10.88	820364	5.1	S	DCS 13	10	4	2	105	0.050	B		10	5	Y	9	Comello, G	B	
10.882	820365	6.5	S	112	14	4			0.11	R	11	36	4.0	Y	1	Znasik, M	W	
10.889	820366	6.3	S	112	7.0		1.3	110	0.050	B		7	6.0	Y	2	Rossi, L	Y	
10.8958	820367	6.4	B	112	6.0	7			0.12	R	15	53	4.0C	Y	2	Franciosi, C		
10.903	820368	6.5	M	112					0.035	B		9	6.2	Y	1	Begbie, M.J.R		
10.917	820369	6.3	M	112	9	5			0.03	B		8	6.0	Y	2	Melandri, F	Z	
10.92	820370	6.4	S	112					0.08	B		10	4.5		1	Shanklin, J.D	a	
10.927	820371				7.8	5	5.2	112	0.30	N	8.5	102	6.2	Y	1	Begbie, M.J.R	b	
10.93	820372	6.5	S	DCS 13		3			0.080	B		15	4.5C	Y	1	Scholten, A		
10.94	820373	5.3	S	112	12				0.080	B		20	4.5	Y	10	Bouma, R.J		

NOTE A Tail was very faint and the exact length is uncertain, as is the PA.

NOTE B Coma diameter approximate.

NOTE C Coma diameter and tail length approximate.

NOTE D 0.15 f/5 refr. 31x tail 0.47 deg. long. PA = 115.

NOTE E Haze. Nucleus stellar.

NOTE F Visible with averted vision only. Data may be questionable.

NOTE G No tail seen.

NOTE H Observation from Colorado.

NOTE I Tail may have been as long as 10 degrees. Width of tail was 30' at 4.5 degrees from head. Northern side of tail was brighter than southern.

NOTE J There was a bright sector coming from the non-stellar condensation which subtended PAs 320 to 10. A distinct jet was visible in PA 320. Extent of sector not more than a few seconds of arc.

NOTE K Coma diameter approximate. Clear. (Observer gave limit as approximately 10. Ed.)

NOTE L Almost stellar-like nucleus. Round head. Tail faint and narrow. Length and PA approximate.

NOTE M Almost stellar-like nucleus. Round head. Doubtful tail.

NOTE N Head not seen stellar-like.

NOTE O DC = moderate.

NOTE P Midpoint on tail: 3.3 deg. at PA 107; end point of tail: 9.6 deg. at PA 107.

NOTE Q 5.7 mag. star subtracted.

NOTE R Coma elongated.

NOTE S Comet partially superimposed on star.

NOTE T Seeing good, transparency good. Bright star near comet.

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NOTE U I perceive detail. (Translated by IHW staff. Ed.)  
 NOTE V Foggy.  
 NOTE W Cirrus.  
 NOTE X Nucleus.  
 NOTE Y A 5.7 magnitude star involved with the coma's edge.  
 NOTE Z The data can be influenced by a bright star near the comet.  
 NOTE a Cloud. Close to 5.7 star.  
 NOTE b Tail measurement refers to dust tail only.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
10.061	831240	0.82	0.114	N	8	45, 90	55	4.1	1	Mac Kenzie,G	
10.771	831241	4	0.08	B		11		6.1	1	Fleet,R.W	A
10.833	831242	0.25	0.30	N	8.5	102,212	18	6.2	1	Begbie,M.J.R	B
10.865	831243	0.49	0.114	N	7.9	50	30	4.5	1	Di Meglio,F	
10.880	831244	0.6	0.13	N	5.5	36,144	26	4.5	1	Menichetti,R	

NOTE A Tail end point at PA 107. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Jets at PA 260 and PA 220. Extension to coma centred on PA 170. Vertex distance 3.9 arc min.; semi latus rectums P1 = 3.9 arc min., P2 = 7.0 arc min. The inner coma is composed of two brighter regions to the north and south. The tail is increased in width, and near nuclear activity is enhanced.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
10.075	852091	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	281/P	1	Sabia,J.D	A
10.092	852092	0.135	2.8		15.2 x10.2	9.50	Kodak Tri-X	400/	N	O	2/P	1	Valeriani,G	B
10.094	852093	0.200	4		10.3 x 6.9	10.00	Kodak 2415		Y	M	4/P	1	Larocche,Y	
10.098	852094	0.135	2.8		15.2 x10.2	3.00	Kodak Tri-X	400/	N	O	3/P	1	Valeriani,G	B
10.106	852095	0.135	2.8		15.2 x10.2	5.00	Kodak Tri-X	400/	N	O	4/P	1	Valeriani,G	B
10.110	852096	0.135	2.8		15.2 x10.2	2.00	Kodak Tri-X	400/	N	O	5/P	1	Valeriani,G	B
10.142	852097	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	282/P	1	Sabia,J.D	A
10.215	852098	0.550	5.5	0.102	3.7 x 2.5	20.00	Konica 1600	1600/	Y	O	000/P	1	Bigbie,B	C
10.225	852099	0.260	5.2	0.050	7.9 x 5.3	5.00	3M 1000	1000/	N	O	4/N	7	Edberg,S.J	
10.225	852100	0.500	3.6	0.140	4.1 x 2.7	5.00	Ektachrome	400/	N	O	15/N	2	Edberg,S.J	
10.225	852101	0.050	2		39.6 x27.0	5.00	Kodak Tri-X	400/	N	O	35/C	2	Edberg,S.J	
10.230	852102	0.260	5.2	0.050	7.9 x 5.3	10.00	3M 1000	1000/	N	O	5/N	7	Edberg,S.J	
10.230	852103	0.500	3.6	0.140	4.1 x 2.7	10.00	Ektachrome	400/	N	O	16/N	2	Edberg,S.J	
10.230	852104	0.050	2		39.6 x27.0	10.00	Kodak Tri-X	400/	N	O	36/C	2	Edberg,S.J	
10.234	852105	0.260	5.2	0.050	7.9 x 5.3	1.00	3M 1000	1000/	N	O	6/N	7	Edberg,S.J	
10.234	852106	0.050	2		39.6 x27.0	1.00	Kodak Tri-X	400/	N	O	37/C	2	Edberg,S.J	
10.251	852107	0.300	1.5	0.200	6.9 x 4.6	8.00	Kodak 2415		Y	S	26/P	3	Yen,B	D
10.259	852108	0.200	4		10.3 x 6.9	5.00	3M 1000	1000/	N	O	8/N	7	Edberg,S.J	
10.259	852109	0.050	2		39.6 x27.0	5.00	Ektachrome	400/	N	O	17/N	2	Edberg,S.J	
10.264	852110	0.200	4		10.3 x 6.9	10.00	3M 1000	1000/	N	O	9/N	7	Edberg,S.J	
10.264	852111	0.050	2		39.6 x27.0	10.00	Ektachrome	400/	N	O	18/N	2	Edberg,S.J	
10.273	852112	0.500	3.6	0.140	4.1 x 2.7	5.00	3M 1000	1000/	N	O	10/N	7	Edberg,S.J	
10.291	852113	0.500	3.6	0.140	4.1 x 2.7	1.00	3M 1000	1000/	N	O	12/N	2	Edberg,S.J	
10.296	852114	0.500	3.6	0.140	4.1 x 2.7	10.00	3M 1000	1000/	N	O	13/N	2	Edberg,S.J	
10.303	852115	0.050	2		39.6 x27.0	1.00	3M 1000	1000/	N	O	14/N	2	Edberg,S.J	
10.307	852116	0.050	2		39.6 x27.0	5.00	3M 1000	1000/	N	O	15/N	2	Edberg,S.J	
10.865	852117	0.950	4.7	0.20	2.2 x 1.4	2.00	Kodak 2415		Y	S	27/P	1	Conrad,R	E
10.877	852118	0.420	1.7	0.250	4.9 x 3.3	25.00	Kodak 2415		Y	S	4/P	1	Bruhja,W	F

NOTE A Anti-tail noted on negative, very short and spike-like. Not seen visually. Photograph made by J. Kamichitis and J.D. Sabia.

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

NOTE C Start time approximate.

NOTE D (Observer's image identifier is 2. Ed.) Instrument is Schmidt camera.

NOTE E City lights interfered with the observation; Vienna, from room.

NOTE F Net exposure duration 15 minutes because of interruption due to airplanes. (Observer's image identifier is IV. Ed.)

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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
11.05	820374	5.9	S	AA	6	2			0.050	B		7				Green,D.W.E	A
11.06	820375	6.1	S	AA	8	4			0.080	B		20				Green,D.W.E	A
11.063	820376	7.1	M	112	5.9	2	0.1	114	0.114	N	8	45	3.8	Y	1	Mac Kenzie,G	B
11.076	820377	5.6	S	112	5.1	6			0.203	N	6	101	5.4	Y	1	Budak,D.M	
11.08	820378	5.4	S	112	14	4	2.7	112	0.050	B		10	6	Y	1	Bortle,J.E	
11.08	820379				6	2			0.317	N	6	55				Bortle,J.E	C
11.092	820380	7.3	M	112	3.7	5			0.15	N	8	44	3.5C	Y	1	Allen,E	D
11.10	820381	6.7	S	112	40	6			0.05	B		7	6.0	Y	1	Harrington,P	
11.160	820382	6.5	S	112	5	2			0.05	B		10	5 C	N	3	Bouse,R.R	
11.17	820383	5.7	M	112	13	3			0.050	B		10	4.0C	Y	9	Morris,C.S	
11.17	820384	5.7	S	112					0.050	B		10	4.0C	Y	9	Morris,C.S	
11.17	820385	5.7	S	112					0.080	B		20	4.0C	Y	9	Morris,C.S	
11.187	820386	6.5	B	112		5			0.05	B		20	5.5	Y	4	da Silva,L.A.L	
11.190	820387	6.5	B	112		1			0.05	B		20	5.5	Y	2	Onofre D.,D	
11.219	820388	6.3	S	112	34	2			0.05	B		10	4 C	Y	1	Gronck,J.D	E
11.22	820389	4.9	B	112					0.05	BY		6.5	Y	1		Keen,R	
11.2292	820390	6.0	M	112	12	6			0.05	B		7	6.4	Y	3	Cook,A.J	F
11.24	820391	5.5	S	113	5.0	3			0.080	R	3.7	19	5.0	Y	2	Spratt,C.E	
11.25	820392	5.5	S	113	5.0	2			0.080	B		11	5.6	Y	2	Spratt,C.E	G
11.2597	820393	6.3	S	DCS	8	2			0.080	B		20	4.4	Y	3	Machholz,D	
11.26	820394	5.4	S	113	5.5	3			0.080	B		11	5.5	Y	2	Spratt,C.E	
11.31	820395	5.5	M	112			5	105	0.05	B		10	6	Y	11	Hale,A	H
11.458	820396	5.9	S	112					0.025	B		3				Seargent,D	
11.458	820397				9	4	1	110	0.08	B		15	6.1	Y	1	Seargent,D	I
11.484	820398	6.0	S	112			5.5		0.05	B		7	6.5	Y	2	Garradd,G	
11.500	820399	6.5	S	112	8	4			0.07	B		10	2.0	Y	1	Kobayashi,J	J
11.520	820400	6.4	S	112		6			0.05	B		10	6.0	Y	1	Williams,P.F	
11.542	820401	5.4	B	112		5	3.0	110	0.08	B		11	5.6	Y	5	Bembrick,C	
11.70	820402	6.1	B	AAVSO					0.08	B						Churyumov,K	
11.72	820403	6.1	B	AAVSO					0.11	R						Churyumov,K	
11.739	820404	6.4	M	112					0.035	B		9	6.1	Y	1	Begbie,M.J.R	
11.753	820405	6.0	M	112	11	6	10.7	108	0.08	B		11	6.2	Y	1	Fleet,R.W	K
11.757	820406				8.0	6	4.6	115	0.30	N	8.5	102	6.1	Y	1	Begbie,M.J.R	L
11.76	820407	5.6	B	E	10	5			0.05	B		7				Mormil,V	
11.778	820408	5.6	M	112					0.05	BY		6.2	Y	1		Fleet,R.W	M
11.778	820409	6.8	M	112	7.5	4	3.3	120	0.04	B		12	6.2	Y	1	Henshaw,C	
11.806	820410	6.2	M	112	9	6	4	100	0.089	R	5.5	18	5.0	N	1	Ventura,F	N
11.81	820411	5.5	B	E	15	5	1	112	0.05	B		7				Mormil,V	
11.813	820412	6.0	M	112	10	5			0.05	B		12	5	Y	1	Tanti,T	O
11.8298	820413	6.6	B	112	10	8			0.080	B		11	4.5C	Y		Broglioni,A	P
11.8298	820414	6.5	S	112		6			0.080	B		15	3.5C	Y		Giuntoli,M	
11.830	820415	6.2	S	112	11.0	4	1.73	105	0.08	B		15	6.4	Y	4	Haver,R	
11.833	820416	6.0	B	112		4			0.05	B		7	3.5	Y	2	Paradowski,M	
11.833	820417	6.3	M	112	11 10	5			0.07	B		20	5	Y	1	Tanti,T	O
11.840	820418	5.9	S	112	11.0	3	2.60	105	0.05	B		7	6.4	Y	4	Haver,R	
11.840	820419	5.8	S	112	12	3			0.050	B		7	5.3M	Y	1	Meozzi,D	
11.845	820420	5.7	S	112					0.05	BY		6.4	Y	4		Haver,R	
11.85	820421	5.7	B	E	8	5			0.05	B		7				Mormil,V	
11.866	820422				20	3			0.050	B		10	2.5CT	N	2	Richert,M	
11.872	820423	6.3	M	112	14	5			0.030	B		8	4.5	Y	1	Villa,M	
11.875	820424	6.8	S	112,132	8	6			0.114	M	7.9	50	5.0C	Y	1	Di Meglio,F	
11.875	820425	6.3	M	112	12	5			0.03	B		8	4.5	Y	1	Melandri,F	
11.882	820426	6.6	S	112	7	3			0.05	B		10	4.5C	Y	1	Menichetti,R	
11.885	820427	7.1	B		5	1			0.050	B		10	4.5	Y	1	Linke,H	
11.890	820428	5.8	S	112		4			0.05	B		7		Y	1	Dziura,W	Q

NOTE A Coma diameter approximate.

NOTE B Temp.: 2 deg. C. Tail was difficult to observe and length (as well as the PA) could be considered spurious.

NOTE C Using 68x and 170x: there are suggestions of very long, narrow, vague rays aligned north-south from the tiny central condensation within the coma. At 170x a stellar nucleus is glimpsed within it.

NOTE D Clouds.

NOTE E Exc. see.

NOTE F Tail north boundary 11.85 deg. at PA 101, south boundary 2.50 deg. at PA 114.

NOTE G DC approximate.

NOTE H Last naked-eye sighting was on this night.

NOTE I Tail length is lower limit.

NOTE J Haze.

NOTE K Midpoint on tail: 4.8 deg. at PA 106. End point of tail: 10.7 deg. at PA 108.

NOTE L Tail measurement refers to dust tail only.

NOTE M 5.7 mag. star subtracted.

NOTE N Coma elongated.

NOTE O Seeing good, transparency good.

NOTE P I perceive detail. (Roughly translated by INW staff. Ed.)

NOTE Q Foggy.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
11.051	831245	0.89	0.114	N	8	45, 90	85	3.8	1	Mac Kenzie,G	
11.104	831246	0.40	0.204	N	8	58,271	60	4.5	1	Robinson,P.C	A
11.170	831247		0.203	N	6	38	12	4.5	8	Troiani,D.M	B
11.233	831248	3	0.050	B		7	10	6.4	3	Cook,A.J	
11.753	831249	4	0.08	B		11		6.2	1	Fleet,R.W	C
11.772	831250	0.19	0.30	N	8.5	102,212	16	6.1	1	Begbie,M.J.R	D
11.875	831251	0.65	0.114	N		50	30	5.0	1	Di Meglio,F	

NOTE A Gas tail at PA 110, very long, main dust tail at PA 120 to 180 (5.5') to 135 (60.0'), also very long; tail at PA 180; tail at PA 240; tail at PA 260; forward tail at PA 315, SW side of tail is sharper, brighter than other side, NE side is extended SE past coma to gas tail at PA 110; tail at PA 340. Tail at PA 270 (1.4') to 0 (6.0') to 25 (22.0') to 40 (50.0'); tail is curved, especially near coma. Hood at PA 200 (39.1') to 250 (32.4') to 290 (37.0') to 330 (52.4'); hood continued in both directions a long way. Slight stellar condensation. City lights interfered with the observation.

NOTE B Transparency (1-5): 2.5. Seeing (1-3): 3. Sky darkness (1-5): 2.0. DC = 6.

NOTE C Tail end point at PA 108. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE D Vertex distance 5.3 arc min., semi latus rectums P1 = 4.1 arc min., P2 = 3.6 arc min. The inner coma consists of a bright, roughly oval cloud of material about 2 arc min. wide. The outer coma is fainter and is irregular at its limits. The tail is still broad.



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DATE: 11 MAY 1986

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
11.067	852119	0.225	1.7	0.140	9.1 x 6.1	4.00	Kodak 2415		Y	S	1/P	1	Dilsizian,R	
11.089	852120	0.500	3.6	0.140	4.1 x 2.7	25.00	Kodak 2415		Y	S	002/C	1	Chester,G.R	A
11.113	852121	0.500	3.6	0.140	4.1 x 2.7	25.00	Kodak 2415		Y	S	003/C	1	Chester,G.R	B
11.122	852122	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	284/P	1	Sabia,J.D	C
11.259	852123	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	27/P	3	Yen,B	D
11.514	852124	0.180	2.8		11.4 x 7.6	8.00	Kodak 2415		Y	O	89/S	2	Garradd,G	E
11.559	852125	0.180	2.8		11.4 x 7.6	22.00	Kodak 2415		Y	O	90/S	2	Garradd,G	E

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

NOTE B (Observer's image identifier is 3. Ed.)

NOTE C Anti-tail noted on negative, very short and spike-like. Not seen visually. Photograph made by J. Kamichitis and J.D. Sabia.

NOTE D (Observer's image identifier is 9. Ed.) Instrument is Schmidt camera.

NOTE E Film was affected by heat and humidity before development, causing additional fogging. Film was excessively hypered (65-70 deg. C), causing severe fogging.

DATE: 12 MAY 1986

DATE: 12 MAY 1986

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	
12.007	820429	6.5	B	112					0.05	B		20	5.0	Y	1	da Silva, L.A.L		
12.069	820430	5.7	S	112	3.6	6			0.203	N	6	101	4.8	Y	1	Rudak, D.M		
12.07	820431	6.8	S	112	30	5			0.05	B		7	4.5	Y	1	Harrington, P		
12.09	820432	4.9	S	AA	18	4			0.080	B		20				Green, D.W.E	A	
12.090	820433	6.3	M	112	25.0	6	5.5	109	0.05	B		12	6.9	Y	1	Knight, S		
12.090	820434	6.3	B	112						EY			6.9	Y	1	Knight, S		
12.093	820435	7.7	M	112	2.3	7			0.15	N	8	44	3.5C	Y	1	Allen, E	B	
12.10	820436	4.7	S	AA	18	5			0.050	B		7				Green, D.W.E	A	
12.10	820437	4.9	S	AA	16	3			0.035	B		7				Green, D.W.E	A	
12.117	820438	6.1	S	112	10	3			0.035	B		7	6.1	Y	3	Morrison, W	C	
12.120	820439	6.4	S	112	14	3			0.05	B		10	5.5C	Y	3	Hause, R.R		
12.135	820440	6.5							0.050	B		10	6	Y	1	Minton, R.B	D	
12.17	820441	5.7	M	112	16	4	5	113	0.050	B		10	6.0	Y	7	Morris, C.S	E	
12.19	820442	5.5		112						EY			6.0	Y	7	Morris, C.S		
12.22	820443	5.0	S	112						EY			6.5	Y	1	Keen, R		
12.229	820444	6.7	M	112					0.279	SC	10	167	4.5	Y	1	Kemble, L.J	F	
12.23	820445	5.6		112	13	5	1.5	110	0.040	B		8	6.5	Y	1	Keen, R	G	
12.26	820446	5.1	B	112	5	0			0.035	B		7	4.0	Y	1	Jacobson, E	H	
12.26	820447		B		24					EY			4.0	Y	1	Jacobson, E	A	
12.36	820448	5.9	S	112	13	3			0.049	B		3	5.9			Jones, A	I	
12.365	820450	6.0	S	112		6			0.078	R	7.5	30				Jones, A	J	
12.365	820451								0.025	B		3	6.2	Y	1	Seargent, D		
12.38	820452						1.5	100	0.08	B		15				Seargent, D		
12.38	820453					7			0.317	N	5	58				Jones, A	K	
12.434	820454	5.9	S	112			5.0		0.05	B		7	6.3		1	Lovejoy, T	L	
12.438	820455	6.0	B	112			4		0.05	B		7	6.0	Y	6	Garradd, G		
12.508	820456	5.9	S	112	20	4	1.5	90	0.05	B		10		Y	1	Tregaskis, T.B	M	
12.52	820457	6.1	M	112	8	6			0.07	B		10	5.5	Y	1	Kobayashi, J		
12.52	820458	6.4	M	112	10.5	5	0	100	0.15	N	5.3	32	5.0CM	Y	1	Oka, A		
12.705	820459	8.2	B	112	10	1	2	95	0.080	B		11	5	Y	2	Watanabe, N		
12.758	820460	6.7	M	112					0.065	B		20	6.5	Y		McBain, J	N	
12.78	820461	5.9	B	E	10	5			0.035	B		9	6.1	Y	1	Begbie, M.J.R		
12.781	820462				7.3	6	4.5	120	0.30	N	8.5	102	6.1	Y	1	Mormil, V		
12.793	820463	6.6	M	112	7.5	6	4.25	120	0.04	B		12	6.2	Y	1	Begbie, M.J.R	O	
12.799	820464	6.1	M	112	11		10.6	107	0.08	B		11	6.1	Y	1	Henshaw, C		
12.80	820465	5.5	B	E	20	5	1	112	0.05	B		7				Fleet, R.W	P	
12.80	820466	6.1	B	M	3	3			0.07	N	8	33				Mormil, V	Q	
12.802	820467	5.8		112						EY			6.1	Y	1	Yurchenko, Yu		
12.826	820468	7.5	S	112	2	3			0.25	N	6	40	3.5CTM	N	2	Fleet, R.W		
12.826	820469	6.5	S	112	14	5			0.11	R	11	36	4.4M	Y	1	Adamoli, G		
12.830	820470	6.7	S	112	18	4			0.06	B		12	4.4M	Y	1	Znasik, M	R	
12.83	820471	5.8	B	E	10	5			0.05	B		7				Znasik, M	R	
12.837	820472	5.8	S	112			0.50		0.05	B		7		Y	1	Mormil, V		
12.840	820473	6.8	S	112	20	4			0.08	B		10	4.4M	Y	1	Dziura, W		
12.840	820474	6.9	M	CZ	10	3			0.10	B		25			2	Znasik, M	R	
12.847	820475	7.1	M	CZ	10	1			0.045	R		8			2	Kucera, P		
12.847	820476	6.6	M	CZ	10	2			0.055	R	6	12			1	Kucera, P		
12.850	820477	6.7	B	112	8	6			0.050	B		12	3.0	Y	1	Silhan, J	S	
12.854	820478	7.0	M	112					0.100	B		25	5.0	N	1	Silhan, J		
12.854	820479	6.9	M	CZ	8	2			0.10	B		25			2	Mosch, J		
12.854	820480	7	B	112	2	2			0.050	B		10	4.9C	Y	1	Fabricius, J		
12.854	820481	6.9	B	CZ	7	3			0.10	O		25	3.5C	Y	1	Kucera, P		
12.854	820482	6.4	B	CZ	11.5	3			0.10	B		25	5.5	Y	1	Laszlo, A	A	
12.854	820483	6.8	M	CZ	8	3			0.16	R	15	50			1	Micek, I		
12.854	820484	6.2	M	112	9	4	0.5		0.089	R	5.5	18	5.0	N	1	Polak, J	T	
12.861	820485	6.4	B	112	8.6	4			0.10	B		14	4.5	Y	1	Silhan, J	U	
12.865	820486	6.3	B	112	6	4			0.090	N	7	26	5.0	Y	1	Ventura, F	V	
12.87	820487	6.3	S	112	6	5			0.08	B		15	4.5M	Y	1	Hasubick, W		
12.87	820488					6	0.1	100	0.203	N	6	38	4.5M	Y	1	Vohla, F		
12.872	820489	6.9	S	112, 132	7	3			0.114	N	7.9	50	5.0C	Y	1	Glowinski, C		
12.872	820490	6.8	B	112					0.06	R	8	15	5.0M	N	1	Glowinski, C	W	
12.872	820491	6.3	M	112					0.07	B		20	5	Y	1	Di Meglio, F		
12.875	820492	6.9	B	112					0.07	B		10	4.0	N	1	Schambeck, C.M		
12.8750	820493	6.6	S	112			0.75	90	0.080	B		15	5.0	Y	1	Tanti, T	X	
12.875	820494	7.0		112?	8	4			0.100	N	9	45	4.5C	Y	2	Deconinck, M	Y	
12.878	820495	6.6	B	112	7	3			0.080	R	6.2	50	6.0	Y	1	Korth, S	Z	
12.879	820496	6.4	B	112	11	3			0.090	N	7	40	4.0	Y	1	Marx, H	a	
12.88	820497	6.8	S	112					0.08	B		20	4.0		1	Pfitzer, E	b	
12.882	820498	6.7	B			3			0.080	R	6.2	12	5.0	Y	1	Kopplin, J		
12.885	820499	6.7	S	112	7	3			0.05	B		10	4.5C	Y	1	Shanklin, J.D	c	
12.885	820500	7.1	B		5	0			0.050	B		10	5.0	Y	1	Lieder, F		
12.885	820501	4.5	B		7	4			0.030	B		8	6.0	Y	1	Menichetti, R		
12.889	820502	6.5	S	112	8.2	5			0.050	B		10	3.5	Y	1	Linke, H		
12.890	820503				4.5	3			0.130	N	8	40	5.0	Y	1	Winkler, R	d	
12.892	820504	6.7	S	112	6	4			0.25	N	6	60	4	Y	1	Rossi, L	e	
12.896	820505	6.2	M	122	20	5			0.03	B		8	4.5	Y	1	Lieder, F		
12.896	820506	7.2							0.080	B		15	3	Y	1	Gainsford, M.J		
12.896	820507	6.6	B	SAO	6.3	4	1.0		0.125	R	6	35	4.0	Y	1	Melandri, F		
12.90	820508	6.6	S	DCS 13	10	4			0.080	B		15	4.5MTC	Y	1	Nagele, A	f	
12.90	820509	5.8	S	DCS 13	11	4			0.060	B		12	6	MT	Y	1	Guthier, O	g
12.90	820510	6.3	B	DCS 13	11	4	0.5	105	0.060	B		12	6	MT	Y	3	Scholten, A	A
12.903	820511	6.4	S	112					0.08	B		11	4	Y	1	van de Weg, R.L.W	h	
12.906	820512	6.5	B	CZ		3			0.03	B		6	4.5		1	van de Weg, R.L.W	h	
12.91	820513	6.4	S	112					0.05	B		7	4.0		1	Gainsford, M.J		
12.91	820514	4.9	S	DCS 13	13	4	4.5	105	0.050	B		10	6	Y	9	Vaclik, F		
12.910	820515	6.2	M	112	19	5			0.030	B		8	4.5	Y	1	Shanklin, J.D		
12.927	820516	6.7	B	112					0.05	B		7	5.5C	Y	2	Comello, G	A	
																Villa, M		
																Martinez, C		

NOTE A Coma diameter approximate.

NOTE B Turbulence.

NOTE C 0.15 f/5 refr. 31x tail 0.47 deg. long. PA = 110.

NOTE D I used my 10x50 binoculars out of focus. It was the same magnitude as SAO 156105. SAO 156105 = Mv 6.5 and spectrum = F0.

NOTE E Width of tail at 5 degrees was 20'.

NOTE F Comet seen at 0427 UT in twilight, then observations made in dark sky. Easily seen in binocs. Comet large and bright; two tails: one broad, relatively bright, about 1.5 deg. long at PA 103 deg., a fainter, narrower one about 0.5 deg. long at PA 8 deg. Coma diameter 7-8 arc min.

NOTE G Modified Sidgwick method used.

NOTE H Cirrus clouds. Coma diameter approximate.

NOTE I DC 5 (0.050 B, 7x).

NOTE J Tail suspected.

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NOTE K Diffuse coma, small condensation around small nucleus.  
 NOTE L Arrow shaped coma. Tail length is lower limit.  
 NOTE M Broken cloud. (Observer gave limit as approximately 10 mag. Ed.)  
 NOTE N Moonlight.  
 NOTE O Tail measurement refers to dust tail only.  
 NOTE P Midpoint on tail: 5.6 deg. at PA 108. End point of tail: 10.6 deg. at PA 107.  
 NOTE Q Parabolic head (May 12.81).  
 NOTE R Moon.  
 NOTE S Very clear sky.  
 NOTE T Magnitude estimate uncertainty +/-0.5 mag.  
 NOTE U (Invisible in 7x50 binoculars.)  
 NOTE V The tail appeared to have a kink close to the coma. It certainly was not straight; the discontinuity could have been a disconnection event. Tail length is lower limit.  
 NOTE W Tail length and PA approximate.  
 NOTE X Seeing good, transparency good/fair.  
 NOTE Y Moon, cloudy.  
 NOTE Z Coma diameter to 10-15 arc min. Tail length approximate.  
 NOTE a Comparison stars SAO 156105, 156040. (Observer indicated "A" method [Argelander?]. Ed.)  
 NOTE b Tail length = y.  
 NOTE c Tail not certain.  
 NOTE d (PA value may have been incorrectly determined. Ed.)  
 NOTE e Haze.  
 NOTE f (Observer indicated "A" method [Argelander?]. Ed.) Comparison stars are SAO 156105, 156040.  
 NOTE g Central condensation. Tail PA 113 133.  
 NOTE h Tail length is lower limit.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
12.101	831252	0.25	0.20	N	8	120	20	5	1	Vargas B.,A.G	A
12.799	831253	4	0.08	B		11		6.1	1	Fleet,R.W	B
12.869	831254	0.63	0.200	SC	10	50	22	3	1	Schumacher,K	C
12.870	831255	0.75	0.114	N	7.9	50	15	5.0	1	Di Meglio,F	
12.883	831256	0.08	0.36	SC	11	325	7	5.0	1	Korth,S	D

NOTE A Two diffuse tails were observed at PA 110 approx. and at 120 approx. DC 5 approx. Coma diameter 2.5 approx. [sic]  
 NOTE B Tail end point at PA 107. (Duration not indicated. Time of observation is assumed to be start time. Ed.)  
 NOTE C Small, strong condensed nucleus. Large coma. No tail perceptible. (Translated by IHW staff. Ed.)  
 NOTE D Tail at about PA 80. The central condensation (cf. May 4) is more elongated. Note the increased diameter of the coma compared to the observations of May 4. I think this is not only because of better atmospheric conditions. In the 15x80 binoculars and at 123x the coma seemed to be at least 15' wide and also a diffuse tail has been observed.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Eyp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.065	852126	0.225	1.7	0.140	9.1 x 6.1	4.00	Kodak 2415		Y	S	2/P	1	Dilsizian,R	
12.152	852127	0.200	3.5		10.3 x 6.9	16.00	Ektachrome	400/	N	T	800/S	2	Woidyla,B	A
12.181	852128	0.050	1.8		39.6 x27.0	16.00	Ektachrome	400/	N	T	804/S	2	Woidyla,B	A
12.248	852129	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	28/P	3	Yen,B	B
12.843	852130	0.300	1.5	0.200	6.9 x 4.6	9.50	Kodak 2415		Y		708/P	4	Jager,M	C

NOTE A (Observer's image identifier is preceded by prefix 1. Ed.)  
 NOTE B (Observer's image identifier is 12. Ed.) Instrument is Schmidt camera.  
 NOTE C Magnitude 6.0; antitail 16 arc min. at PA 287. (Print submitted is composite of 5 min. and 4.5 min. exposures separated by 3 min. Ed.)

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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
13.038	820517		B		8	3			0.115	N	7.8	30	5.0	Y		Alves, A.A	
13.087	820518	7.0:	B	112	8	2			0.05	B		7	3.9		1	Lalret, R	
13.089	820519	6.3	S	112	11.5	3			0.035	B		7	6.1	Y	3	Morrison, W	
13.092	820520	6.8	S	112	6	5	0.47	110	0.15	R	5	31	6.1	Y	3	Morrison, W	
13.096	820521	7.0	M	112	4.2 4.9	6			0.15	N	8	44	3.5C	Y	1	Allen, E	
13.108	820522	6.5	B	112					0.08	B		11	4.2	Y	1	Gorski, L	
13.15	820523	6.6	B	112	10	2			0.080	B		20				Kronk, G	
13.18	820524	4.2	B	112	12	6	3.9	85	0.035	B		7	5.6	Y	1	Jacobson, E	A
13.18	820525				40	6			EY				5.6M	Y	1	Jacobson, E	
13.20	820526	5.3	S	112					EY				6.0	Y	1	Keen, R	
13.20	820527	5.7		112					0.040	B		8	6.0	Y	1	Keen, R	B
13.20	820528	5.7	M	112	11	4			0.080	B		20	4.5C	Y	14	Morris, C.S	
13.21	820529	5.6	M	112	13	4			0.050	B		10	4.5C	Y	14	Morris, C.S	
13.365	820530	5.9	S	112					0.025	B		3	6.1			Seargent, D	
13.365	820531						1.6	105	0.08	B		15		Y	1	Seargent, D	
13.38	820532					6	5.0		0.05	B		7	6.3			Lovejoy, T	C
13.444	820533	6.3	B	112	10	3			0.05	B		10		Y	1	Tregaskis, T.B	D
13.450	820534	6.4	S	112		6			0.05	B		10	5.5	Y	1	Williams, P.F	
13.455	820535			112	5	8	0.5		0.32	N	8	150		Y	1	Tregaskis, T.B	E
13.458	820536	5.9	S	112		3			0.05	B		7	6.0C	Y	6	Garradd, G	
13.70	820537	7.3	B	M	4	0			0.05	R	7	20				Konstantinov, S	
13.72	820538	7.0	B	M					0.05	R	7	20				Konstantinov, S	
13.767	820539	6.5	M	112					0.035	B		9	6.2M	Y	1	Begbie, M.J.R	
13.775	820540				7.6	6		118	0.30	N	8.5	102	6.2M	Y	1	Begbie, M.J.R	
13.775	820541				7.6	6		118	0.30	N	8.5	102	6.2M	Y	1	Begbie, M.J.R	F
13.78	820542	6.0	B	E	7	5			0.05	B		7				Mormil, V	
13.792	820543	6.8	B	112	20	5	3	100	0.05	B		7	5.6	Y	3	Vincent, J	
13.800	820544	6.3	M	112	9	5		90	0.089	R	5.5	18	5.1	N	1	Ventura, F	G
13.813	820545	6.7	M	112	9	5	3.75	120	0.04	B		12	6.2	Y	1	Henshaw, C	
13.818	820546	6.8	M	AAVSO	4	3	0.1	66	0.156	N	10	54	6.5			Kosa-Kiss, A	
13.819	820547	6.4	M	112	16	4			0.07	B		20	5	Y	1	Tanti, T	H
13.826	820548	6.0	M	112	11	6	8.2	108	0.08	B		11	5.9	Y	1	Fleet, R.W	I
13.830	820549	5.9		112					EY				5.9	Y	1	Fleet, R.W	
13.830	820550	6.2	S	FF HYA	13	5			0.050	B		7	M	Y	1	Mikuz, H	J
13.830	820551	6.6	M	112		3			0.08	B		10	3.5CM	Y	1	Rapavy, P	K
13.833	820552	6.5	B	CZ	5	3			0.04	B		7	4.6			Brancik, K	
13.833	820553	6.8	M	CZ	16	3			0.10	B		25	4.5			Hajek, P	
13.8368	820554	6.7	B	112	8	8			0.080	B		11	4.5CM	Y		Broglioni, A	L
13.854	820555	7.4	B	CZ	9.5	3			0.10	B		25	5.0	Y	1	Polak, J	M
13.856	820556	5.9	S	112	12	3			0.050	B		7	5.1M	Y	1	Meozzi, D	
13.861	820557	6.8	M	CZ	8	2			0.055	R	6	12				Silhan, J	N
13.868	820558	5.9	S	112	9.7	6	1.5	108	0.05	B		10	5.5	Y	1	Rossi, L	
13.875	820559	6.8	B	112	8	3			0.05	B		10	4.5MC	Y	1	Menichetti, R	
13.875	820560	6.2	M	122	15	5			0.03	B		8	5.0M	Y	1	Melandri, F	
13.875	820561	6.3	M	112	17	5			0.030	B		8	5.0M	Y	1	Villa, M	
13.882	820562	7.2	M	112					0.06	R	4.5	10	3.0M	Y	1	Chodorowski, F	
13.89	820563	6.2	S	DCS 13		6			0.040	B		8	5 MT	Y	1	Feijth, H	
13.896	820564				5	3			0.064	R	12	32	3.0M	Y	1	Chodorowski, F	
13.896	820565	7.4:							0.080	B		15	4	Y	1	Nagele, A	O
13.90	820566	6.8	S	112					0.08	B		20	4.5	Y	1	Shanklin, J.D	P
13.902	820567				24	4	1	36	0.08	B		15	4.1	Y	1	Hurst, G.M	
13.903	820568	4.5	B		7	4	4	215	0.030	B		8	6.0	Y	1	Winkler, R	Q
13.906	820569	5.2	S	112	19	4			0.05	B		10	4.1	Y	1	Hurst, G.M	
13.910	820570	6.4	S	113	7	5			0.065	B		12	4.9	N	1	Foulkes, M	R
13.917	820571	6.3	S	112	9.5	3			0.070	B		16	4.9MC	Y	1	Taylor, M.D	S
13.92	820572	5.5	S	112	15	4			0.050	B		10	4.5M	Y	10	Bouma, R.J	
13.920	820573	6.4	S	112	9.5	4	1.07	105	0.08	B		15	5.8	Y	3	Haver, R	
13.925	820574	6.2	S	112	9.5	3	1.07	105	0.05	B		7	5.8	Y	3	Haver, R	
13.93	820575	7.1	S	112					0.20	R	12	40	3.5		1	Shanklin, J.D	

NOTE A Stellar condensation. 3.9 deg. tail is dust.

NOTE B Modified Sidgwick method used.

NOTE C Arrow shaped coma. Tail length is lower limit.

NOTE D Clear. (Observer gave limit as approximately 10. Ed.)

NOTE E Almost stellar-like nucleus. Tail length approximate. PA 45 to 90. (Observer gave limit as approximately 15. Ed.)

NOTE F Tail measurement refers to dust tail only.

NOTE G Coma elongated.

NOTE H Seeing good, transparency excellent. Moon.

NOTE I Midpoint on tail: 3.9 deg. at PA 107. End point of tail: 8.2 deg. at PA 108.

NOTE J Excellent conditions.

NOTE K Comet at threshold of visibility.

NOTE L I perceive detail. (Roughly translated by IEW staff. Ed.)

NOTE M Magnitude estimate uncertainty +/-0.5 mag.

NOTE N Baze.

NOTE O (Observer indicated "A" method [Argelander?]. Ed.) Comparison star is SAO 156040.

NOTE P Tail not certain.

NOTE Q (PA value may have been incorrectly determined. Ed.)

NOTE R Twilight, moon up.

NOTE S Roughly circular coma.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
13.826	831257	4	0.08	B		11		5.9	1	Fleet, R.W	A
13.913	831258	1.95	0.065	B		12	10	4.9	1	Foulkes, M	B

NOTE A Tail end point at PA 108. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Central nucleus offset in direction PA 270 deg. to 300 deg. Coma roughly circular. Little else seen.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
13.193	852131	2.306	5	0.45	0.9 x 0.6	30.00	Kodak Tri-X		N	M	29/P	1	Webb, R	A
13.242	852132	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y	S	29/P	1	Yen, B	B
13.436	852133	0.135	3.5		15.2 x 10.2	15.00	Ektachr. 400		N	X	39/S	1	Tregaskis, T.B	C
13.844	852134	0.760	4	0.19	2.7 x 1.8	7.00	Kodak Tri-X	400/27	N	O	34/T	1	Mikuz, H	D
13.850	852135	0.760	4	0.19	2.7 x 1.8	5.00	Kodak Tri-X	400/27	N	O	35/T	1	Mikuz, H	D
13.854	852136	0.760	4	0.19	2.7 x 1.8	4.00	Kodak Tri-X	400/27	N	O	36/T	1	Mikuz, H	D
13.922	852137	1.200	7	0.17	1.7 x 1.1	21.00	Kodak IIA-F		N	M	14/P	1	Ridley, H.B	E

DATE: 13 MAY 1986

DATE: 13 MAY 1986

NOTE A Film pushed to ASA 1000. Standard 3 min.-3 min. processing.  
NOTE B (Observer's image identifier is 17. Ed.) Instrument is Schmidt camera.  
NOTE C Push processed to 800 ASA.  
NOTE D Weather conditions very good but with moonlight. (Observer's image identifier is followed by suffix A. Ed.)  
NOTE E (Observer's image identifier is preceded by prefix 2B. Ed.) Instrument uses photographic plates.

DATE: 14 MAY 1986

DATE: 14 MAY 1986

## 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
14.030	820576	6.8	B	112	3	1			0.06	R	12	56	5.7	Y	1	Onofre D.,D	
14.052	820577			112	5.5	2	0.2	83	0.114	N	8	45	3.6	N	1	Mac Kenzie,G	A
14.063	820578	8.0	B	AAVSO	8	3			0.115	N	7.8	30	4.5	Y		Alves,A.A	
14.07	820579	6.0	S	AA	12	3			0.080	B		20				Green,D.W.E	B
14.072	820580	6.9	B	112		5			0.05	B		20	5.0	Y	1	da Silva,L.A.L	
14.08	820581	5.8	M	AA					0.050	B		7				Green,D.W.E	
14.08	820582	5.5	S	AA	15	4			0.050	B		7				Green,D.W.E	B
14.097	820583	7.3	M	112	4.2	6			0.15	N	8	44	3.0C	Y	1	Allen,E	
14.097	820584	6.5	M	112	19.0	7	4.25	105	0.05	B		12	6.9M	Y	1	Knight,S	C
14.10	820585	6.8	S	112	20	5			0.05	B		7	4.0	N	1	Harrington,P	
14.10	820586	5.7	S	112	14	4	1.0	95	0.050	B		10	5.5	Y	1	Bortle,J.E	
14.10	820587						4.0	105	0.050	B		7			1	Bortle,J.E	
14.10	820588				6	5			0.317	N	6	55				Bortle,J.E	
14.101	820589	6.4	S	112	11	3			0.035	B		7	5.8M	Y	3	Morrison,W	D
14.111	820590	6.6	B	112						EY						Knight,S	
14.118	820591	6.8	M	112	18.5	7			0.254	N	5.6	38	6.9M	Y	1	Knight,S	
14.19	820592	4.3	B	112	11	6	3.2	87	0.035	B		7	5.2M	Y	1	Jacobson,E	E
14.19	820593				34	6				EY			5.2M	Y	1	Jacobson,E	
14.35	820594	6.3	S	112					0.049	B		3				Jones,A	
14.35	820595						0.1	105	0.078	R	7.5	30				Jones,A	F
14.35	820596					6			0.317	N	5	86				Jones,A	
14.35	820597	6.1	S	112	13	3			0.050	B		7	5.7			Jones,A	
14.495	820598	5.9	S	112			9		0.05	B		7	6.5	Y	14	Garradd,G	
14.513	820599	6.3	S	112	15	4	1.5	90	0.07	B		10	5.5	Y	1	Kobayashi,J	
14.690	820600	6.3	S	112	7	5			0.13	R	4	21	5.3	Y	1	Campos,J	
14.726	820601	8.2	B	112	10	8	1.5	93	0.065	B		20	6.5	Y	1	McBain,J	G
14.741	820602	6.8	M	112					0.035	B		9	6.1M	Y	1	Begbie,M.J.R	
14.752	820603				6.8	5		119	0.30	N	8.5	102	6.1M	Y	1	Begbie,M.J.R	H
14.79	820604	6.2	B	E		5			0.06	R	10	21				Morrell,V	
14.80	820605	6.6	B	E	15	4			0.11	B		20				Chernis,K	
14.833	820606	6.6	B	112		4			0.08	B		10	3	C	N	Paradowski,M	
14.8368	820607	6.9	B	112	9	8			0.080	B		11	4.5CM	Y	1	Broglioni,A	I
14.840	820608	6.0	S	112			0.67		0.05	B		7		Y	1	Dziura,W	
14.846	820609	6.7	M	112	9	6	4	120	0.04	B		12	6.2	Y	1	Henshaw,C	
14.847	820610	5.9	B	112						EY			5.9	Y	1	Fleet,R.W	
14.847	820611	6.0	B	112					0.080	B		10	3.0CM	Y	1	Kieltyka,G	
14.851	820612	6.1	M	112	10	6	8.6	109	0.08	B		11	5.9	Y	1	Fleet,R.W	J
14.854	820613	6.1	M	112	21	5			0.030	B		8	5.5M	Y	1	Villa,M	
14.86	820614	6.7	B	112	15	3			0.050	B		7	5.0	Y	2	Merlin,J.-C	
14.882	820615		B	112	5	1			0.07	B		10	4.5	N	1	Deconinck,M	K
14.885	820616	7.3	B			0			0.050	B		10	5.0	Y	1	Linke,H	
14.998	820617	7.0	B	112		4			0.05	B		20	4.5	Y	1	da Silva,L.A.L	

NOTE A Temp.: 3 deg. C. Again tail very faint but a little easier than last observation; crescent moon nearby and a few clouds. Magnitude estimate not given because of fog/clouds but comet was noticeably dimmer (probably because of moon and no dark adaption).

NOTE B Coma diameter approximate.

NOTE C Stringy dust tail.

NOTE D 0.15 f/5 refr. 3lx tail 0.40 deg. long PA = 110.

NOTE E Stellar condensation.

NOTE F Coma elongated. PA 105 deg.

NOTE G Moonlight.

NOTE H Tail measurements refer to dust tail only.

NOTE I I perceive detail. (Roughly translated by IHW staff. Ed.)

NOTE J Midpoint on tail: 5.9 deg. at PA 108. End point of tail: 8.6 deg. at PA 109.

NOTE K Moon.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
14.053	831259	0.84	0.114	N	8	45	30	3.6	1	Mac Kenzie,G	
14.851	831260	4	0.08	B		11		5.9	1	Fleet,R.W	A
14.875	831261		0.356	SC	11	200				Soc. Astro. de France B	

NOTE A Tail end point at PA 109. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Drawing made by M. Verdenet. (Duration not indicated. Time of observation is assumed to be start 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)
14.255	852138	0.105	2.8		19.5 x13.0	6.00	Fuji. P1600D	1600/	N	S	1/S	1	Coco,M
14.261	852139	0.105	2.8		19.5 x13.0	8.00	Fuji. P1600D	1600/	N	S	2/S	1	Coco,M
14.268	852140	0.105	2.8		19.5 x13.0	10.00	Fuji. P1600D	1600/	N	S	3/S	1	Coco,M

DATE: 15 MAY 1986

DATE: 15 MAY 1986

## 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
15.059	820618	7.0	S	112	4.9	2			0.114	N	8	45	3.1	Y	1	Mac Kenzie,G	A
15.07	820619	5.7	M	AA					0.050	B		7				Green,D.W.E	
15.07	820620	5.6	S	AA	12	5			0.050	B		7				Green,D.W.E	B
15.07	820621	5.7	S	112	14	4	1.3	120	0.050	B		10	5.5	Y	1	Bortle,J.E	
15.07	820622	6.1	S	AA	10	3			0.080	B		20				Green,D.W.E	B
15.093	820623	8.0	M	112	2.3	7			0.15	N	8	44	3.5CM	Y	1	Allen,E	C
15.107	820624	7.0	B	112		1			0.05	B		20	5.3	Y	1	Onofre D.,D	
15.163	820625	6.6	M	112		6			0.05	B		12	6.5M	Y	1	Knight,S	
15.17	820626	5.7		112	13	4	1.4	110	0.040	B		8	6.5	Y	1	Keen,R	D
15.1958	820627	6.5	S	DCS	6	4			0.130	R	7.1	27	4.5		3	Machholz,D	E
15.438	820628	6.0	S	112					0.025	B		3				Seargent,D	
15.438	820629				12	6	2.0	107	0.08	B		15		Y	1	Seargent,D	
15.458	820630	6.5	B	3-39					0.03	B		8	5.8			Thompson,G	
15.528	820631	7.4	B	112		4			0.12	N	6	40	4.0	Y	1	Hayashi,H	F
15.563	820632	6.0	S	112			6		0.05	B		7	6.5	Y	14	Garradd,G	
15.705	820633	8.3	B	112	10	8	1.5	90	0.065	B		20	5.6	Y	1	McBain,J	G
15.768	820634	6.8	M	112					0.035	B		9	6.1M	Y	1	Begbie,M.J.R	
15.779	820635				6.0	6		120	0.30	N	8.5	102	6.1M	Y	1	Begbie,M.J.R	H
15.826	820636	6.9	M	CZ	15	4			0.10	B		25	4.8			Bajek,P	
15.831	820637	6.2	S	88	8	3			0.050	B		7	5.1M	Y	1	Meozzi,D	
15.8646	820638	6.9	S	112	15	3	0.5	80	0.080	B		15	5.0	Y	1	Korth,S	I
15.878	820639	6.5	M	112	10	5	5.9	109	0.08	B		11	5.8	Y	1	Fleet,R.W	J
15.88	820640	7.1	S	DCS 13	4	3			0.120	B		20	4.5MT	Y	1	van Loo,F.R	
15.89	820641	7.1	S	112					0.08	B		20	4.3			Shanklin,J.D	
15.90	820642	7.5	S	112					0.20	R	12	40	4.3			Shanklin,J.D	
15.903	820643	7.0	B	SAO	5.0	3			0.125	R	6	35	3.0	Y	1	Guthrie,O	
15.909	820644	7.1	M	112	9	6			0.04	B		12	5.5	Y	1	Henshaw,C	K
15.91	820645	6.2	S	112	10	2			0.080	B		20	3.5MT	N	10	Bouma,R.J	B
15.913	820646	5.4	S	112	18	2			0.08	B		15	2.0C	N	1	Hurst,G.M	
15.917	820647	6.2	S	112	9.0	3			0.070	B		16	4.1MC	Y	1	Taylor,M.D	L

NOTE A Comet definitely appeared brighter than magnitude 7.1 (which was reported magnitude 4 nights earlier). Smaller size probably due to moon nearby.

NOTE B Coma diameter approximate.

NOTE C Clouds.

NOTE D Modified Sidgwick method used.

NOTE E 42° moon 36 degrees away.

NOTE F Moon.

NOTE G Moonlight.

NOTE H Tail measurement refers to dust tail only.

NOTE I Tail length is upper limit, PA approximate.

NOTE J Midpoint on tail: 2.9 deg. at PA 108. End point of tail: 5.9 deg. at PA 109.

NOTE K Low.

NOTE L Thin 'line' thru coma. [sic]

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
15.056	831262	0.52	0.114	N	8	45	39	3.1	1	Mac Kenzie,G	
15.878	831263	4	0.08	B		11		5.8	1	Fleet,R.W	A
15.906	831264	0.08	0.36	SC	11	325	10	5.0	1	Korth,S	B

NOTE A Tail end point at PA 109. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Compared to the observations of May 12 the inner coma has considerably diminished.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
15.082	852141	0.050	1.8		39.6 x27.0	3.00	Kodak Tri-X	400/	N	O	10/P	1	Valeriani,G	A

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

DATE: 16 MAY 1986

DATE: 16 MAY 1986

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
16.042	820648	8.6	B	AAVSO	6.0	3			0.115	N	7.8	30	4.5	Y		Alves, A.A.	
16.06	820649	6.2	S	AA	7	2			0.080	B		20				Green, D.W.E.	A
16.122	820650	7.2	S	112		3			0.05	B		20	4.5	Y	1	da Silva, L.A.L.	
16.18	820651	5.9	M	112			4	105	0.05	B		10	5.5M	Y	11	Hale, A.	B
16.23	820652	5.3	B	112	13	0			0.035	B		7	3.9M	Y	1	Jacobson, E.	
16.448	820653	6.1	S	112					0.025	B		3		Y	1	Seargent, D.	C
16.448	820654						1.4	107	0.08	B		15				Seargent, D.	
16.488	820655	6.6	M	112	4	4			0.10	N	10	55	4.5M	Y	1	Kato, T.	D
16.500	820656	6.5	S	112					0.05	B		7	5.5CM	Y	6	Garradd, G.	
16.500	820657	7.1	M	112	8.2	4			0.08	B		11	M		1	Mitsuma, S.	
16.510	820658	7.1	M	112		5			0.16	N	6.3	31	M		1	Mitsuma, S.	
16.52	820659	6.5	S	AAVSO	5	3			0.07	B		10	4.0M	Y	1	Hayashi, A.	
16.54	820660	6.2	S	AAVSO	6	4			0.13	N	6.3	24	4.0M	Y	1	Hayashi, A.	
16.55	820661	8.0	B	112	5	4			0.080	B		11	CM	Y	3	Okuda, M.	E
16.705	820662	8.5	B	112	8	1			0.065	B		20	5.6	Y	1	McBain, J.	F
16.781	820663	6.7	B	112	20	5			0.05	B		7	4.9	Y	2	Vincent, J.	G
16.789	820664	6.9	M	112					0.035	B		9	5.6M	Y	1	Begbie, M.J.R.	
16.79	820665	6.5	B	E	5	5			0.06	R	10	21				Mormil, V.	
16.792	820666	7.7	M	112	8	6			0.04	B		12	5.4	N	1	Benshaw, C.	
16.792	820667	6.9	B	112	20	5			0.105	R	15	86	4.9	Y	2	Vincent, J.	H
16.798	820668				5.1	6		130	0.30	N	8.5	102	5.6M	Y	1	Begbie, M.J.R.	I
16.80	820669	7.0	B	AAVSO	15	4			0.11	B		20				Chernis, K.	
16.81	820670	6.1		112	10	3			0.050	B		10	5	Y	1	Ward, A.	
16.816	820671	6.7	M	112	8.5	6	3.4	106	0.08	B		11	5.5M	Y	1	Fleet, R.W.	
16.8819	820672	7.0:	S	112	10	4			0.080	B		15	3.5M	Y	1	Korth, S.	J
16.90	820673	7.2	S	112					0.08	B		20	4.3		1	Shanklin, J.D.	
16.913	820674	5.8	S	112	14	2			0.05	B		10	2.5C	Y	1	Hurst, G.M.	
16.915	820675				14	3			0.08	B		15	2.5C	Y	1	Hurst, G.M.	

NOTE A Coma diameter approximate.

NOTE B Some interference from moonlight. This probably precluded a naked-eye sighting.

NOTE C Some moonlight.

NOTE D m2 = 12 m.

NOTE E Moon.

NOTE F Moonlight. No tail seen.

NOTE G Also used Vehrenberg chart no. 247. Quarter moon.

NOTE H Clear sky.

NOTE I Tail measurement refers to dust tail only.

NOTE J Coma diameter approximate. Moonlight disturbing.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
16.816	831265	4	0.08	B		11		5.5	1	Fleet, R.W.	A

NOTE A Tail end point at PA 106. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
16.109	852142	0.050	2.0			3.50	Kodak Tri-X	400/	N	X	21/P		Falsarella, N



DATE: 17 MAY 1986

DATE: 17 MAY 1986

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
17.1944	820676	6.9	S	DCS	7	2			0.080	B		20	3.8		3	Machholz,D	A
17.450	820677	6.6	S	112		4			0.05	B		10	5.0	Y	1	Williams,P.F	
17.46	820678	7.8	B	112	6	4			0.230		4.4	44	TM	Y	1	Okuda,M	B
17.48	820679	6.3	M	AAVSO	11	5			0.065	R	8	16	4.5M	Y	1	Nakamura,A	
17.48	820680	6.9	B	AAVSO	8	6			0.20	N	5.6	35	4.5M	Y	1	Nakamura,A	C
17.483	820681	6.9	M	112	2	5			0.10	N	10	55	3.5M	Y	1	Kato,T	
17.53	820682	8.0	B		10	6			0.15	N	8	43	4.5	Y	1	Uda,K	
17.58	820683	5.6		112		5	1.0		0.08	B		15	4.5M	N	1	Lowejoy,T	
17.59	820684	6.4	S	112	8	7			0.25	N	5	38	5.6	Y	1	Clark,M.L	D
17.684	820685	6.6	S	112	5	5			0.13	R	4	21	5.2	Y	1	Campos,J	E
17.747	820686	6.8	M	112					0.035	B		9	5.3M	Y	1	Begbie,M.J.R	
17.760	820687				4.2	7			0.30	N	8.5	102	5.3M	Y	1	Begbie,M.J.R	
17.792	820688	6.7	M	112	6.5	6	2.4	106	0.08	B		11	4.7M	Y	1	Fleet,R.W	
17.896	820689	7.6							0.080	B		15	4	Y	1	Nagele,A	F

NOTE A 62% moon 22 degrees away.

NOTE B Instrument is Wright-Schmidt. (Observer gave limit as 10.0. Ed.) Moon.

NOTE C Tail length = yes.

NOTE D Moon up. No tail visible.

NOTE E Moonlight.

NOTE F (Observer indicated "A" method [Argelander?]. Ed.) Comparison star is SAO 137588.

DATE: 18 MAY 1986

DATE: 18 MAY 1986

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
18.188	820690	7.6	S	112	30	2			0.203	SC	10	50	3 MC	Y	1	Gronek, J.D	A
18.19	820691	6.1	S	112	9	3			0.080	B		20	3.5MC	Y	9	Morris, C.S	
18.806	820692	6.9	M	112	4.5	5	1.2	107	0.08	B		11	4.6M	Y	1	Fleet, R.W	
18.812	820693	7.0	M	112					0.035	B		9	5.2M	Y	1	Begbie, M.J.R	
18.899	820694	7.2	M	112	4	4			0.298	N	5	40	5.8	Y	1	Stott, D	B
18.90	820695	7.3	S	112					0.08	B		20	3.5		1	Shanklin, J.D	
18.94	820696	8.1	S	88					0.20	R	12	40	3.0		1	Shanklin, J.D	

NOTE A 1st 1/4 moon. Exc. see.

NOTE B Gibbous moon.

DATE: 19 MAY 1986

DATE: 19 MAY 1986

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
19.19	820697	6.3	S	112	11	3			0.080	B		20	3.0MC	Y	9	Morris, C. S	
19.365	820698	6.5	S	112					0.05	B		10				Seargent, D	
19.365	820699						1.5	107	0.08	B		15		N	1	Seargent, D	A
19.698	820700	6.8	S	112	4.0	5			0.13	R	4	21	5.2	Y	1	Campos, J	B
19.79	820701	7.0	B	M	14	4			0.05	B		7				Tsygankov, D	
19.90	820702	8.0	S	88					0.20	R	12	40	3.0		1	Shanklin, J. D	
19.903	820703	4.7	B		7 3	4 3		216	0.040	R	9	12	6.0	Y	1	Winkler, R	C

NOTE A Moon.

NOTE B Moonlight.

NOTE C (PA value may have been incorrectly determined. Ed.)

DATE: 20 MAY 1986

DATE: 20 MAY 1986

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
20.19	820704	6.5	S	112	11	3			0.080	B		20	3.0MC	Y	9	Morris,C.S	
20.438	820705	6.6	S	112					0.05	B		10		N	1	Seargent,D	A
20.719	820706	6.8	M	112	5.0	6	1.2	106	0.08	B		11	4.8M	Y	1	Fleet,R.W	
20.787	820707	6.9	M	88					0.035	B		9	4.9M	Y	1	Begbie,M.J.R	
20.794	820708	8.6	M	88	4.2	6		114	0.30	N	8.5	102	4.9M	Y	1	Begbie,M.J.R	B
20.860	820709	6.5	S	C2	10	0			0.08	B		10	3.1M	Y	1	Hroch,F	C
20.882	820710	7.2	B	88	7	6			0.090	N	7	40	3.5	Y	1	Kopplin,J	
20.89	820711	6.1		112	10	3			0.050	B		10	5	Y	1	Ward,A	
20.896	820712	7.5	M	112	4	4			0.298	N	5	40	5.7	Y	1	Stott,D	D

NOTE A Moon.

NOTE B Tail measurement refers to dust tail only.

NOTE C Estimated magnitude uncertainty +/-0.8.

NOTE D Gibbous moon.

DATE: 21 MAY 1986

DATE: 21 MAY 1986

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
21.365	820713	6.6	S	112					0.05	B		10		N	1	Seargent,D	A
21.365	820714						1	105	0.08	B		15				Seargent,D	B
21.743	820715	7.0	M	88	5.0	5	2.1	109	0.08	B		11	4.8M	Y	1	Fleet,R.W	
21.774	820716	7.0	M	88					0.035	B		9	4.9M	Y	1	Begbie,M.J.R	
21.82	820717	6.3		112	10	3			0.050	B		10	5	Y	1	Ward,A	
21.896	820718	7.9	M	112	4	4			0.298	N	5	40	5.5	Y	1	Stott,D	C
21.91	820719	8.1	S	88					0.20	R	12	40	3.5		1	Shanklin,J.D	

NOTE A Moon.

NOTE B Tail lengths approximate. Tail 2? [sic]

NOTE C Full moon.

DATE: 22 MAY 1986

DATE: 22 MAY 1986

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
22.365	820720	6.8	S	112					0.05	B		10		N	1	Seargent,D	A
22.365	820721						1	107	0.08	B		15				Seargent,D	B
22.507	820722	7.8	M	88	2	3			0.10	N	10	55	4.0M	Y	1	Kato,T	
22.757	820723	8.8	M	88	2.7	6			0.30	N	8.5	102	4.9M	Y	1	Begbie,M.J.R	
22.785	820724	7.3	M	88	5.0	5	1.2	112	0.08	B		11	4.6M	Y	1	Fleet,R.W	
22.789	820725	7.1	M	88					0.035	B		9	4.9M	Y	1	Begbie,M.J.R	

NOTE A Moon.

NOTE B PA approximate.

DATE: 23 MAY 1986

DATE: 23 MAY 1986

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)
23.80	820726	7.3	B	M	11	3	0.1	175	0.05	B		7				Tsygankov,D

DATE: 24 MAY 1986

DATE: 24 MAY 1986

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
24.391	820727	7.0	S	88	7.5	3			0.15	N	8	64		Y	1	Tregaskis,T.B	A
24.43	820728	8.4	S	112	2	3			0.317	N	5	86	3.5			Jones,A	B
24.81	820729	7.3	B	M	7	3			0.07	N	8	33				Pashko,D	
24.83	820730	6.9	B	E	7	3			0.07	N	8	33				Kolomeyets,S	
24.8819	820731	7.6	S	112		3			0.080	B		15	3.8	Y	1	Korth,S	C
24.889	820732	7.9	B	SAO	5.4	3			0.125	R	6	35	3.2	Y	1	Guthier,O	
24.910	820733	4.8	B		7 3	4 3	218		0.040	R	9	12	6.0	Y	1	Winkler,R	D

NOTE A Bright moon. (Observer gave limit as approximately 12. Ed.)

NOTE B Moon 15 days.

NOTE C Coma diameter 3-4 arc min.

NOTE D (PA value may have been incorrectly determined. Ed.)



DATE: 25 MAY 1986

DATE: 25 MAY 1986

## 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	
25.1785	820734	7.4	S	SAO	6	5	0.57	86	0.130	R	7.1	27	5.5		11	Machholz,D		
25.19	820735	6.7	M	88					0.080	B		20	5.5	Y	2	Morris,C.S		
25.20	820736	6.7	M	88			1.5	105	0.05	B		10	5.5M	Y	16	Hale,A	A	
25.354	820737	6.7	S	112, 88					0.05	B		10	5.8	Y	1	Seargent,D		
25.354	820738	6.7	S				1.4	108	0.08	B		15			1	Seargent,D		
25.503	820739	8.0	M	88	6.0	5			0.16	N	6.3	31	4	M	1	Mitsuma,S		
25.52	820740	6.9	S	AAVSO	6	4			0.13	N	6.3	24	5.0	Y	1	Hayashi,A		
25.52	820741	7.1	M	112	5	4			0.080	B		11	3	MC	Y	1	Watanabe,N	
25.524	820742	7.9	M	88					0.08	B		11	4	M	N	1	Mitsuma,S	
25.529	820743	7.0	S	88	3.6	5			0.1	N	10	56	4.5	Y	1	Ichikawa,K		
25.67	820744	8.5	B	M	4	0			0.05	R	7	20				Konstantinov,S		
25.705	820745	7.3	M	88	6.7	6	4.7	108	0.08	B		11	5.9	Y	1	Fleet,R.W	B	
25.713	820746	7.4	M	88					0.035	B		9	5.6M	Y	1	Begbie,M.J.R		
25.727	820747				3.4	6			0.30	N	8.5	102	5.6M	Y	1	Begbie,M.J.R		
25.812	820748		S	88	5.5	3			0.089	R	5.5	18	4.5	N	1	Ventura,F	C	
25.82	820749	7	B	E	6	5			0.08	R	10	28				Mozmil,V		
25.826	820750	6.8	S	88	8	1			0.07	B		20	4	Y	1	Tanti,T	D	
25.847	820751	8.6	B	88	3	3			0.25	N	6	40	4	CT	N	2	Adamoli,G	
25.858	820752	6.8	M	CZ	10	0			0.08	B		10	6.2T	Y	1	Hroch,F	E	
25.859	820753	6.7	S	88	6	3			0.050	B		7	6.0	Y	1	Meozzi,D		
25.864	820754	7.9	M	CZ	5				0.10	B		25			2	Kucera,P		
25.8645	820755	7.6	B	88	8	8			0.080	B		11	5	C	Y		Brogioni,A	F
25.866	820756	7.6	S	CZ	7	4			0.035	B		7	6.2	Y	1	Hroch,F	G	
25.868	820757	6.9	M	88	11	4			0.030	B		8	5.5	Y	1	Villa,M		
25.869	820758	7.4	S	88	5	1			0.05	B		10	5	C	Y	1	Menichetti,R	
25.872	820759	7.3	S	88	5	2			0.113	N	8	22	5.5	Y	1	Schambeck,C.M		
25.875	820760	7.0	M	88		4			0.03	B		8	5.5	Y	1	Melandri,F		
25.875	820761	7.9	B	88					0.090	N	7	26	3.5	Y	1	Vohla,F		
25.879	820762	8.1	B	SAO	2.7	4	0.1	128	0.250	N	6	75	3.8	Y	1	Guthrie,O		
25.88	820763	7.4	S	88	5	3			0.080	B		15	4	Y	1	Glowinski,C		
25.882	820764	7.9			6	3			0.350	SC	11	120	4.0C	Y	1	Marx,H	H	
25.886	820765	7.8	B		2.5	5			0.110	R	6.8	47	4.0C	Y	1	Lipski,P		
25.889	820766	7.0	S	SAO	10	4			0.063	B		9	4.0	Y	2	Kammerer,A	I	
25.896	820767	7.2	S	88	20	3			0.050	B		16	6.2	Y	1	Nolle,M		
25.903	820768	7	B	88		4			0.200	SC	10	50	5.0	Y	7	Linder,J	J	
25.903	820769	7.9							0.080	B		15	4	Y	1	Nagele,A	K	
25.910	820770	4.8	B		7	3	3	218	0.040	R	9	12	6.0	Y	1	Winkler,R	L	

NOTE A Some interference from moonlight (full moon) at end of observation.

NOTE B Midpoint on tail: 2.3 deg. at PA 108. End point of tail: 4.7 deg. at PA 108.

NOTE C Mist. Magnitude &lt;&lt;6.2. [sic]

NOTE D Seeing good, transparency fair/poor. Haze.

NOTE E Estimated magnitude uncertainty +/-0.2. Coma diameter determined by comparison with a pair of stars. Measurement from a plot yields 10 arc min.

NOTE F I perceive detail. (Roughly translated by IHW staff. Ed.)

NOTE G Estimated magnitude uncertainty +/-0.2.

NOTE H Comparison stars SAO 137559, 137576. (Observer indicated "A" method [Argelander?]. Ed.)

NOTE I In 0.075 Newton starlike central condensation, about 10 mag. glimpsed.

NOTE J Tail length 3-4'.

NOTE K Nearly invisible.

NOTE L (PA value may have been incorrectly determined. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
25.705	831266	4	0.08	B		11		5.9	1	Fleet,R.W	A

NOTE A Tail end point at PA 108. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
25.834	852143	0.300	1.5	0.200	6.9 x 4.6	10.00	Kodak 2415		Y		910/P	4	Jager,M	A

NOTE A Magnitude 6.9; antitail 12 arc min. at PA 287. (Print submitted is composite of two 5 min. exposures separated by 4 min. Ed.)

DATE: 26 MAY 1986

DATE: 26 MAY 1986

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	
26.08	820771				7.2	4			0.317	N	6	55				Bortle,J.E		
26.08	820772	6.4	S	88	16	4			0.050	B		10	6	Y	1	Bortle,J.E		
26.101	820773	7.9	S	88	4.5	4			0.06	R	15	36	5.8	Y	3	Morrison,W		
26.101	820774	8.0	S	88	8				0.035	B		7	5.8	Y	3	Morrison,W	A	
26.17	820775	6.2	B	88	16	0			0.035	B		7	6.0	Y	1	Jacobson,E		
26.1715	820776	7.7	S	SAO	6	4	0.29	90.	0.130	R	7.1	27	5.6		11	Machholz,D		
26.19	820777	6.7	S	88		3			0.050	B		10	6.2	Y	2	Morris,C.S		
26.21	820778	6.8	M	88			1.5	105	0.05	B		10	5.5M	Y	16	Hale,A	B	
26.2188	820779	6.2	M	88	12	6	3.00	120	0.05	B		7	6.1	Y	3	Cook,A.J		
26.34	820780	7.6	S	MP-5 23					0.078	R	7.5	30				Jones,A		
26.34	820781				3	6			0.317	N	5	86				Jones,A		
26.360	820782	7.4	S	88		4			0.05	B		10	5.0	Y	1	Williams,P.F		
26.42	820783	6.4	S	88	10		1.0		0.03	R	7	8	6.1C		1	Lovejoy,T		
26.481	820784	7.0	S	88	3.6	5			0.1	N	10	56	5.0	Y	1	Ichikawa,K		
26.482	820785	7.4	S	88	7.5	3			0.15	N	8	4		Y	1	Tregaskis,T.B	C	
26.51	820786	6.5	M	88	8	5			0.15	N	5.3	32	5.5	Y	1	Oka,A		
26.51	820787	9							0.20	N	6	48	3	Y	5	Tanikawa,M		
26.52	820788	7.0	S	AAVSO	4	3			0.13	N	6.3	24	4.5	Y	1	Hayashi,A		
26.53	820789	6.8	M	112	13	3			0.080	B		11	3	C	Y	1	Watanabe,N	
26.531	820790	8.1	M	88	5.5	4			0.16	N	6.3	31	4	N	1	Mitsuma,S		
26.712	820791	7.1	S	88	6.0	4			0.13	R	4	21	5.5	Y	1	Campos,J		
26.729	820792	8.5	B	88	9	1	0.17	270	0.065	B		20	6.2	Y	1	McBain,J	D	
26.78	820793	6.9	B	E	8	5			0.08	R	10	28				Mormil,V		
26.81	820794	6.8	B	E	13	5	1.5		0.05	B		7				Mormil,V		
26.840	820795	6.9	S	88	5.5	3			0.050	B		7	6.0	Y	1	Meozzi,D		
26.84	820796	7.0	B	M	6	5			0.05	B		7				Mormil,V		
26.858	820797	7.6	S	X SEX	8	7			0.080	B		10		Y	1	Mikuz,H	E	
26.860	820798	7.3	S	88	7.0	5	1.00	100	0.08	B		15	6.0	Y	3	Haver,R		
26.863	820799	8.0	B		2.0	6			0.110	R	6.8	47	4.0C	N	1	Lipaki,P		
26.865	820800	7.2	S	88	7.5	3	1.00	100	0.05	B		7	6.0	Y	3	Haver,R		
26.872	820801	8.0	S	88, 133	4	3			0.114	N	7.9	23	4.5C	Y	1	Di Meglio,F		
26.875	820802	7.5	S	88	5	1			0.05	B		10	4.5C	Y	1	Menichetti,R		
26.875	820803	8.0	B	88					0.090	N	7	26	5.5	Y	1	Vohla,F		
26.885	820804	8.4	B	CZ	9	2			0.10	B		25	4	Y	1	Polak,J	F	
26.890	820805	8.4	B		2.0	1			0.130	N	8	40	4.0	Y	1	Lieder,F		
26.899	820806	7.0	S	88					0.030	B		8	5.0	Y	1	Villa,M		
26.910	820807	4.9	B		6	3	2	1	0.040	R	9	12	6.0	Y	1	Winkler,R	G	
26.93	820808	8.4	S	88					0.20	R	12	40	4.0			Shanklin,J.D	H	
26.982	820809	7.9	B	88		1			0.05	B		20	5.5	Y	1	Onofre D.,D		

NOTE A Coma diameter approximate.

NOTE B Some interference from moonlight at end of observation. A distinct brightening in the outer coma, detached from the central condensation was observed with the 20 cm reflector.

NOTE C Bright moon and haze. (Observer gave limit as approximately 11. Ed.)

NOTE D Seeing very good, comet also visible in a 12x40 finderscope.

NOTE E Very good conditions.

NOTE F Magnitude estimate uncertainty +/-0.3 mag.

NOTE G (PA value may have been incorrectly determined. Ed.)

NOTE H Low.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)
26.224	831267	3	0.050	B		7	15	6.1	3	Cook,A.J
26.870	831268	0.75	0.114	N	7.9	23	15	4.5	1	Di Meglio,F

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Byp	Gdng	Id/Typ	Site	Observer(s)	Notes
26.208	852144	2.306	5	0.45	0.9 x 0.6	25.00	Kodak Tri-X		N	M	30/P	1	Webb,R	A
26.881	852145	0.760	4	0.19	2.7 x 1.8	15.00	Kodak Tri-X	400/27	N	O	0/T	1	Mikuz,H	B
26.890	852146	0.760	4	0.19	2.7 x 1.8	10.00	Kodak Tri-X	400/27	N	O	1/T	1	Mikuz,H	B

NOTE A Film pushed to ASA 1000. Standard 3 min.-3 min. processing.

NOTE B Weather conditions very good. Possible very thin cirrus clouds. (Observer's image identifier is followed by suffix A. Ed.)

DATE: 27 MAY 1986

DATE: 27 MAY 1986

## 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
27.07	820810	7.7	M	AA					0.229	R	12	86				Green,D.W.E	
27.07	820811	7.5	S	AA	4	5			0.229	R	12	86				Green,D.W.E	A
27.09	820812	6.3	S	88	15	3			0.050	B		10	6	Y	1	Bortle,J.E	
27.09	820813	7.1	S	AA	8	3			0.080	B		20				Green,D.W.E	A
27.125	820814	6.8	M	88		7	2.0	96	0.05	B		12	6.2	Y	1	Knight,S	
27.15	820815	6.2	B	88	12	0			0.035	B		7	6.0	Y	1	Jacobson,E	
27.33	820816	7.0	S	88					0.050	B		7				Jones,A	
27.33	820817				7	5			0.078	R	7.5	30				Jones,A	
27.33	820818						0.25	115	0.317	N	5	86	5.2			Jones,A	B
27.352	820819	6.8	S	112, 88	9	6			0.05	B		10	6.1	Y	1	Seargent,D	
27.352	820820						1	100	0.08	B		15				Seargent,D	C
27.38	820821	6.5	S	88	11		1.0		0.08	B		15	6.1C		1	Lovejoy,T	D
27.479	820822	8.1	M	88	6.4	5			0.16	N	6.3	31	5	Y	1	Mitsuma,S	
27.483	820823	8.2	M	88	4.8	5			0.16	N	6.3	80	5	Y	1	Mitsuma,S	
27.501	820824	8.0	M	88	2	3			0.10	N	10	55	4.0C	Y	1	Kato,T	
27.52	820825	8.1	B		7	6			0.15	N	8	43	5.0	Y	1	Uda,K	
27.708	820826	7.4	S	88	5.5	4			0.13	R	4	21	5.2	Y	1	Campos,J	
27.726	820827	7.5	M	88	7.0	6	3.1	109	0.08	B		11	6.0	Y	1	Fleet,R.W	
27.76	820828	7.8	B	E		3	0.1	183	0.07	N	8	33				Shitikov,A	
27.809	820829	7.5	M	88					0.035	B		9	6.0	Y	1	Begbie,M.J.R	
27.81	820830	7.3	B	E	10	5	0.5		0.08	R	10	28				Mormil,V	
27.816	820831	6.8	S	88	8	4			0.07	B		20	4.5	Y	1	Tanti,T	E
27.817	820832				4.0	6		100	0.30	N	8.5	102	6.0	Y	1	Begbie,M.J.R	F
27.851	820833	7.6	M	112	5	1			0.15		15	56	4.1C	Y	1	Posa,O	G
27.854	820834	7.5	M		5	2			0.15	R	15	56	4.1	Y	1	Csomos,G	H
27.859	820835	7.1	S	88	5	3			0.050	B		7	6.0	Y	1	Meozzi,D	
27.8645	820836	7.9	B	88	7	3			0.080	B		11	4.5C	Y		Broglioni,A	I
27.875	820837	7.6	S	88	5	1			0.05	B		10	4.5C	N	1	Menichetti,R	
27.89	820838	7.5	B	88	5.6	3	0.63	112	0.150	N	5	25	6.0	Y	2	Merlin,J.-C	
27.899	820839	7.3	S	88	9	2			0.08	B		15	2.5	Y	1	Hurst,G.M	
27.904	820840	8.3	M	88		3			0.298	N	5	40	5.5T	Y	1	Stott,D	

NOTE A Coma diameter approximate.

NOTE B Diffuse coma, moderate condensation, small nucleus.

NOTE C Possible fan between PA about 60 and 150. PA 100 is approximate. PA 150 tail length approximate.

NOTE D PA 110 to 145.

NOTE E Seeing good, transparency fair. Haze.

NOTE F Tail measurement refers to dust tail only.

NOTE G Probably a rough estimate (missing map 88). Instrument is Coude refractor.

NOTE H Instrument is Coude refractor.

NOTE I I perceive detail. (Roughly translated by IHW staff. Ed.)

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
27.726	831269	4	0.08	B		11		6.0	1	Fleet,R.W	A

NOTE A Tail end point at PA 109. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 28 MAY 1986

DATE: 28 MAY 1986

## 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	
28.17	820841	6.3	B	88	10	0			0.035	B		7	6.0	Y	1	Jacobson,E		
28.19	820842	6.9	M	88					0.05	B		10	5.5	Y	17	Hale,A	A	
28.2083	820843	6.9	S	SAO	6	3	0.43	92	0.080	B		20	5.7	Y	1	Nachholz,D		
28.368	820844	6.8	S	112, 88					0.05	B		10	6.2	Y	1	Seargent,D		
28.368	820845						1.6	108	0.08	B		15				Seargent,D		
28.766	820846	7.5	M	88					0.035	B		9	5.9	Y	1	Begbie,M.J.R		
28.785	820847	7.4	M	88	6.5	6	3.7	110	0.08	B		11	5.9	Y	1	Fleet,R.W	B	
28.80	820848	7.8	B	E	9	5			0.08	R	10	28				Mormil,V		
28.815	820849	7.5	S	88	7	3			0.089	R	5.5	18	5.2	N	1	Ventura,F	C	
28.823	820850	6.8	S	88	8	4			0.07	B		20	5	Y	1	Tanti,T	D	
28.864	820851	7.8	S	88	4	1			0.05	B		10	4	C	Y	1	Menichetti,R	
28.865	820852	7.6	M	88	7	3			0.030	B		8	5.0	Y	1	Villa,M		

NOTE A Some interference from thin cirrus.

NOTE B Midpoint on tail: 1.3 deg. at PA 110. End point of tail: 3.7 deg. at PA 110.

NOTE C PA 130 to 140.

NOTE D Seeing good. Transparency good/fair.

## SUB-NETWORK: DRAWING

Date(UT)	ACON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
28.785	831270	4	0.08	B		11		5.9	1	Fleet,R.W	A

NOTE A Tail end point at PA 110. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 29 MAY 1986

DATE: 29 MAY 1986

## 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	
29.06	820853	7.8	M	AA					0.229	R	12	86					Green,D.W.E	
29.06	820854	7.7	S	AA	4	5			0.229	R	12	86					Green,D.W.E	A
29.100	820855	7.8	S	88	6	3			0.06	R	15	36	5.8T	Y	3		Morrison,W	
29.21	820856	6.0:		88	40	0				EY			6.2	Y	39		Morris,C.S	B
29.23	820857	6.3	B	88	10	0			0.035	B		7	6.0	Y	1		Jacobson,E	
29.23	820858	7.0	S	88	14.5	3	1.67	108	0.050	B		10	6.2	Y	39		Morris,C.S	
29.365	820859	6.9	S	112, 88			3	108	0.05	B		10	6.2	Y	1		Seargent,D	
29.42	820860	7.0	S	88					0.08	B		15					Lovejoy,T	
29.54	820861	7.2	S	DCS	8	5			0.25	N	5	62	6.3	Y			Clark,M.L	
29.726	820862	7.6	M	88	7.0	5	5.4	109	0.08	B		11	6.1	Y	1		Fleet,R.W	C
29.740	820863	7.5	S	88	6.0	4			0.13	R	4	21	5.4	Y	1		Campos,J	
29.797	820864	7.6	M	88					0.035	B		9	6.1	Y	1		Begbie,M.J.R	
29.80	820865	7.9:	B	E	6	5			0.08	R	10	28					Mormil,V	
29.810	820866				5.9	5		107	0.30	N	8.5	102	6.1	Y	1		Begbie,M.J.R	D
29.823	820867	7.2	S	88	6.5	2			0.07	B		20	4	Y	1		Tanti,T	E

NOTE A Coma diameter approximate.

NOTE B Probable naked eye sighting, but comet very close to 6th mag. star. Coma diameter very uncertain.

NOTE C Midpoint on tail: 3.0 deg. at PA 108. End point of tail: 5.4 deg. at PA 109.

NOTE D Tail measurement refers to dust tail only.

NOTE E Seeing fair, transparency fair. Haze.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
29.726	831271	4	0.08	B		11		6.1	1	Fleet,R.W	A

NOTE A Tail end point at PA 109. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
29.094	852147	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	285/P	1	Sabia,J.D	A

NOTE A Anti-tail noted on negative, very short and spike-like. Not seen visually. Photograph made by J. Kamichitis and J.D. Sabia.

DATE: 30 MAY 1986

DATE: 30 MAY 1986

## 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	
30.19	820868	6.8		88	15	3	0.5	100	0.040	B		8	7.0	Y	1	Keen,R	A	
30.21	820869	7.2	S	SAO, 88	10	4	1.5	100	0.32	N	4	33	7.0	Y	1	Keen,R		
30.22	820870	6.3	B	88	10	0			0.035	B		7	6.0	Y	1	Jacobson,E		
30.33	820871	7.3	S	88					0.045	R	6	13				Jones,A	B	
30.33	820872					5			0.317	N	5	86				Jones,A		
30.365	820873	7.1	S	112, 88			2	110	0.05	B		10	6.2	Y	1	Seargent,D	C	
30.435	820874	7.6	S	88		3			0.05	B		10	5.0	Y	1	Williams,P.F		
30.740	820875	7.7	M	88					0.035	B		9	6.1	Y	1	Begbie,M.J.R		
30.740	820876	7.6	M	88	6.5	6	4.8	109	0.08	B		11	5.9	Y	1	Fleet,R.W	D	
30.757	820877				4.7	5		115	0.30	N	8.5	102	6.1	Y	1	Begbie,M.J.R	E	
30.80	820878	8.2:	B		5	5			0.08	R	10	28				Mormil,V		
30.861	820879	8.0	M	88	5	3			0.114	N		25	6.0	Y	2	Villa,M		
30.882	820880	7.9	M	88	8	3			0.030	B		8	6.0	Y	2	Villa,M		
30.885	820881	8.1	S	88	3	0			0.05	B		10	4	C	Y	1	Menichetti,R	

NOTE A Visible with naked eye. Modified Sidgwick method used.

NOTE B Gaps in clouds.

NOTE C Near bright star. Fan-tail.

NOTE D Midpoint on tail: 2.8 deg. at PA 108. End point of tail: 4.8 deg. at PA 109.

NOTE E Tail measurement refers to dust tail only.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
30.740	831272	4	0.08	B		11		5.9	1	Fleet,R.W	A

NOTE A Tail end point at PA 109. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 31 MAY 1986

DATE: 31 MAY 1986

## 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
31.142	820882	7.7	B	88	9	2			0.05	B		10	6.5	Y	1	Hayes Jr, R.H	
31.18	820883	7.0		88	15	3	0.4	100	0.040	B		8	6.0	Y	1	Keen, R	A
31.2389	820884	7.6	S	SAO	4	2			0.130	R	7.1	27	4.4		3	Machholz, D	
31.25	820885	6.1	B	88	14	1			0.035	B		7	6.0	Y	1	Jacobson, E	
31.354	820886	7.0	S	88					0.05	B		10				Seargent, D	
31.354	820887				8	6	2	110	0.08	B		15	6	Y	1	Seargent, D	B
31.448	820888	7.1	S	88			4		0.05	B		7	6.0	Y	14	Garradd, G	
31.47	820889	9.0	B		5	5			0.15	N	8	43	4.0	Y	1	Uda, K	
31.722	820890	7.7	M	88	6.3	6	4.0	110	0.08	B		11	6.0	Y	1	Fleet, R.W	C
31.740	820891	8.0	M	88	5.0	6	0.9	109	0.15	N	4	50	6.0	Y	1	Fleet, R.W	
31.80	820892	8.4	B	E	4	5			0.08	R	10	28				Mormil, V	
31.801	820893	8.1	M	88		5			0.04	B		12	5.5	Y	1	Henshaw, C	
31.838	820894	7.3	S	88	4	3			0.050	B		7	5.6	Y	1	Meozzi, D	
31.994	820895	8.3	B	88		4			0.06	R	15	41	5.0	Y	1	da Silva, L.A.L	

NOTE A Modified Sidgwick method used.

NOTE B Tail length approximate.

NOTE C Midpoint on tail: 2.8 deg. at PA 109. End point of tail: 4.0 deg. at PA 110.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
31.722	831273	4	0.08	B		11		6.0	1	Fleet, R.W	A

NOTE A Tail end point at PA 110. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 1 JUN 1986

DATE: 1 JUN 1986

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
1.016	820896	8.4	S	88		1			0.05	B		20	5.3	Y	1	Onofre D.,D	
1.19	820897	7.0		88					0.040	B		8	5.0	Y	1	Keen,R	A
1.23	820898	6.2	B	88	16	1			0.050	B		7	6.0	Y	1	Jacobson,E	
1.243	820899	8.2	S	112	3	1			0.203	SC	10	50	8	Y	5	Pryal,J	B
1.32	820900	7.5	S	88					0.050	B		7		Y		Jones,A	
1.32	820901				5	4			0.078	R	7.5	30	5.2			Jones,A	
1.32	820902					5	0.15	115	0.317	N	5	86				Jones,A	C
1.406	820903	7.0	S	88					0.05	B		10	6	Y	1	Seargent,D	
1.406	820904						2	108	0.08	B		15				Seargent,D	
1.45	820905	7.3	S	88		5	1.5		0.08	B		15	6.0C	Y	1	Lovejoy,T	D
1.747	820906	7.7	S	88	5.5	4			0.13	R	4	21	5.3	Y	1	Campos,J	
1.764	820907	7.8	M	88	6.5	6	3.9	109	0.08	B		11	6.0	Y	1	Fleet,R.W	
1.81	820908	8.9	B	E	5	4			0.16	N		50				Mormil,V	
1.833	820909	7.4	S	88		2			0.07	B		20	4	Y	1	Tanti,T	E
1.833	820910	7.5	S	88	6	2			0.089	R	5.5	18	5.0C	N	1	Ventura,F	F
1.861	820911	8.2	M	88	5	3			0.114	N		25	4.5	Y	2	Villa,M	

NOTE A Observed during thunderstorm. Modified Sidgwick method used.

NOTE B Small transparent. About 20 deg. above southwest horizon.

NOTE C Diffuse coma, moderate condensation.

NOTE D Broad triple tail.

NOTE E Seeing good, transparency fair. Clouds.

NOTE F Street lights interfere.

SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
1.085	831274	4	0.050	B		10	14	3.5	2	Robinson,P.C	A
1.764	831275	4	0.08	B		11		6.0	1	Fleet,R.W	B

NOTE A Tails at PAs 120, 300 (forward), 205, and 165, all were dimmest near the coma and increased in brightness with increasing distance from coma. All were also picked up with the unaided eye where more than 10 deg. from comet except for that at PA 205 which went to horizon too quickly. Each was also traced out to dozens of degrees length. Ray (misses coma) at PA 110 (388') to 20 (50') to 310 (200'); ray (misses coma) at PA 125 (392') to 200 (36') to 285 (200'). The coma was hardly condensed at all. It looked more like an enhancement in the tails. It was oval along the main tails at PAs 120 and 300.

NOTE B Tail end point at PA 109. (Duration not indicated. Time of observation is assumed to be start time. Ed.)



DATE: 2 JUN 1986

DATE: 2 JUN 1986

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
2.006	820912	8.5	S	88		1			0.05	B		20	5.5	Y	1	Onofre D.,D	
2.020	820913	8.5	S	88		3			0.06	R	15	41	5.0	Y	1	da Silva,L.A.L	
2.114	820914	7.9	S	88	6.5				0.035	B		7	5.8	Y	3	Morrison,W	A
2.114	820915	7.9	S	88	6.5	3			0.06	R	15	36	5.8	Y	3	Morrison,W	
2.19	820916	6.5	B	88	15	0			0.050	B		7	6.0	Y	1	Jacobson,E	
2.20	820917	7.3	M	88			1.5	105	0.05	B		10	5	Y	3	Hale,A	B
2.20	820918	7.2	S	88	12.5	3			0.050	B		10	4.0	Y	7	Morris,C.S	
2.20	820919	7.2	S	88	12.5	2	1.17	115	0.080	B		20	4.0	Y	7	Morris,C.S	
2.354	820920	7.1	S	88					0.05	B		10		Y	1	Seargent,D	
2.717	820921	8.1	M	88		6			0.04	B		12	5.5	Y	1	Henshaw,C	
2.722	820922	8.0	M	88	5.9	6	3.6	109	0.08	B		11	6.0	Y	1	Fleet,R.W	C
2.733	820923	8.2	M	88	5.0	6	1.1	108	0.15	N	4	50	6.0	Y	1	Fleet,R.W	
2.746	820924	8.0	M	88					0.035	B		9	5.9	Y	1	Begbie,M.J.R	
2.755	820925	8.9	M	88	4.0	6		109	0.30	N	8.5	102	5.9	Y	1	Begbie,M.J.R	D
2.80	820926	9	B	E	4	4	0.3	90	0.16	N		50				Mormil,V	E

NOTE A Coma diameter approximate. 0.15 f/5 refr. 31x coma dia. 5', DC = 4, tail 0.20 deg. long, PA = 115 deg.

NOTE B Sky conditions poor; thick haze and possible cirrus. Tail very faint in 10x50 binoculars.

NOTE C Midpoint on tail: 1.3 deg. at PA 109. End point of tail: 3.6 deg. at PA 109.

NOTE D Tail measurement refers to dust tail only.

NOTE E Tail length and PA approximate.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
2.722	831276	4	0.08	B		11		6.0	1	Fleet,R.W	A

NOTE A Tail end point at PA 109. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
2.012	852148	0.050	2.0			3.50	Kodak Tri-X	400/	N	X	23/P		Falsarella,N
2.973	852149	0.050	2.0			3.50	Kodak Tri-X	400/	N	X	24/P		Falsarella,N

DATE: 3 JUN 1986

DATE: 3 JUN 1986

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
3.076	820927	8.7	M	88	5	4			0.254	N	4.5	36	3.9	Y	1	DeYoung,J.A	
3.08	820928	7.2	S	AA	11	1			0.050	B		7				Green,D.W.E	A
3.08	820929	7.3	S	AA	10	3			0.080	B		20				Green,D.W.E	A
3.087	820930	8.1	S	88	3.5	6			0.152	N	5.5	69	5.2T	Y	1	Hudak,D.M	
3.10	820931				6.5	3		120	0.317	N	6	55				Bortle,J.E	
3.10	820932	6.8	S	88	7	2			0.050	B		10	6	Y	1	Bortle,J.E	
3.101	820933	9.8	M	88		2			0.15	N	8	102	3.0CT	Y	1	Allen,E	
3.116	820934	8.2	S	88	3.6	4			0.15	R	5	31	5.8	Y	3	Morrison,W	
3.19	820935	6.6	B	88	9	0			0.050	B		7	6.0	Y	1	Jacobson,E	
3.365	820936	7.1	S	88					0.05	B		10				Seargent,D	
3.365	820937					2		110	0.08	B		15	6.1	Y	1	Seargent,D	
3.486	820938	7.8	S	88		4			0.05	B		7	6.0	Y	14	Garradd,G	
3.733	820939	8.1	M	88	5.2	6	3.5	111	0.08	B		11	5.9	Y	1	Fleet,R.W	
3.743	820940	8.3	M	88	5.5	5	0.7	109	0.15	N	4	50	5.9	Y	1	Fleet,R.W	
3.758	820941	9.1	M	88	3.5	6		96	0.30	N	8.5	102	6.1	Y	1	Begbie,M.J.R	B
3.759	820942	8.2	M	88					0.04	B		12	5.5	Y	1	Renshaw,C	
3.80	820943	8.9	B	E	4	4			0.16	N		50				Mormil,V	A
3.861	820944				4	2			0.114	N		50	5.0	Y	1	Villa,M	
3.89	820945	7.6	S	DCS 13		4			0.050	B		10	6	Y	4	Comello,G	
3.90	820946	7.4	S	88		3			0.080	B		20	6	Y	4	Bouma,R.J	
3.974	820947	8.7	S	88		1			0.05	B		20	5.5	Y	1	Onofre D.,D	

NOTE A Coma diameter approximate.

NOTE B Tail measurement refers to dust tail only.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
3.083	831277	0.83	0.152	N	8	38		5	1	Cuthill,L	A
3.733	831278	4	0.08	B		11		5.9	1	Fleet,R.W	B

NOTE A Coma DC = 6. Tail at PA 75-135. Axis of head at PA 280. The coma has a faint but strong central condensation. Coma size - 3.5'. The tail between PA 75 deg. and 135 deg. is very faint. Magnitude using 10x50 binoculars is estimated to be about 8.5 (Morris method).

NOTE B Tail end point at PA 111. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 4 JUN 1986

DATE: 4 JUN 1986

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	
4.075	820948	8.8	M	88	6	4			0.254	N	4.5	36	3.9	Y	1	DeYoung, J.A		
4.087	820949	8.3	S	88	3.1	5			0.152	N	5.5	69	5.17	Y	1	Hudak, D.M		
4.19	820950	7.3:	S	88	10				0.080	B		20	3.0C	Y	9	Morris, C.S		
4.365	820951	7.1	S	88					0.05	B		10	6	Y	1	Seargent, D	A	
4.365	820952						1	108	0.08	B		15				Seargent, D	B	
4.722	820953	8.0	M	88	5.2	6	3.0	110	0.08	B		11	6.0	Y	1	Fleet, R.W	C	
4.733	820954	8.2	M	88	4.6	5	0.7	106	0.15	N	4	50	6.0	Y	1	Fleet, R.W		
4.733	820955	8.2	M	88					0.04	B		12	6.2	Y	1	Henshaw, C		
4.776	820956	9.2	M	88	3.0	6		96	0.30	N	8.5	102	6.4	Y	1	Begbie, M.J.R	D	
4.826	820957	7.5	S	88	6.5	3			0.07	B		20	4.5	Y	1	Tanti, T	E	
4.87	820958	7.5	S	88	7	4			0.080	B		20	6	T	Y	4	Bouma, R.J	
4.88	820959	7.6	S	DCS 13		4			0.050	B		10	6	Y	4	Comello, G	F	
4.983	820960	8.7	S	88					0.06	R	15	41	4.0	Y	1	da Silva, L.A.L		

NOTE A Close to 6.9 mag. star.

NOTE B Broad tail.

NOTE C Midpoint on tail: 1.6 deg. at PA 111. End point of tail: 3.0 deg. at PA 110.

NOTE D Tail measurement refers to dust tail only.

NOTE E Seeing good, transparency fair. Haze.

NOTE F 0.5 deg. tail seen in 0.203 Schmidt-Cass. at magnification of 50x.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
4.087	831279	0.38	0.318	N	8	75	20	6.0	1	Hathaway, W	
4.094	831280	0.4	0.050	B		10, 22	30	4.5	2	Robinson, P.C	A
4.722	831281	4	0.08	B		11		6.0	1	Fleet, R.W	B

NOTE A Main tail at PA 105; tail at PA 135; detached tail at PA 200 (about 5' to >40'); forward tail at PA 280; tail at PA 315. All tails were brighter with increasing distance from coma and indefinitely long. Tail at PA 80 (less than or equal to 15'). Patch at PA 315 (6.8'); patch was a diffuse patch of haziness on PA 315 tail. The coma looked distinctly triangular in shape. Newtonian 0.152 f/4 also used.

NOTE B Tail end point at PA 110. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
4.105	852150	0.500	3.6	0.140	4.1 x 2.7	30.00	Kodak 2415		Y	S	12/C	1	Chester, G.R	A
4.120	852151	0.500	3.6	0.140	4.1 x 2.7	30.00	Kodak 2415		Y	S	13/C	1	Chester, G.R	B

NOTE A (Observer's image identifier is 12A. Ed.)

NOTE B (Observer's image identifier is 13A. Ed.)

DATE: 5 JUN 1986

DATE: 5 JUN 1986

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
5.20	820961	7.2		SAO, 88	13	2			0.040	B		8	5.5	Y	1	Keen,R	A
5.21	820962	7.2	B	88	6	0			0.050	B		7	6.0	Y	1	Jacobson,E	
5.32	820963	8.2	S	MP-5 23	2.5	4			0.078	R	7.5	30	5.5			Jones,A	B
5.32	820964				1.8	5			0.317	N	5	86				Jones,A	
5.365	820965	7.2	S	88			1	100	0.05	B		10	6	Y	1	Seargent,D	C
5.375	820966	7.4	S	88					0.05	B		10	6	Y	1	Seargent,D	
5.733	820967	7.9	M	88	5.9	6	3.0	111	0.08	B		11	6.0	Y	1	Fleet,R.W	
5.737	820968	8.2	M	88		3			0.04	B		12	6.2	Y	1	Henshaw,C	
5.747	820969	8.1	M	88	5.0	6	0.7	110	0.15	N	4	50	6.0	Y	1	Fleet,R.W	
5.767	820970	8.9	M	88	4.5	6		96	0.30	N	8.5	102	6.5	Y	1	Begbie,M.J.R	D
5.882	820971	7.9	B		3.7	2			0.10	B		14	4.0	Y	1	Hasubick,W	
5.89	820972	7.6	S	88	7	3			0.080	B		20	6	Y	4	Bouma,R.J	
5.89	820973	7.6	S	DCS 13		4			0.050	B		10	6	Y	4	Comello,G	

NOTE A Modified Sidgwick method used.

NOTE B Comet among two stars.

NOTE C Tail broad, faint. PA approximate.

NOTE D Tail measurement refers to dust tail only.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
5.733	831282	4	0.08	B		11		6.0	1	Fleet,R.W	A

NOTE A Tail end point at PA 111. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 6 JUN 1986

DATE: 6 JUN 1986

## 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
6.20	820974	7.0	M	88	14.5	3	0.42	110	0.080	B		20	5.5	Y	16	Morris,C.S	
6.21	820975	7.0	S	88	18	3			0.050	B		10	5.5	Y	16	Morris,C.S	
6.33	820976	8.0	S	MP-5 23					0.045	R	6	13	5.5			Jones,A	
6.33	820977				5	2	0.15	108	0.078	R	7.5	30				Jones,A	
6.33	820978				2.5	4			0.317	N	5	86				Jones,A	
6.708	820979	8.0	M	88	5.6	5	2.5	110	0.08	B		11	6.0	Y	1	Fleet,R.W	
6.715	820980	8.3	M	88	4.6	5	0.8	108	0.15	N	4	50	6.0	Y	1	Fleet,R.W	
6.724	820981	8.2	M	88		3			0.04	B		12	6.2	Y	1	Henshaw,C	
6.740	820982	7.8	S	88	6.0	5			0.13	R	4	21	5.7	Y	1	Campos,J	A
6.749	820983	9.3	M	88	4.5	5		101	0.30	N	8.5	102	6.5	Y	1	Begbie,M.J.R	B
6.813	820984	7.9	S	88	4	2			0.089	R	5.5	18	5.0	N	1	Ventura,F	
6.88	820985	8.0	B	88					0.080	B		20	6	Y	4	Bouma,R.J	
6.88	820986	7.7	S	DCS 13		4			0.050	B		10	6	Y	4	Comello,G	
6.89	820987	7.7	S	88	7	4			0.080	B		20	6	Y	4	Bouma,R.J	
6.89	820988	7.7	S	88		3			0.050	B		10	6	Y	4	Bouma,R.J	

NOTE A No tail seen.

NOTE B Tail measurement refers to dust tail only.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
6.708	831283	4	0.08	B		11		6.0	1	Fleet,R.W	A

NOTE A Tail end point at PA 110. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
6.103	852152	0.305	1.5	0.203	6.8 x 4.5	3.00	Kodak 2415		Y	X	287/P	1	Sabia,J.D	A

NOTE A Anti-tail noted on negative, very short and spike-like. Not seen visually. Photograph made by J. Kamichitis and J.D. Sabia.

DATE: 7 JUN 1986

DATE: 7 JUN 1986

## 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
7.20	820989	7.4		SAO, 88	12	2			0.040	B		8	6.0	Y	1	Keen,R	A
7.20	820990	7.5	M	88					0.05	B		10	6	Y	3	Hale,A	
7.20	820991						0.5	105	0.20	N	6	61	6	Y	3	Hale,A	
7.21	820992	7.2	S	88	16	3			0.050	B		10	6.2	Y	16	Morris,C.S	
7.22	820993	7.2	M	88	10	3	0.42	112	0.080	B		20	6.2	Y	16	Morris,C.S	B
7.23	820994	7.4	M	88	7	4	0.42	112	0.256	N	4.5	45	6.2	Y	16	Morris,C.S	C
7.389	820995	7.9	S	88	7.5	3			0.15	N	8	64		Y	1	Tregaskis,T.B	D
7.413	820996	7.9	S	88		3			0.10	N	6	24		Y	1	Tregaskis,T.B	E
7.440	820997	7.9	S	88		3			0.05	B		10		Y	1	Tregaskis,T.B	F
7.50	820998	7.7	M	88	5	4			0.15	N	5.3	32	6.0	Y	1	Oka,A	
7.758	820999	9.0	M	88	3.5	6		97	0.30	N	8.5	102	6.4	Y	1	Begbie,M.J.R	G
7.88	821000	7.9	S	88	7	2			0.080	B		20	6	Y	4	Bouma,R.J	
7.88	821001	7.9	S	DCS 13		4			0.050	B		10	6	Y	4	Comello,G	
7.89	821002	8.0	S	88					0.050	B		10	6	Y	4	Bouma,R.J	

NOTE A Modified Sidgwick method used.

NOTE B Multiple tails define the shape of the fan tail.

NOTE C Multiple tails define the shape of the fan tail. No central condensation was visible.

NOTE D Clear and windy. (Observer gave limit as approximately 13. Ed.)

NOTE E Clear and windy. (Observer gave limit as approximately 12. Ed.)

NOTE F Patchy cloud. (Observer gave limit as approximately 10. Ed.)

NOTE G Tail measurement refers to dust tail only.

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
7.232	852153	0.500	3.6	0.140	4.1 x 2.7	5.00	3M 1000	1000/	N	O	4/N	7	Edberg,S.J	
7.237	852154	0.500	3.6	0.140	4.1 x 2.7	10.00	3M 1000	1000/	N	O	5/N	7	Edberg,S.J	
7.245	852155	0.260	5.2		7.9 x 5.3	1.00	3M 1000	1000/	N	O	6/N	7	Edberg,S.J	
7.248	852156	0.260	5.2		7.9 x 5.3	5.00	3M 1000	1000/	N	O	7/N	7	Edberg,S.J	A
7.422	852157	0.135	3.5		15.2 x 10.2	10.00	Ektachr.400		N	X	40/S	1	Tregaskis,T.B	B

NOTE A Exposure time uncertain.

NOTE B Push processed to 800 ASA.

DATE: 8 JUN 1986

DATE: 8 JUN 1986

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
8.000	821003	9.0:		88		2			0.06	R	15	41	5.0	Y	1	da Silva,L.A.L	A
8.20	821004	7.2	M	88	14.5	3			0.050	B		10	6.0	Y	7	Morris,C.S	
8.20	821005	7.2	M	88	9	3	0.42	76	0.080	B		20	6.0	Y	7	Morris,C.S	B
8.21	821006				6.0	5	0.42	76	0.256	N	4.5	45	6.0	Y	7	Morris,C.S	C
8.2250	821007	7.8	S	DCS	4	5			0.254	N		32	5.4		12	Machholz,D	
8.2250	821008	7.8	S	DCS	4	5			0.254	N	3.8	32	5.4		12	Machholz,D	
8.375	821009	7.5	S	88					0.05	B		10	6.2	Y	1	Seargent,D	
8.389	821010	7.8	S	88					0.05	B		7	6.0C	Y	17	Garradd,G	
8.47	821011	8.2	M	AAVSO	8	5			0.065	R	8	16	4.5	Y	1	Nakamura,A	
8.47	821012	8.1	S	AAVSO	6.5	6			0.20	N	5.6	35	4.5	Y	1	Nakamura,A	
8.476	821013	7.9	M	88	2.5	4			0.1	N	10	56	4.0	Y	1	Ichikawa,K	
8.490	821014	8.8	M	88	3	3			0.10	N	10	55	4.0C	Y	1	Kato,T	
8.49	821015	8.3	B		8	6			0.15	N	8	43	4.5	Y	1	Uda,K	
8.50	821016	7.8	S	AAVSO	4	2			0.13	N	6.3	44	4.0	Y	1	Hayashi,A	
8.50	821017	7.9	M	88	4	4			0.15	N	5.3	32	5.5	Y	1	Oka,A	
8.501	821018	8.4	S	88	4.3	3			0.15	N	6	28	2.5	N	1	Kanai,K	
8.507	821019	8.2	M	88	6.5	5			0.16	N	6.3	31	5.5	Y	4	Mitsuma,S	
8.826	821020	7.7	S	88	5.4	4			0.07	B		20	5.5	Y	1	Tanti,T	D
8.830	821021	8.7	S	CZ	2	4			0.08	B		10	5.1T	Y	1	Kroch,F	E
8.875	821022	7.9	S	88	6.0	3			0.05	B		7	6.0	Y	4	Haver,R	
8.88	821023	7.9	S	DCS 13		4			0.050	B		10	6	Y	4	Comello,G	
8.89	821024	7.8	S	88	7.5	3			0.080	B		20	6	Y	4	Bouma,R.J	
8.89	821025	7.8	S	88		2			0.050	B		10	6	Y	4	Bouma,R.J	

NOTE A Comet very faint.

NOTE B Multiple tails define the shape of the fan tail. Stellar condensation was obvious.

NOTE C Multiple tails define the shape of the fan tail. Nuclear outburst! Stellar condensation (m2 = 9.5:) was present. Even at 222x condensation was stellar.

NOTE D Seeing good, transparency excellent. Wind.

NOTE E Estimated magnitude uncertainty +/-0.3. Stellar appearance, hardly visible.

DATE: 9 JUN 1986

DATE: 9 JUN 1986

## 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
9.08	821026	7.4	S	AA	7	1			0.080	B		20				Green,D.W.E	A
9.09	821027	7.9	S	88	3.5	4			0.317	N	6	68				Bortle,J.E	
9.09	821028	7.9	M	AA					0.229	R	12	86				Green,D.W.E	
9.09	821029	7.1	S	88	9	1			0.050	B		10	6	Y	1	Bortle,J.E	
9.09	821030	7.4	S	88	7	3			0.080	B		20				Bortle,J.E	
9.09	821031	8.1	S	AA	3	4			0.229	R	12	86				Green,D.W.E	A
9.101	821032	8.4	S	88	2.2	6			0.203	N	6	101	5.1	Y	1	Hudak,D.M	
9.119	821033	8.2	S	88	4.5	3			0.15	R	5	31	5.2	Y	3	Morrison,W	B
9.139	821034	8.5	S	88	5	1			0.15	N	8	30	5.5	Y	2	Hays Jr,R.H	C
9.21	821035	7.4	S	88	11	4	1.25	95	0.050	B		10	6.0	Y	7	Morris,C.S	D
9.22	821036	7.4	M	88	7	4	1.75	68	0.080	B		20	6.0	Y	7	Morris,C.S	D
9.23	821037				3.6	5	0.5	110	0.256	N	4.5	45	6.0	Y	7	Morris,C.S	E
9.23	821038								0.256	N	4.5	156	6.0	Y	7	Morris,C.S	F
9.2542	821039	7.5	M	88	7	5			0.05	B		7	6.3	Y	3	Cook,A.J	G
9.2667	821040				4	6			0.32	N	4.8	64	6.3	Y	3	Cook,A.J	
9.410	821041	7.7	S	88			1.5		0.05	B		7	6.5	Y	2	Garradd,G	
9.413	821042						1.5		0.31	N	5.4	129				Garradd,G	
9.417	821043	7.6	S	88	11	3			0.05	B		10	6	Y	1	Seargent,D	
9.417	821044								0.08	B		15				Seargent,D	
9.47	821045	8.2	M	AAVSO	7	4		110	0.065	R	8	16	4.5	Y	5	Nakamura,A	
9.47	821046	8.2	S	AAVSO	6	4			0.20	N	5.6	35	4.5	Y	5	Nakamura,A	
9.476	821047	8.0	M	88	3.0	3			0.1	N	10	40	4.0	Y	1	Ichikawa,K	
9.712	821048	8.0	M	88	4.8	5	2.6	110	0.08	B		11	6.1	Y	1	Fleet,R.W	
9.729	821049	8.2	S	88	5	4			0.13	R	4	21	5.9	Y	1	Campos,J	
9.736	821050	8.2	M	88	4.6	6	0.8	110	0.15	N	4	50	6.0	Y	1	Fleet,R.W	
9.745	821051	9.2	M	88	3.6	6		98	0.30	N	8.5	102	6.4	Y	1	Begbie,M.J.R	H
9.753	821052	8.3	M	88					0.04	B		12	6.2	Y	1	Benshaw,C	
9.823	821053	8.0	S	88	5.1	4			0.07	B		20	5	Y	1	Tanti,T	
9.870	821054	7.7	S		2				0.05	B		7	6.3	Y	4	Haver,R	I
9.870	821055	7.9	S		7.0	2			0.08	B		15	6.3	Y	4	Haver,R	
9.878	821056								0.10	B		14	4.0	Y	1	Hasubick,W	J
9.88	821057	7.9	S	88		2			0.080	B		20	4.5	Y	4	Bouma,R.J	
9.89	821058	8.2	S	DCS 13		3			0.050	B		10	4.5	Y	4	Comello,G	
9.90	821059	8.4	B	88	5.5	3			0.150	N	5	25	5.5	Y	2	Merlin,J.-C	
9.994	821060	> 9.0		88		2			0.06	R	15	41	4.5	Y	1	da Silva,L.A.L	X

NOTE A Coma diameter approximate.

NOTE B Altitude 15 deg.

NOTE C S Sex c AAVSO chart also used.

NOTE D Multiple tails define the shape of the fan tail.

NOTE E Sunward tail was diffuse and very faint.

NOTE F Condensation observed on 860608.21 is no longer stellar. Instead there is a diffuse 0.3' disk.

NOTE G Tail north boundary 1.15 deg. at PA 96, south boundary 1.10 deg. at PA 112.

NOTE H Tail measurement refers to dust tail only.

NOTE I Seeing good, transparency good. Artificial light. Low.

NOTE J Very weakly visible. (Translated by IHW staff. Ed.)

NOTE K Comet very faint. DC uncertain.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
9.215	831284	3	0.050	B		7	10	6.3	3	Cook,A.J	
9.712	831285	4	0.08	B		11		6.1	1	Fleet,R.W	A
9.885	831286		0.356	SC	11	200				Soc. Astro. de France B	

NOTE A Tail end point at PA 110. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

NOTE B Drawing made by M. Verdenet. (Duration not indicated. Time of observation is assumed to be start time. Drawing data inferred from magnitude report form. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
9.211	852158	0.260	5.2		7.9 x 5.3	5.00	3M 1000	1000/	N	O	8/N	7	Edberg,S.J	
9.214	852159	2.306	5	0.45	0.9 x 0.6	25.00	Kodak Tri-X		N	M	31/P	1	Webb,R	A
9.216	852160	0.260	5.2		7.9 x 5.3	6.33	3M 1000	1000/	N	O	9/N	7	Edberg,S.J	
9.224	852161	0.260	5.2		7.9 x 5.3	10.00	3M 1000	1000/	N	O	10/N	7	Edberg,S.J	B
9.237	852162	0.200	4		10.3 x 6.9	10.00	3M 1000	1000/	N	O	11/N	7	Edberg,S.J	
9.244	852163	0.200	4		10.3 x 6.9	5.00	3M 1000	1000/	N	O	12/N	7	Edberg,S.J	
9.269	852164	0.300	1.5	0.200	6.9 x 4.6	5.00	Kodak 2415		Y	S	30/P	1	Yen,B	C

NOTE A Film pushed to ASA 1000. Standard 3 min.-3 min. processing.

NOTE B Exposure time approximate.

NOTE C (Observer's image identifier is 24. Ed.) Instrument is Schmidt camera.



DATE: 10 JUN 1986

DATE: 10 JUN 1986

## 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
10.08	821061	7.2	S	AA	8	4			0.080	B		20				Green,D.W.E	A
10.09	821062	8.0	S		5	2			0.203	N	7	54	4.0	N	1	Harrington,P	
10.09	821063	7.2	S	AA	9	1			0.050	B		7				Green,D.W.E	A
10.09	821064	7.3	S	88	7	2			0.080	B		20	6.5	Y	1	Bortle,J.E	
10.09	821065	7.9	S	88	5.3	4			0.317	N	6	55				Bortle,J.E	
10.097	821066	8.5	S	88					0.203	N	6	101	5.1T	Y	1	Hudak,D.M	
10.21	821067	7.5	S	88	11	3	2.0	95	0.050	B		10	6.0	Y	7	Morris,C.S	B
10.22	821068	7.4	M	88	9	3			0.080	B		20	6.0	Y	7	Morris,C.S	
10.23	821069				4.3		0.33	105	0.256	N	4.5	45	6.0	Y	7	Morris,C.S	C
10.23	821070								0.256	N	4.5	156	6.0	Y	7	Morris,C.S	D
10.45	821071	7.8	S	88		4	1.5		0.08	B		15	6.0C		1	Lovejoy,T	E
10.48	821072	9.5	M			3			0.31	N		55	4.0T	Y	2	Suzuki,K	F
10.718	821073	8.4	M	88					0.035	B		9	6.7	Y	1	Begbie,M.J.R	G
10.731	821074	9.3	M	88	4.4	6		94	0.30	N	8.5	102	6.7	Y	1	Begbie,M.J.R	H
10.736	821075	8.0	M	88	4.8	6	2.4	110	0.08	B		11	6.0	Y	1	Fleet,R.W	
10.747	821076	8.3	M	88	5.7	6	0.7	109	0.15	N	4	50	6.0	Y	1	Fleet,R.W	
10.771	821077	8.3	M	88					0.04	B		12	6.2	Y	1	Henshaw,C	
10.833	821078	8.1	S	88	4	2			0.089	R	5.5	18	5.1	N	1	Ventura,F	

NOTE A Coma diameter approximate.

NOTE B Multiple tails define the shape of the fan tail.

NOTE C The sunward tail was very faint.

NOTE D In the coma, a stellar condensation (m2 = 10.3;) was surrounded by a small disk of material (perhaps 0.5' diameter) offset to the north relative to the condensation. The condensation/disk combination was off center toward the south within the coma.

NOTE E Haze. PA 115 to 142.

NOTE F Cloud.

NOTE G Power cut - complete darkness.

NOTE H Power cut - complete darkness. Tail measurement refers to dust tail only.

## SUB-NETWORK: DRAWING

Date(UT)	ACN#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
10.125	831287	0.8	0.152	N	4	30	20	4.0	3	Robinson,P.C	A
10.736	831288	4	0.08	B		11		6.0	1	Fleet,R.W	B

NOTE A Main tail at PA 100 to 115; tail at PA 155-170; tail at PA 210; forward tail at PA 285; tail at PA 345; ray (misses coma) at PA 190 (64') to 300 (102'). The coma was slightly condensed. Tail at PA 155-170 seemed to join tail at PA 345 and the two were wider than the coma at the coma. "Tail" (ray) at PA 190-300 missed the coma, and like all other tails was very long. Another E-W tail passed north of the top of the drawing parallel to tails at PA 100-115 and PA 285.

NOTE B Tail end point at PA 110. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 11 JUN 1986

DATE: 11 JUN 1986

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
11.19	821079	7.5		SAO, 88	10	1			0.040	B		8	5.5	Y	1	Keen,R	A
11.19	821080	7.5	M	88			1	110	0.05	B		10	6	Y	3	Hale,A	
11.19	821081						1	110	0.20	N	6	61	6	Y	3	Hale,A	
11.20	821082	7.3	S	88	14.5	3	1.83	108	0.050	B		10	5.5	Y	7	Morris,C.S	B
11.21	821083	7.3	M	88	9	3			0.080	B		20	5.5	Y	7	Morris,C.S	
11.22	821084	7.9	M	88	4.5	4			0.256	N	4.5	45	5.5	Y	7	Morris,C.S	C
11.22	821085				4.5				0.256	N	4.5	156	5.5	Y	7	Morris,C.S	D
11.323	821086	8.2	B	88		3			0.050	B		7	5.3	Y	3	Krisciunas,K	
11.40	821087	8.5	S	MP-5 23	4	2			0.078	R	7.5	30	5.2			Jones,A	
11.40	821088				2.5	4			0.317	N	5	86				Jones,A	
11.48	821089	7.6	S	AAVSO	5	3			0.13	N	6.3	44	4.5M	Y	1	Hayashi,A	
11.497	821090	8.5	M	88					0.16	N	6.3	31	3.5CM	N	1	Mitsuma,S	
11.726	821091	8.2	M	88	5.2	6	2.1	109	0.08	B		11	5.9	Y	1	Fleet,R.W	
11.740	821092	8.4	M	88	5.5	6	0.6	112	0.15	N	4	50	5.9	Y	1	Fleet,R.W	
11.746	821093	9.7	M	88	4.0	5		105	0.30	N	8.5	102	6.2M	Y	1	Begbie,M.J.R	E
11.779	821094	8.4	M	88		8			0.04	B		12	5.5	Y	1	Henshaw,C	
11.823	821095	8.2	S	88	4.6	2			0.07	B		20	5	Y	1	Tanti,T	F

NOTE A Modified Sidgwick method used.

NOTE B Multiple tails define the shape of the fan tail.

NOTE C Sunward tail was suspected.

NOTE D Coma had disk of material (dia. = 0.8'), but no stellar condensation.

NOTE E Tail measurement refers to dust tail only.

NOTE F Seeing good, transparency excellent. Moon.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
11.726	831289	4	0.08	B		11		5.9	1	Fleet,R.W	A

NOTE A Tail end point at PA 109. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 12 JUN 1986

DATE: 12 JUN 1986

## 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
12.19	821096	7.6		SAO, 88	10	1			0.040	B		8	6.0	Y	1	Keen,R	A
12.19	821097	7.4	S	88	9	3	1.33	108	0.080	B		20	5.0	Y	7	Morris,C.S	
12.20	821098	8.0	M	SAO, 88			0.3	105	0.32	N	4	33	6.0	Y	1	Keen,R	
12.20	821099	7.3	S	88	14.5	3			0.050	B		10	5.0	Y	7	Morris,C.S	
12.2292	821100	7.9	M	88	12	4			0.05	B		7	6.0	Y	3	Cook,A.J	
12.705	821101	8.2	M	88	4.8	5	1.8	111	0.08	B		11	5.7M	Y	1	Fleet,R.W	
12.715	821102	8.3	M	88	5.0	6	0.5	108	0.15	N	4	50	5.7M	Y	1	Fleet,R.W	
12.733	821103	8.4	M	88					0.04	B		12	5.5	N	1	Henshaw,C	B
12.740	821104	9.5	M	88	3.2	6		101	0.30	N	8.5	102	6.1M	Y	1	Begbie,M.J.R	C
12.837	821105	8.7	S	88		2			0.203	SC	10	80	4	Y	1	Tanti,T	D

NOTE A Modified Sidgwick method used.

NOTE B Moon.

NOTE C Tail measurement refers to dust tail only.

NOTE D Seeing good, transparency good. Moon. Wind.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
12.231	831290	3	0.050	B		7	5	6.0	3	Cook,A.J	A
12.705	831291	4	0.08	B		11		5.7	1	Fleet,R.W	B

NOTE A Some interference from light of crescent moon.

NOTE B Tail end point at PA 111. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

## SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
12.233	852165	3.20	7	0.457	0.6 x 0.4	10.00	Kodak 098		N		039/P	1	Royer,R	A

NOTE A Wr. 4 filter used. Drive slipped during exposure.

DATE: 13 JUN 1986

DATE: 13 JUN 1986

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
13.19	821106	7.7		SAO, 88	12	1			0.040	B		8	5.5	Y	1	Keen,R	A
13.21	821107	7.5	B	88	12	0			0.050	B		10	5.2M	Y	1	Jacobson,E	
13.715	821108	8.3	S	88	5	5			0.13	R	4	21	4.8	Y	1	Campos,J	B
13.741	821109	9.6	M	88	3.0	5		102	0.30	N	8.5	102	6.1M	Y	1	Begbie,M.J.R	C
13.743	821110	8.3	M	88	5.2	5	1.5	106	0.08	B		11	5.6M	Y	1	Fleet,R.W	
13.753	821111	8.6	M	88	4.6	5	0.3	108	0.15	N	4	50	5.5M	Y	1	Fleet,R.W	
13.819	821112	8.7	S	88	2.2	2			0.203	SC	10	80	4	Y	1	Tanti,T	D

NOTE A Modified Sidgwick method used.

NOTE B Some moonlight.

NOTE C Tail measurement refers to dust tail only.

NOTE D Seeing good, transparency excellent. Moon.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)	Notes
13.743	831292	4	0.08	B		11		5.6	1	Fleet,R.W	A

NOTE A Tail end point at PA 106. Moonlight. (Duration not indicated. Time of observation is assumed to be start time. Ed.)

DATE: 14 JUN 1986

DATE: 14 JUN 1986

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)
14.708	821113	8.5	M	88	3.7	5			0.08	B		11	4.8M	Y	1	Fleet,R.W
14.728	821114	9.7	M	88	2.5	6			0.30	N	8.5	102	5.6M	Y	1	Begbie,M.J.R

DATE: 15 JUN 1986

DATE: 15 JUN 1986

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
15.09	821115	6.8:	S	AA	8	1			0.080	B		20				Green,D.W.E	A
15.34	821116	9.2	S	MP-5 24					0.078	R	7.5	30	5.1			Jones,A	B
15.34	821117	9.5	S	MP-5 24	2	3			0.317	N	5	86				Jones,A	
15.720	821118	9.8	M	88	2.5	5			0.30	N	8.5	102	5.6M	Y	1	Begbie,M.J.R	

NOTE A Coma diameter approximate.

NOTE B Moon 8 days. Comet a very faint patch.

DATE: 16 JUN 1986

DATE: 16 JUN 1986

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
16.33	821119	9.5	S	MP-5 24	1	4			0.317	N	5	86	4.5			Jones,A	A

NOTE A Coma diameter is lower limit. Moon 9 days.

DATE: 17 JUN 1986

DATE: 17 JUN 1986

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
17.09	821120	8.5:	S	AA	2	1			0.229	R	12	86				Green,D.W.E	A
17.727	821121	9.8	M	S SEX		5			0.30	N	8.5	102	5.0M	Y	1	Begbie,M.J.R	

NOTE A Coma diameter approximate.



DATE: 18 JUN 1986

DATE: 18 JUN 1986

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
18.08	821122	7.8:	S	AA	2.5	1			0.229	R	12	86				Green,D.W.E	A
18.354	821123	8.0	S	88				110	0.08	B		15		N	1	Seargent,D	B
18.815	821124	9.8	M	S SEX	2.0	5			0.30	N	8.5	102	5.0M	Y	1	Begbie,M.J.R	

NOTE A Coma diameter approximate.

NOTE B Moon.

DATE: 19 JUN 1986

DATE: 19 JUN 1986

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)
19.19	821125	7.4	B	88	17	1			0.050	B		10	2.9M	Y	1	Jacobson,E
19.726	821126	9.8	M	S SEX	2.7	5			0.30	N	8.5	102	4.8M	Y	1	Begbie,M.J.R

DATE: 20 JUN 1986

DATE: 20 JUN 1986

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)
20.20	821127	7.7	B	88	12	0			0.050	B		10	2.8M	Y	1	Jacobson,E

DATE: 22 JUN 1986

DATE: 22 JUN 1986

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
22.38	821128	10	S	MP-5 23					0.317	N	5	86	3.6			Jones,A	A
22.694	821129	9.2	M	88	2.6	4			0.08	B		11	4.5M	Y	1	Fleet,R.W	
22.708	821130	9.6	M	88	1.9	3			0.15	N	4	50	4.4M	Y	1	Fleet,R.W	
22.722	821131	10.0	M		1.6	6			0.35	N	5.5	100	4.4M	Y	1	Fleet,R.W	B

NOTE A Moon 15 days. Very faint path glimpsed.

NOTE B Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 23 JUN 1986

DATE: 23 JUN 1986

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
23.08	821132	8.9:	S	AA	2	1			0.203	N	6	49				Green,D.W.E	A
23.17	821133	9.0	S	SAO, 88	6	1			0.32	N	4	33	4.0	Y	1	Keen,R	B
23.21	821134	7.8	B	88	6	0			0.050	B		10	2.7M	Y	1	Jacobson,E	C
23.351	821135	8.1	S	88					0.08	B		15		Y	1	Seargent,D	D

NOTE A Coma diameter approximate.

NOTE B Full moon.

NOTE C Low altitude.

NOTE D Some light from moon.

DATE: 24 JUN 1986

DATE: 24 JUN 1986

## 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
24.20	821136	7.9	S	SAO	8	2	0.5	103	0.080	B		20	5.5	Y	7	Morris, C.S	
24.20	821137	7.8	S	SAO	11	2			0.050	B		10	5.5	Y	7	Morris, C.S	
24.20	821138	8.4	M	SAO	5.6	3			0.256	N	4.5	45	5.5	Y	7	Morris, C.S	
24.21	821139	7.9	B	88	7	0			0.050	B		10	4.8M	Y	1	Jacobson, E	A
24.2153	821140	8.5	M	88	12	4			0.05	B		7	6.0	Y	3	Cook, A.J	
24.361	821141	8.2	S	88					0.08	B		15		Y	1	Seargent, D	
24.708	821142	8.9	M		3.7	6	0.9	107	0.08	B		11	6.1	Y	1	Fleet, R.W	B
24.719	821143	9.4	M		3.6	6	0.4	105	0.15	N	4	50	6.1	Y	1	Fleet, R.W	B
24.721	821144	9.9	M	S SEX	3.0	4		97	0.30	N	8.5	102	6.2	Y	1	Begbie, M.J.R	C
24.726	821145	10.0	M		3.2	6	0.5	110	0.35	N	5.5	100	6.0	Y	1	Fleet, R.W	B

NOTE A Low altitude.

NOTE B Comparison star magnitudes derived from S Sex and SX Leo charts.

NOTE C Tail measurement refers to dust tail only.

## SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)
24.217	831293	3	0.050	B		7	5	6.0	3	Cook, A.J

DATE: 25 JUN 1986

DATE: 25 JUN 1986

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
25.09	821146	8.9	S	SAO	2.5	1			0.203	N	6	68				Green,D.W.E	A
25.20	821147	7.9	S	88					0.20	N	6	61	5.5	Y	3	Hale,A	B
25.21	821148	7.6	B	88	9	2			0.050	B		10	5.4M	Y	1	Jacobson,E	C
25.2139	821149	9.1	S	AA	5	2			0.080	B		20	5.0		1	Machholz,D	D
25.2153	821150	9.0	S	AA	5	3			0.254	N	3.8	32	5.0		1	Machholz,D	E
25.41	821151	8.4	S	88	4	3			0.20	N	6	50	6.0C	Y	1	Lovejoy,T	F
25.761	821152	9.8	M	S SEX	2.2	5		96	0.30	N	8.5	102	6.2	Y	1	Begbie,M.J.R	G
25.771	821153	10.3	M		3.2	6	0.4	112	0.35	N	5.5	100	5.5	Y	1	Fleet,R.W	H
25.774	821154	9.8	M		3.0	5	0.3	112	0.15	N	4	50	5.5	Y	1	Fleet,R.W	H
25.778	821155	9.0	M		4.4	3			0.08	B		11	5.3	Y	1	Fleet,R.W	H

NOTE A Coma diameter approximate.

NOTE B Comet next to 7th magnitude star which made observation difficult. Also some interference from low altitude. The comet could just barely be seen with 10x50 binoculars - this was the last binocular sighting.

NOTE C Low altitude. Small condensation could have been occulted star.

NOTE D At the time of observation, the comet's altitude was +13 deg. and the sun's altitude was -14 deg.

NOTE E At the time of observation, the comet's altitude was +12 deg. and the sun's altitude was -15 deg.

NOTE F Low contrast. Haze.

NOTE G Tail measurement refers to dust tail only.

NOTE H Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 26 JUN 1986

DATE: 26 JUN 1986

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
26.344	821156	8.2	S	88	10	4	0.5		0.08	B		15	6.1	Y	1	Seargent,D	A
26.431	821157	9.5	S	88		2			0.15	N	8	50	5.0	Y	1	Williams,P.F	
26.469	821158	8.0	M	88	2.7	3			0.1	N	10	40	4.5	Y	1	Ichikawa,K	
26.476	821159	10.3	M	88	3	2			0.16	N	6.3	80	4.5T	Y	4	Mitsuma,S	
26.479	821160	10.1	M	88	3	1			0.16	N	6.3	31	4.5T	Y	4	Mitsuma,S	
26.48	821161	9.7	S	AAVSO	2				0.20	N	5.6	65	4.0	Y	5	Nakamura,A	
26.708	821162	9.6	M	S SEX	3.0	5		94	0.30	N	8.5	102	6.2	Y	1	Begbie,M.J.R	B
26.729	821163	9.7	M		3.6	6	0.5	109	0.15	N	4	50	6.0	Y	1	Fleet,R.W	C
26.740	821164	9.1	M		3.7	5	0.7	110	0.08	B		11	5.9	Y	1	Fleet,R.W	C
26.747	821165	10.1	M		3.4	6	0.5	110	0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	C

NOTE A PA 90 to 100.

NOTE B Tail measurement refers to dust tail only.

NOTE C Comparison star magnitudes derived from S Sex and SX Leo charts.



DATE: 27 JUN 1986

DATE: 27 JUN 1986

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
27.701	821166	9.1	M		4.1	5	0.3	110	0.08	B		11	6.0	Y	1	Fleet,R.W	A
27.715	821167	9.4	M		3.6	6	0.3	111	0.15	N	4	50	6.0	Y	1	Fleet,R.W	A
27.719	821168	9.9	M		3.4	6	0.4	111	0.35	N	5.5	100	6.0	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 28 JUN 1986

DATE: 28 JUN 1986

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
28.51	821169	7.7	S	DCS	7	5			0.25	N	5	62	5.8			Clark, M.L	
28.699	821170	9.6	M	S SEX	3.0	5		92	0.30	N	8.5	102	6.4	Y	1	Begbie, M.J.R	A
28.712	821171	9.1	M		4.1	6	0.3	110	0.08	B		11	6.0	Y	1	Fleet, R.W	B
28.726	821172	9.4	M		3.6	6	0.3	111	0.15	N	4	50	6.0	Y	1	Fleet, R.W	B
28.733	821173	9.9	M		3.4	6	0.4	111	0.35	N	5.5	100	6.0	Y	1	Fleet, R.W	B
28.736	821174	10.1	S	S&X SEX	3	4			0.20	N	7	35	5.5	Y	2	Campos, J	

NOTE A Tail measurement refers to dust tail only.

NOTE B Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 29 JUN 1986

DATE: 29 JUN 1986

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
29.20	821175	8.2	S	SAO	8	2			0.080	B		20	4.5	Y	7	Morris,C.S	
29.20	821176	8.6	M	SAO	5.6	3			0.256	N	4.5	45	4.5	Y	7	Morris,C.S	
29.2243	821177	9.5	S	AA	3	1			0.254	N	3.8	32	3.5		1	Machholz,D	A
29.347	821178	8.3	S	88					0.08	B		15	6.1	Y	1	Seargent,D	
29.708	821179	9.0	M		3.7	5	0.6	109	0.08	B		11	6.0	Y	1	Fleet,R.W	B
29.731	821180	9.6	M	S SEX	3.0	6		110	0.30	N	8.5	102	6.1	Y	1	Begbie,M.J.R	C
29.733	821181	9.6	M		3.3	6	0.2	112	0.15	N	4	50	5.9	Y	1	Fleet,R.W	B
29.740	821182	9.8	M		3.0	6	0.4	108	0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	B

NOTE A At the time of observation, the comet's altitude was +6 deg. and the sun's altitude was -17 deg.

NOTE B Comparison star magnitudes derived from S Sex and SX Leo charts.

NOTE C Tail measurement refers to dust tail only.

DATE: 30 JUN 1986

DATE: 30 JUN 1986

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
30.19	821183	8.1	S	SAO	8	2			0.080	B		20	5.0	Y	7	Morris,C.S	
30.19	821184	8.0	S	SAO	11	1			0.050	B		10	5.0	Y	7	Morris,C.S	
30.20	821185	8.6	M	SAO	5.0	3			0.256	N	4.5	45	5.0	Y	7	Morris,C.S	
30.2042	821186	8.5	M	S&X SEX	5	3			0.05	B		7	6.0	Y	3	Cook,A.J	
30.2083	821187	8.5	M	S&X SEX	8	4			0.14	SN		52	6.0	Y	3	Cook,A.J	
30.2153	821188	9.5	S	AA	4	2			0.254	N	3.8	32	3.2	Y	1	Machholz,D	A
30.32	821189	10.5	S	S SEX	1	2			0.317	N	5	86	4.5	Y		Jones,A	B
30.708	821190	9.0	M		4.4	6	0.5	110	0.08	B		11	6.0	Y	1	Fleet,R.W	C
30.719	821191	9.9	M		3.1	6	0.4	107	0.35	N	5.5	100	6.0	Y	1	Fleet,R.W	C
30.729	821192	9.6	M		3.3	6	0.2	108	0.15	N	4	50	5.9	Y	1	Fleet,R.W	C
30.760	821193	9.7	M	S SEX	2.7	6		97	0.30	N	8.5	102	6.2	Y	1	Begbie,M.J.R	D

NOTE A At the time of observation, the comet's altitude was +9 deg. and the sun's altitude was -15 deg.

NOTE B Coma diameter is lower limit. Hazy sky.

NOTE C Comparison star magnitudes derived from S Sex and SX Leo charts.

NOTE D Tail measurement refers to dust tail only.

SUB-NETWORK: DRAWING

Date(UT)	AON#	Scale	Ap	Ins	f/	Pwr(s)	DurM	Lim	Site	Observer(s)
30.206	831294	3.1	0.050	B		7	6	6.0	3	Cook,A.J

DATE: 1 JUL 1986

DATE: 1 JUL 1986

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	I/	Pwr	Lim	DA	Site	Observer(s)	Notes
1.20	821194	8.2	S	SAO	8	2			0.080	B		20	5.0	Y	7	Morris,C.S	
1.20	821195	8.1	S	SAO	11	1			0.050	B		10	5.0	Y	7	Morris,C.S	
1.30	821196	10.3	S	AA,SSEX	2	3			0.317	N	5	86	5.2			Jones,A	A
1.705	821197	9.2	M		3.7	5	0.6	111	0.08	B		11	6.0	Y	1	Fleet,R.W	B
1.715	821198	9.5	M		3.5	6	0.2	111	0.15	N	4	50	6.0	Y	1	Fleet,R.W	B
1.722	821199	9.8	M		3.4	6	0.4	108	0.35	N	5.5	100	5.9	Y	1	Fleet,R.W	B
1.724	821200	9.8	M	S SEX	3.0	5			0.30	N	8.5	102	6.2	Y	1	Begbie,M.J.R	

NOTE A Fair sky.

NOTE B Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 2 JUL 1986

DATE: 2 JUL 1986

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
2.18	821201	9.0	S	SAO, 88	5	1			0.32	N	4	33	4.0	Y	1	Keen,R	
2.18	821202	9.1	S	SAO, 88	4	1			0.32	N	4	66	4.0	Y	1	Keen,R	
2.2132	821203	9.5	S	SAO	3	2			0.254	N	3.8	64	2.5		1	Machholz,D	A
2.31	821204	10.4	S	S SEX					0.317	N	5	86	5.0			Jones,A	
2.700	821205	9.1	M		3.7	5	0.5	111	0.08	B		11	5.9	Y	1	Fleet,R.W	B
2.712	821206	9.9	M		3.0	6	0.3	108	0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	B

NOTE A At the time of observation the comet's altitude was +8 deg. and the sun's altitude was -14 deg.

NOTE B Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 3 JUL 1986

DATE: 3 JUL 1986

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
3.19	821207	8.3	S	SAO	7	2			0.080	B		20	4.0	Y	7	Morris,C.S	
3.20	821208	8.7	S	SAO	5.6	2			0.256	N	4.5	45	4.0	Y	7	Morris,C.S	
3.20	821209	8.2:	S	SAO	8	1			0.050	B		10	4.0	Y	7	Morris,C.S	
3.31	821210	10.4	S	S SEX	2	2			0.317	N	5	86	5.0			Jones,A	
3.365	821211	8.5:	S	88					0.08	B		15		Y	1	Seargent,D	A
3.705	821212	10.0	M		3.1	6	0.3	108	0.35	N	5.5	100	5.7	Y	1	Fleet,R.W	B
3.745	821213	9.9	M	S SEX	2.5	4			0.30	N	8.5	102	6.2	Y	1	Begbie,M.J.R	

NOTE A High cloud.

NOTE B Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 4 JUL 1986

DATE: 4 JUL 1986

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
4.31	821214	10.4	S	S SEX	2	2			0.317	N	5	86	5.1			Jones,A	
4.722	821215	9.7	M		3.2	5			0.15	N	4	50	5.7	Y	6	Fleet,R.W	A
4.726	821216	9.1	M		4.4	3			0.08	B		11	5.5	Y	6	Fleet,R.W	A
4.743	821217	10.0	M		2.7	6	0.1	111	0.30	N	8	120	5.5	Y	6	Fleet,R.W	A
4.749	821218	10.1	M	S SEX		5			0.30	N	8.5	102	6.5	Y	1	Begbie,M.J.R	

NOTE A Comparison star magnitudes derived from S Sex and SX Leo charts.



DATE: 5 JUL 1986

DATE: 5 JUL 1986

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
5.2111	821219	9.5	S	SAO	3	2			0.254	N	3.8	64	2.2		1	Machholz,D	A
5.354	821220	8.7	S	S SEX					0.08	B		15	6.1	Y	1	Seargent,D	
5.708	821221	9.4	M		3.7	5	0.2	114	0.08	B		11	5.8	Y	1	Fleet,R.W	B
5.715	821222	9.9	M		2.9	6	0.3	112	0.35	N	5.5	100	5.8	Y	1	Fleet,R.W	B
5.722	821223	10.0	M		2.6	6	0.2	115	0.15	N	4	50	5.7	Y	1	Fleet,R.W	B
5.729	821224	10.3	M	S SEX	2.5	5			0.30	N	8.5	102	6.2	Y	1	Begbie,M.J.R	

NOTE A At the time of observation, the comet's altitude was +6 deg. and the sun's altitude was -14 deg.

NOTE B Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 6 JUL 1986

DATE: 6 JUL 1986

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
6.354	821225	8.8	S	S SEX	6	4			0.08	B		15	6.1	Y	1	Seargent,D	A

NOTE A Coma diameter approximate.

DATE: 7 JUL 1986

DATE: 7 JUL 1986

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)
7.2083	821226	8.9	M	S&X SEX	5	2			0.14	SN		52	5.5	Y	2	Cook,A.J

DATE: 8 JUL 1986

DATE: 8 JUL 1986

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
8.19	821227	8.9	S	SAO	3.8	2			0.256	N	4.5	45	3.0	Y	7	Morris,C.S	A
8.30	821228	10.6	S	S SEX	2	2			0.317	N	5	86	3.9			Jones,A	B
8.354	821229	9.0	S	S SEX		4			0.08	B		15	6.1	Y	1	Seargent,D	
8.708	821230	9.4	M		4.1	3			0.08	B		11	5.6	Y	1	Fleet,R.W	C
8.715	821231	10.2	M		3.1	6	0.3	111	0.35	N	5.5	100	5.5	Y	1	Fleet,R.W	C
8.722	821232	10.0	M		3.2	4			0.15	N	4	50	5.5	Y	1	Fleet,R.W	C

NOTE A Comet very low.

NOTE B Hazy sky.

NOTE C Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 9 JUL 1986

DATE: 9 JUL 1986

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
9.347	821233	9.0	S	S SEX					0.08	B		15	6.1	Y	1	Seargent,D	
9.701	821234	9.6	M		3.7	4			0.08	B		11	5.6	Y	1	Fleet,R.W	A
9.708	821235	9.6	M		3.2	5			0.15	N	4	50	5.6	Y	1	Fleet,R.W	A
9.710	821236	10.6	M	S SEX	1.7	6			0.30	N	8.5	102	6.2	Y	1	Begbie,M.J.R	
9.719	821237	10.2	M		3.2	6	0.3	109	0.35	N	5.5	100	5.6	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from S Sex chart.

DATE: 10 JUL 1986

DATE: 10 JUL 1986

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
10.347	821238	9.0	S	S SEX					0.08	B		15	6	Y	1	Seargent,D	
10.708	821239	9.6	M		3.7	3			0.08	B		11	5.4	Y	1	Fleet,R.W	A
10.715	821240	10.3	M		3.0	6	0.2	105	0.35	N	5.5	100	5.4	Y	1	Fleet,R.W	A
10.726	821241	10.0	M		3.2	4			0.15	N	4	50	5.4	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from S Sex chart.

DATE: 11 JUL 1986

DATE: 11 JUL 1986

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
11.347	821242	8.9	S	S SEX					0.08	B		15		Y	1	Seargent,D	
11.712	821243	9.7	M		4.0	4			0.08	B		11	4.5M	Y	1	Fleet,R.W	A
11.719	821244	10.5	M		2.4	6	0.2	107	0.35	N	5.5	100	4.4M	Y	1	Fleet,R.W	B

NOTE A Comparison star magnitudes derived from S Sex chart.

NOTE B Comparison star magnitudes derived from S Sex chart. Tail only suspected.

DATE: 12 JUL 1986

DATE: 12 JUL 1986

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	
12.17	821245	9	:	S 88					0.20	N	6	55	4	TM	Y	33	Hale,A	A
12.347	821246	9.0	S	S SEX					0.08	B		15	5.5	Y	1	Seargent,D	B	
12.708	821247	10.5	M		2.2		5		0.35	N	5.5	100	4.6M	Y	1	Fleet,R.W	C	

NOTE A Observation strongly affected by low altitude, twilight and moonlight. Comet little more than a vague fuzzy patch. Candidate suspected on July 12.17, confirmed on July 13.15. The magnitude estimates on both nights are little more than educated "guesstimates".

NOTE B Some moonlight.

NOTE C Comparison star magnitudes derived from S Sex chart.



DATE: 13 JUL 1986

DATE: 13 JUL 1986

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
13.15	821248	9	:	S 88					0.20	N	6	55	4	Y	33	Hale,A	A
13.705	821249	10.7		M	2.2	5			0.35	N	5.5	100	4.8M	Y	1	Fleet,R.W	B
13.81	821250	10.8		S S SEX					0.317	N	5	86	4.5			Jones,A	C

NOTE A Observation strongly affected by low altitude, twilight and moonlight. Comet little more than a vague fuzzy patch. Candidate suspected on July 12.17, confirmed on July 13.15. The magnitude estimates on both nights are little more than educated "guesstimates".

NOTE B Comparison star magnitudes derived from S Sex chart.

NOTE C Hazy sky. Moon 6.5 days.

DATE: 14 JUL 1986

DATE: 14 JUL 1986

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
14.705	821251	10.9	M		1.2	4			0.35	N	5.5	100	4.0M	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from S Sex chart.

DATE: 22 JUL 1986

DATE: 22 JUL 1986

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
22.701	821252	11.5	M		1.4	6			0.35	N	5.5	100	5.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from S Sex chart.

DATE: 23 JUL 1986

DATE: 23 JUL 1986

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
23.719	821253	11.3	M		1.5	6			0.35	N	5.5	100	5.2	Y	1	Fleet,R.W	A

NOTE A 2.2' coma, averted vision. Comparison star magnitudes derived from S Sex chart.

DATE: 24 JUL 1986

DATE: 24 JUL 1986

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
24.705	821254	11.2	M		1.5	5			0.35	N	5.5	100	4.7	Y	1	Fleet,R.W	A

NOTE A 2.5' coma, averted vision. Comparison star magnitudes derived from S Sex chart.

DATE: 25 JUL 1986

DATE: 25 JUL 1986

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
25.365	821255	9.5	S	S SEX					0.08	B		15	6	Y	1	Seargent,D	
25.708	821256	11.4	M		1.5	5			0.35	N	5.5	100	4.7	Y	1	Fleet,R.W	A

NOTE A 2.5' coma, averted vision. Comparison star magnitudes derived from S Sex chart.

DATE: 26 JUL 1986

DATE: 26 JUL 1986

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
26.48	821257	8.6	S	DCS	4.5	3			0.25	N	5	62	5.7			Clark,M.L	
26.705	821258	11.4	M		1.7	5			0.35	N	5.5	100	4.6	Y	1	Fleet,R.W	A

NOTE A 2.5' coma, averted vision. Comparison star magnitudes derived from S Sex chart.

DATE: 28 JUL 1986

DATE: 28 JUL 1986

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)
28.724	821259	11.2	S	S4X SEX	1.8	4			0.20	N	7	78	5.6	Y	2	Campos, J
28.958	821260					2			0.20	N	5	50	5.5	Y	4	da Silva, L.A.L



DATE: 29 JUL 1986

DATE: 29 JUL 1986

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
29.708	821261	11.3	M		1.7	6			0.35	N	5.5	100	4.9	Y	1	Fleet, R.W	A

NOTE A 2.7' coma, averted vision. Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 30 JUL 1986

DATE: 30 JUL 1986

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
30.36	821262	10.0:	S		2	3			0.20	N	6	118	5.0	Y	1	Lovejoy,T	
30.712	821263	10.9	M		1.4	7			0.35	N	5.5	100	4.9	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 31 JUL 1986

DATE: 31 JUL 1986

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
31.705	821264	10.8	M		1.1	7			0.35	N	5.5	100	4.4	Y	1	Fleet,R.W	A

NOTE A Between clouds. Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 1 AUG 1986

DATE: 1 AUG 1986

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
1.705	821265	11.0	M		1.1	6			0.35	N	5.5	100	4.0	Y	1	Fleet,R.W	A

NOTE A Between clouds. Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 2 AUG 1986

DATE: 2 AUG 1986

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
2.708	821266	11.1	M		1.4	6			0.35	N	5.5	100	4.7	Y	1	Fleet,R.W	A

NOTE A 1.9' coma, averted vision. Comparison star magnitudes derived from S Sex and SX Leo charts.

DATE: 3 AUG 1986

DATE: 3 AUG 1986

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
3.35	821267	9.8:	S		3	3			0.20	N	6	52	5.3C	Y	1	Lovejoy,T	
3.398	821268	10.1	S	88SXLEO	3	2			0.32	N	8	150		Y	1	Tregaskis,T.B	A

NOTE A Very low. Comparison in tree. (Observer gave limit as approximately 13.5. Ed.)

DATE: 4 AUG 1986

DATE: 4 AUG 1986

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
4.701	821269	11.5	M	X SEX	2.0	5			0.35	N	5.5	100	5.5	Y	2	Begbie, M.J.R	
4.705	821270	11.6	M		1.6	5			0.35	N	5.5	100	4.6	Y	1	Fleet, R.W	A

NOTE A 2.5' coma, averted vision. Comparison star magnitudes derived from SX Leo chart.

DATE: 5 AUG 1986

DATE: 5 AUG 1986

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
5.705	821271	11.6	M		1.4	4			0.35	N	5.5	100	4.6	Y	1	Fleet,R.W	A

NOTE A 2.3' coma, averted vision. Comparison star magnitudes derived from SX Leo chart.



DATE: 6 AUG 1986

DATE: 6 AUG 1986

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
6.705	821272	11.5	M		1.6	5			0.35	N	5.5	100	4.6	Y	1	Fleet,R.W	A

NOTE A 2.5' coma, averted vision. Comparison star magnitudes derived from SX Leo chart.

DATE: 7 AUG 1986

DATE: 7 AUG 1986

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
7.705	821273	11.6	M		1.3	4			0.35	N	5.5	100	4.6	Y	1	Fleet,R.M	A

NOTE A 1.8' coma, averted vision. Comparison star magnitudes derived from SX Leo chart.

DATE: 8 AUG 1986

DATE: 8 AUG 1986

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
8.705	821274	11.7	M			3			0.35	N	5.5	100	4.2M	Y	1	Fleet,R.W	A

NOTE A 1.1' coma, averted vision, haze. Comparison star magnitudes derived from SX Leo chart.

DATE: 9 AUG 1986

DATE: 9 AUG 1986

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
9.47	821275				2.5	1			0.25	N	5	62	4.2			Clark, M.L	A
9.705	821276	11.9	M			3			0.35	N	5.5	100	4.1M	Y	1	Fleet, R.W	B

NOTE A Mag. estimate not possible in bright twilight.

NOTE B 0.9' coma, averted vision, haze. Comparison star magnitudes derived from SX Leo chart.

DATE: 29 OCT 1986

DATE: 29 OCT 1986

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)
29.53	821277	11.5:			1.3	1			0.256	N	4.5	111	5.0MC	Y	6	Morris, C.S

DATE: 31 OCT 1986

DATE: 31 OCT 1986

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
31.51	821278	12.0:	S	SX LEO		1			0.20	N	6	163	5 T	Y	40	Eale,A	A
31.53	821279	11.5			1.4	2			0.256	N	4.5	111	5.5TC	Y	6	Morris,C.S	B

NOTE A Observation hampered by low altitude, twilight, and skyglow.

NOTE B Clouds interfered with observation.

DATE: 1 NOV 1986

DATE: 1 NOV 1986

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	
1.51	821280	12.0:	S	SX LEO		1			0.20	N	6	163	5	T	Y	40	Hale,A	A
1.5444	821281	12	S	SAO	1.0	2			0.254	N	3.8	64				1	Machholz,D	

NOTE A Observation hampered by low altitude, twilight, and skyglow.

DATE: 3 NOV 1986

DATE: 3 NOV 1986

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
3.080	821282	13.0	S		1.4	2			0.35	N	5.5	100	6.0	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.



DATE: 4 NOV 1986

DATE: 4 NOV 1986

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
4.080	821283	13.0	S		1.2	2			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	A
4.53	821284	11.7	S	Y VIR	1.4	2			0.256	N	4.5	156	4.5C	Y	6	Morris,C.S	

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 5 NOV 1986

DATE: 5 NOV 1986

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
5.076	821285	13.2	S		0.8	2			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	A
5.083	821286	13.4	S		1.0	3			0.35	N	5.5	160	6.0	Y	1	Fleet,R.W	A
5.51	821287	12.0	S	SX LEO		1			0.20	N	6	163	5.5	Y	40	Hale,A	B

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

NOTE B Observation affected by low altitude and skyglow. The brightness has been corrected for extinction by 0.1 magnitude.

DATE: 7 NOV 1986

DATE: 7 NOV 1986

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)
7.54	821288	12.0	S	Y VIR	1.2	3			0.256	N	4.5	156	5.0C	Y	6	Morris, C.S

DATE: 8 NOV 1986

DATE: 8 NOV 1986

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
8.074	821289	13.1	S		0.7	2			0.35	N	5.5	160	6.1	Y	1	Fleet,R.W	A
8.080	821290	13.2	S		0.6	2			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 9 NOV 1986

DATE: 9 NOV 1986

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
9.080	821291	13.1:	S		0.6	2			0.35	N	5.5	100	6.0	Y	1	Fleet,R.W	A
9.83	821292	13.3	S	AAVSO	0.7				0.20	N	5.6	106	5.0	Y	6	Nakamura,A	

NOTE A Comet suspected only. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 13 NOV 1986

DATE: 13 NOV 1986

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
13.076	821293	13.5	S		0.7	2			0.35	N	5.5	160	5.9	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 14 NOV 1986

DATE: 14 NOV 1986

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
14.078	821294	13.4	S		0.6	3			0.35	N	5.5	160	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 22 NOV 1986

DATE: 22 NOV 1986

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
22.559	821295	13.5	M	113		2			0.279	SC	10	167	5	Y	1	Kemble, L.J	A

NOTE A This is my first sighting since May 1986. Comet about 23 deg. above horizon. Some early morning frost and atmospheric interference, but otherwise, clear sky. Observation made mostly for experience and challenge, to see how far I can follow Halley out-bound. Gibbous moon in ENE.



DATE: 27 NOV 1986

DATE: 27 NOV 1986

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
27.439	821296	12.8	S	T VIR	0.6	0			0.445	N	4.5	167	5.9M	Y	3	Morrison,W	
27.48	821297	12.0	S	SX LEO		1			0.20	N	6	163	5.5	Y	40	Hale,A	A

NOTE A Moon near T Vir field on this morning - comet compared to defocused stars near comet - these stars compared to T Vir field on Nov. 30, when moon out of the way.

DATE: 28 NOV 1986

DATE: 28 NOV 1986

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
28.48	821298	12.7	B	113	2	0			0.29	N	4.5	46	5.5M	Y	1	Jacobson,E	
28.52	821299	12.0	S	Y VIR	1.2	1			0.256	N	4.5	156	5.5	Y	13	Morris,C.S	
28.53	821300	11.6	S	Y VIR	1.9	2			0.256	N	4.5	67	5.5	Y	13	Morris,C.S	
28.53	821301	11.9	S	NPS					0.256	N	4.5	67	5.5	Y	13	Morris,C.S	
28.677	821302	12.9:	S	V HYD	1.4	1			0.254	N	4.5	114	6	Y	1	Seargent,D	A

NOTE A The observation of Nov. 28 and Dec. 4 used the stars marked "12.9" and "12.3" on the V Hydrae d chart. These values appear to be about one magnitude too faint.

DATE: 29 NOV 1986

DATE: 29 NOV 1986

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
29.5486	821303	14	M	113		2			0.279	SC	10	167	5	Y	1	Kemble, L.J	A
29.78	821304	12.8	S	AAVSO	1.2	2			0.20	N	5.6	106	5.5	Y	1	Nakamura, A	

NOTE A -10 deg. Celsius. Some atmospheric icing, but clear, dark sky. Comet about 24 deg. above horizon. Comet only a very faint uniform, small hazy spot, unresolved, while nearby very faint stars flickered with back-and-forth focusing.

DATE: 30 NOV 1986

DATE: 30 NOV 1986

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
30.059	821305	12.6	M		1.0	4			0.35	N	5.5	160	6.1	Y	1	Fleet,R.W	A
30.24	821306	12.0	S		0.4	4			0.203	SC	10	85	6.0	Y	2	Hasubick,W	
30.441	821307	12.8	S	T VIR	1.0	1			0.445	N	4.5	167	6.2	Y	3	Morrison,W	
30.4688	821308	12.3	S	T VIR	1.3	4			0.32	N	4.8	160	6.2	Y	4	Cook,A.J	
30.53	821309	11.5	S	Y VIR	1.9	1			0.256	N	4.5	67	5.5	Y	13	Morris,C.S	
30.54	821310	11.5	S	Y VIR	1.9	2			0.256	N	4.5	45	5.5	Y	13	Morris,C.S	
30.54	821311	11.6	S	NPS					0.256	N	4.5	45	5.5	Y	13	Morris,C.S	
30.54	821312	11.8	S	Y VIR	1.2	2			0.256	N	4.5	156	5.5	Y	13	Morris,C.S	

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 2 DEC 1986

DATE: 2 DEC 1986

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)
2.50	821313	12.4	B	113	1	0			0.29	N	4.5	29	6.0	Y	1	Jacobson,E
2.51	821314	11.9	S	SX LEO		1			0.20	N	6	61	6	Y	40	Hale,A

DATE: 3 DEC 1986

DATE: 3 DEC 1986

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)
3.48	821315	11.9	B	113	1	0			0.29	N	4.5	29	6.0	Y	1	Jacobson,E
3.54	821316	11.9	S	Y VIR	1.7	1			0.256	N	4.5	67	5.5	Y	13	MORRIS,C.S
3.55	821317	11.8	S	Y VIR	1.9	1			0.256	N	4.5	45	5.5	Y	13	MORRIS,C.S

DATE: 4 DEC 1986

DATE: 4 DEC 1986

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
4.42	821318	12.1	S	AAVSO	1.1	0			0.500	N	5	96	6	Y	1	Bortle, J.E	
4.667	821319	12.5:	S	V HYD	1	1			0.254	N	4.5	114	6	Y	1	Seargent, D	A

NOTE A The observations of Nov. 28 and Dec. 4 used the stars marked "12.9" and "12.3" on the V Hydrae d chart. These values appear to be about one magnitude too faint.

DATE: 5 DEC 1986

DATE: 5 DEC 1986

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)
5.50	821320	12.0	B	113	1.2	0			0.29	N	4.5	29	6.0	Y	1	Jacobson,E
5.78	821321	13.0	S	AAVSO	1.0	1			0.20	N	5.6	106	5.5	Y	5	Nakamura,A
5.83	821322	12.3	S	AAVSO	2	2			0.13	N	6.3	62	5.0	Y	1	Hayashi,A



DATE: 6 DEC 1986

DATE: 6 DEC 1986

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)
6.44	821323	11.9	S	AAVSO	1.2	1			0.500	N	5	96	6	Y	1	Bortle, J.E

DATE: 7 DEC 1986

DATE: 7 DEC 1986

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)
7.80	821324	12.9	S	AAVSO	1.1	2			0.20	N	5.6	106	5.5	Y	6	Nakamura,A

DATE: 8 DEC 1986

DATE: 8 DEC 1986

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
8.444	821325	13.3	S	T VIR	0.7	0			0.445	N	4.5	167	6.2	Y	3	Morrison,W	
8.51	821326	11.8	B	113	1.2	0			0.29	N	4.5	29	6.0	Y	1	Jacobson,E	
8.52	821327	11.9	S	Y VIR	1.9	1			0.256	N	4.5	67	5.5	Y	13	Morris,C.S	
8.52	821328	11.8	S	Y VIR	2.2	1			0.256	N	4.5	45	5.5	Y	13	Morris,C.S	
8.52	821329	11.8	S	NPS					0.256	N	4.5	45	5.5	Y	13	Morris,C.S	
8.53	821330	11.9	S	Y VIR	1.9	1			0.256	N	4.5	111	5.5	Y	13	Morris,C.S	
8.618	821331	12.6	S	U GEM	1	3			0.152	N	5.8	100	6.3	Y	3	Krisciunas,K	A
8.694	821332	11.7	S	T VIR	2	2			0.254	N	4.5	114	6.2	Y	1	Seargent,D	B

NOTE A Magnitude accuracy +/-0.3. Coma diameter approximate, DC uncertain. Faintest star visible in 6 inch was mv approx. 14.2. Comet at limits of averted vision. Used chart in Nov. 1986 Sky and Telescope to locate field. This was the clearest night in the year at sea level.

NOTE B Coma diameter approximate.

DATE: 12 DEC 1986

DATE: 12 DEC 1986

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)
12.54	821333	11.9	S	Y VIR		1			0.20	N	6	55	6	Y	40	Hale,A
12.747	821334	12.8	M	U GEM					0.10	N	10	111	4.5M	Y	1	Kato,T

DATE: 13 DEC 1986

DATE: 13 DEC 1986

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
13.069	821335	12.7	M		0.6	5			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A
13.076	821336	12.8	M		0.6	5			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	B
13.448	821337	12.7	S	T VIR	0.8	3			0.445	N	4.5	167	6.4	Y	3	Morrison,W	

NOTE A 1.0' coma, averted vision. Comparison star magnitudes derived from T Vir chart.

NOTE B Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 14 DEC 1986

DATE: 14 DEC 1986

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
14.035	821338	13.2	S		0.5	3			0.35	N	5.5	160	5.8M	Y	1	Fleet,R.W	A
14.069	821339	12.8	S		0.5	4			0.22	N	8	150	6.2	Y	1	Fleet,R.W	A
14.073	821340	12.8	M		0.8	5			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	B
14.076	821341	12.8	M		0.7	5			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	C

NOTE A Comparable to early Nov. estimate. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

NOTE B 1.0' coma, averted vision. Comparison star magnitudes derived from T Vir chart.

NOTE C Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 15 DEC 1986

DATE: 15 DEC 1986

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
15.076	821342	12.9	M		0.5	4			0.35	N	5.5	100	5.9	Y	1	Fleet, R.W	A

NOTE A 1.0' coma, averted vision. Comparison star magnitudes derived from T Vir chart. At moonset.

DATE: 25 DEC 1986

DATE: 25 DEC 1986

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
25.938	821343	13.2	S		0.8	2			0.35	N	5.5	100	5.9	Y	1	Fleet,R.W	A
25.941	821344	13.3	S		0.8	2			0.35	N	5.5	160	5.9	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.



DATE: 26 DEC 1986

DATE: 26 DEC 1986

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
26.54	821345	12.0	S	SX LEO		1			0.20	N	6	55	6	Y	40	Hale,A	
26.955	821346	13.2	S		1.0	2			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	A
26.962	821347	13.3	S		0.7	3			0.35	N	5.5	160	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 27 DEC 1986

DATE: 27 DEC 1986

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
27.10	821348	12.3	S	T VIR	3	1			0.510	N	4	75	6.5	Y	4	Comello,G	A
27.11	821349	12.1	S	T VIR	3.1	1			0.510	N	4	75	6.5	Y	4	Bouma,R.J	
27.12	821350	12.2	S	T VIR		1			0.254	JB	6	73	6.5	Y	4	Bouma,R.J	
27.52	821351	12.0	S	Y VIR	2.3	0			0.256	N	4.5	67	5.5	Y	13	Morris,C.S	
27.52	821352	12.0	S	T VIR					0.256	N	4.5	67	5.5	Y	13	Morris,C.S	
27.990	821353	13.1	S		1.2	2			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	B
27.997	821354	13.2	S		1.0	2			0.35	N	5.5	160	6.2	Y	1	Fleet,R.W	B

NOTE A Coma diameter approximate.

NOTE B Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 28 DEC 1986

DATE: 28 DEC 1986

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
28.11	821355	12.4	S	T VIR	3	1			0.510	N	4	75	6.5	Y	4	Comello,G	A
28.12	821356	12.0	S	T VIR	2.8	1			0.510	N	4	75	6.5	Y	4	Bouma,R.J	
28.79	821357	12.9	S	AAVSO	1.5	2			0.20	N	5.6	106	6.0	Y	6	Nakamura,A	

NOTE A Coma diameter approximate.

DATE: 29 DEC 1986

DATE: 29 DEC 1986

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)
29.14	821358	12.3	S	T VIR		0			0.510	N	4	93	5.5	Y	4	Bouma,R.J
29.14	821359	12.5	S	T VIR		1			0.510	N	4	93	6	Y	4	Comello,G
29.53	821360	12.0	S	Y VIR	2.3	1			0.256	N	4.5	67	5.5	Y	13	Morris,C.S

DATE: 30 DEC 1986

DATE: 30 DEC 1986

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
30.042	821361	13.2	S		0.7	3			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	A
30.049	821362	13.3	S		0.7	3			0.35	N	5.5	160	6.1	Y	1	Fleet,R.W	A
30.14	821363	12.3	S	T VIR	3	0			0.510	N	4	93	6	Y	4	Bouma,R.J	B
30.54	821364	12.3	S	Y VIR					0.20	N	6	55	6	Y	40	Hale,A	C
30.625	821365	12.0	S	T VIR					0.254	N	4.5	190	6	Y	1	Seargent,D	D

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

NOTE B Coma diameter approximate.

NOTE C Comet involved with small group of stars which made observation and determination of magnitude difficult.

NOTE D V. marginal.

DATE: 31 DEC 1986

DATE: 31 DEC 1986

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
31.003	821366	13.2	S		0.8	3			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	A
31.014	821367	13.3	S		0.7	3			0.35	N	5.5	160	6.2	Y	1	Fleet,R.W	A
31.15	821368	12.3	S	T VIR	3	1			0.510	N	4	75	6	Y	4	Bouma,R.J	B
31.16	821369	12.5	S	T VIR		1			0.510	N	4	75	5.5	Y	4	Comello,G	
31.425	821370	12.5	B	113	1.2	0			0.254	N	4.5	46	6.0	Y	1	Jacobson,E	

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

NOTE B Coma diameter approximate.

DATE: 1 JAN 1987

DATE: 1 JAN 1987

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
1.056	821371	13.3	S		1.0	2			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	A
1.063	821372	13.5	S		0.7	2			0.35	N	5.5	160	6.1	Y	1	Fleet,R.W	A
1.354	821373	13.0	S	V HYA	1.0	3			0.254	N	5.6	120	7.4	Y	1	Knight,S	
1.399	821374	14.2	S	SX LEO	1.0	3			0.254	N	5.6	120	7.4	Y	1	Knight,S	B
1.410	821375	12.7	S	T VIR	1.0	3			0.254	N	5.6	38	7.4	Y	1	Knight,S	C
1.459	821376	12.8	B	113	1.4	0			0.254	N	4.5	46	6.0	Y	1	Jacobson,E	

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

NOTE B SX Leo sequence much brighter than other two sequences (V Hya, T Vir).

NOTE C Detected motion in 1:22. SX Leo sequence much brighter than other two sequences (V Hya, T Vir).

DATE: 2 JAN 1987

DATE: 2 JAN 1987

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
2.042	821377	13.2	S		1.1	3			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	A
2.049	821378	13.5	S		0.6	3			0.35	N	5.5	160	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.



DATE: 3 JAN 1987

DATE: 3 JAN 1987

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
3.045	821379	13.1	S		1.3	3			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	A
3.069	821380	13.4	S		0.9	3			0.35	N	5.5	160	6.1	Y	1	Fleet,R.W	A
3.17	821381	12.2	S	T VIR		1			0.510	N	4	75	6.5	Y	4	Bouma,R.J	
3.17	821382	12.4	S	T VIR		1			0.510	N	4	75	6.5	Y	4	Comello,G	
3.18	821383	12.3	S	T VIR		1			0.254	JB	6	73	6.5	Y	4	Bouma,R.J	
3.467	821384	12.6	B	113	1.2	0			0.254	N	4.5	46	6.0	Y	1	Jacobson,E	
3.52	821385	12.1	S	Y VIR		0			0.20	N	6	55	6.5	Y	40	Hale,A	
3.84	821386	12.8	S	AAVSO	2	2			0.20	N	4.5	69	5.0	Y	1	Hayashi,A	

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 4 JAN 1987

DATE: 4 JAN 1987

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
4.12	821387	12.5:	S	T VIR	1.5	1			0.254	JB	6	73	5.7	Y	6	Bus,E.P	
4.16	821388	12.2	S	T VIR	2.5	1			0.510	N	4	75	7	Y	4	Bouma,R.J	A
4.17	821389	12.3	S	T VIR		1			0.510	N	4	75	7	Y	4	Comello,G	
4.399	821390	12.0	B	113	1.7	0			0.254	N	4.5	46	6.0	Y	1	Jacobson,E	

NOTE A Coma diameter approximate.

DATE: 5 JAN 1987

DATE: 5 JAN 1987

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
5.045	821391	13.5	S		0.7	5			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	A
5.063	821392	13.3	S		1.2	4			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 6 JAN 1987

DATE: 6 JAN 1987

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
6.014	821393	13.5	S		0.9	3			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	A
6.035	821394	13.5	S	T VIR	0.4	3			0.35	N	5.5	100	6.2	Y	2	Begbie,M.J.R	
6.458	821395	12.5	B	113	1.5	0			0.254	N	4.5	46	6.0	Y	1	Jacobson,E	B
6.82	821396	12.9	S	AAVSO	2	2			0.20	N	4.5	69	5.0	Y	1	Hayashi,A	

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter. Gap in cirrus.

NOTE B Very cold; estimation made very quickly. Coma diameter approximate.

DATE: 7 JAN 1987

DATE: 7 JAN 1987

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
7.028	821397	13.4	S		0.9	5			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A
7.045	821398	13.4	S		0.8	5			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 8 JAN 1987

DATE: 8 JAN 1987

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	I/	Pwr	Lim	DA	Site	Observer(s)	Notes
8.003	821399	13.4	S		1.2	4			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	A
8.021	821400	13.4	S		0.8	5			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	A
8.381	821401	13.7	S	T VIR	0.7	1			0.445	N	4.5	167	6.6	Y	3	Morrison,W	
8.477	821402	12.4	B	113	1.4	0			0.254	N	4.5	46	6.0	Y	1	Jacobson,E	
8.53	821403	12.2	S	T VIR	1.9	0			0.256	N	4.5	67	5.5	Y	13	Morris,C.S	B
8.80	821404	13.0	S	AAVSO	1.5	2			0.20	N	4.5	69	5.0M	Y	1	Hayashi,A	

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

NOTE B Comet was very difficult.

DATE: 9 JAN 1987

DATE: 9 JAN 1987

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
9.059	821405	13.1	S		1.1	4			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A
9.076	821406	13.3	S		0.7	5			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	A
9.51	821407	12.2	S	Y VIR					0.20	N	6	55	6	Y	40	Hale,A	

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 10 JAN 1987

DATE: 10 JAN 1987

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
10.024	821408	13.1	S		1.4	5			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A
10.035	821409	13.3	S		0.9	5			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.



DATE: 11 JAN 1987

DATE: 11 JAN 1987

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
11.031	821410	13.2	S		1.3	4			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A
11.045	821411	13.3	S		0.8	4			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	A
11.430	821412	12.7	B	113	1.7	0			0.254	N	4.5	46	6.0	Y	1	Jacobson,E	

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 12 JAN 1987

DATE: 12 JAN 1987

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
12.056	821413	13.4	S		0.6	4			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	A
12.069	821414	13.2	S		1.1	3			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 13 JAN 1987

DATE: 13 JAN 1987

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	821415	13.6	S		0.5	3			0.35	N	5.5	160	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Star interfering. Averted vision coma diameter.

DATE: 25 JAN 1987

DATE: 25 JAN 1987

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
25.52	821416	12.1	S	Y VIR		2			0.20	N	6	55	6.5	Y	40	Hale,A	A

NOTE A Comet was noticeably more prominent than earlier in the month; a minor outburst in the interim?

DATE: 26 JAN 1987

DATE: 26 JAN 1987

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
26.40	821417	12.4	S	T VIR	1.3	1			0.256	N	4.5	111	6.0	Y	16	Morris,C.S	A
26.979	821418	13.8	S		1.0	4			0.35	N	5.5	100	5.9	Y	1	Fleet,R.W	B

NOTE A Difficult observation - comet was close to a star.

NOTE B Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter. Between clouds.

DATE: 27 JAN 1987

DATE: 27 JAN 1987

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
27.000	821419	13.9	S			4			0.35	N	5.5	160	6.2	Y	1	Fleet,R.W	A
27.380	821420	12.9	B	113	1.2	0			0.254	N	4.5	82	5.8	Y	1	Jacobson,E	B

NOTE A Comparison star magnitudes derived from T Vir chart.

NOTE B Slight moonlight.

DATE: 28 JAN 1987

DATE: 28 JAN 1987

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
28.010	821421	13.6	S		0.7	5			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A
28.021	821422	13.7	S		0.6	4			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 29 JAN 1987

DATE: 29 JAN 1987

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
29.440	821423	13.1	B	113	1.0	0			0.254	N	4.5	46	6.0	Y	1	Jacobson,E	
29.903	821424	13.8	S		0.5	4			0.35	N	5.5	160	6.1	Y	1	Fleet,R.W	A
29.913	821425	13.8	S		0.6	3			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.



DATE: 30 JAN 1987

DATE: 30 JAN 1987

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
30.15	821426	12.7:	S	V HYA	1.5	1			0.205	N	6	38	5.7	Y	3	van de Weg,R.L.W	A
30.458	821427	12.7	B	113	1.1	0			0.254	N	4.5	46	6.0	Y	1	Jacobson,E	
30.50	821428	12.4	S	Y VIR		0			0.20	N	6	163	6	Y	40	Hale,A	B

NOTE A Coma diameter approximate.

NOTE B Observation hampered by proximity of comet to the 10th magnitude star.

DATE: 31 JAN 1987

DATE: 31 JAN 1987

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
31.052	821429	13.7	S		0.8	4			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A
31.059	821430	13.8	S		0.7	3			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
31.181	852166	0.300	1.5	0.200	6.9 x 4.6	2.00	Kodak 2415		Y		18/P	1	Ward,A	A

NOTE A Instrument is Schmidt camera. (Observer's image identifier is SC-18. Ed.)

DATE: 1 FEB 1987

DATE: 1 FEB 1987

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
1.042	821431	13.9	S		0.6	3			0.35	N	5.5	160	6.1	Y	1	Fleet,R.W	A
1.052	821432	13.8	S		0.7	4			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 2 FEB 1987

DATE: 2 FEB 1987

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
2.003	821433	13.6	S		0.8	4			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A
2.042	821434	13.7	S		0.7	3			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 3 FEB 1987

DATE: 3 FEB 1987

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
3.052	821435	13.8	S		0.7	3			0.35	N	5.5	160	6.2	Y	1	Fleet,R.W	A
3.063	821436	13.7	S		0.8	3			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A
3.910	821437	13.7	S		0.8	3			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A
3.922	821438	14.0	S	T VIR	1.0	3			0.35	N	5.5	100	6.4	Y	2	Begbie,M.J.R	
3.931	821439	13.8	S		0.7	3			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	A
3.934	821440	13.8	S	T VIR		3			0.35	N	5.5	160	6.4	Y	2	Begbie,M.J.R	

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 4 FEB 1987

DATE: 4 FEB 1987

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)
4.426	821441	12.9	B	113	1.2	0			0.254	N	4.5	46	6.0	Y	1	Jacobson,E

DATE: 5 FEB 1987

DATE: 5 FEB 1987

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

Date(UT)	AON#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ids	f/	Pwr	Lim	DA	Site	Observer(s)
5.25	821442	12.8	S	AAVSO	1.1	0			0.500	N	5	125	6	Y	1	Bortle, J.E
5.316	821443	13.9	S	T VIR	0.4	0			0.445	N	4.5	167	6.5	Y	3	Morrison, W

DATE: 6 FEB 1987

DATE: 6 FEB 1987

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
6.035	821444	13.9	S		0.6	4			0.35	N	5.5	160	6.1	Y	1	Fleet,R.W	A
6.066	821445	13.8	S		0.7	5			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	A
6.468	821446	13.4	B	112	1.2				0.254	N	4.5	82	6.0	Y	1	Jacobson,E	B
6.50	821447	11.8	S	T+Y VIR	2.4	1			0.256	N	4.5	45	7.0	Y	16	Morris,C.S	
6.51	821448	12.5	S	Y VIR					0.20	N	6	55	6	Y	40	Hale,A	
6.51	821449	11.8	S	T+Y VIR	2.4	1			0.256	N	4.5	67	7.0	Y	16	Morris,C.S	
6.51	821450	12.0	S	T+Y VIR	1.9	2			0.256	N	4.5	111	7.0	Y	16	Morris,C.S	

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

NOTE B Very diffuse, near telescope's limit. Coma diameter approximate.



DATE: 8 FEB 1987

DATE: 8 FEB 1987

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
8.028	821451	13.6	S		1.0	4			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	A
8.045	821452	13.8	S		0.8	4			0.35	N	5.5	160	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 9 FEB 1987

DATE: 9 FEB 1987

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
9.038	821453	14.0	S		0.6	4			0.35	N	5.5	160	6.3	Y	1	Fleet,R.W	A
9.049	821454	14.0	S		0.6	4			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A

NOTE A Faint star distracting. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 11 FEB 1987

DATE: 11 FEB 1987

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
11.073	821455	13.5	S		0.9	3			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	A
11.080	821456	13.8	S		0.7	3			0.35	N	5.5	160	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 12 FEB 1987

DATE: 12 FEB 1987

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
12.108	821457	13.7	S		0.6	4			0.35	N	5.5	160	6.1	Y	1	Fleet,R.W	A

NOTE A Bright star nuisance. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 18 FEB 1987

DATE: 18 FEB 1987

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
18.795	821458	13.7	S		0.8	3			0.35	N	5.5	100	5.9	Y	1	Fleet, R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 20 FEB 1987

DATE: 20 FEB 1987

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
20.221	821459	14.0	S	T VIR	0.5	0			0.445	N	4.5	167	6.5	Y	3	Morrison, W	
20.802	821460	13.8	S		0.9	3			0.52	N	5.6	150	6.1	Y	1	Fleet, R.W	A

NOTE A Faint star nuisance. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 21 FEB 1987

DATE: 21 FEB 1987

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
21.221	821461	14.0	S	T VIR	0.7	0			0.445	N	4.5	167	6.5	Y	3	Morrison,N	
21.26	821462	12.9	S	AUL UBV	1	0			0.25	N	4.5	82	6.0	Y	1	Jacobson,E	A
21.28	821463	13.5	S	INES	1	0			0.406	C	18	229				Green,D.W.E	B
21.882	821464	13.8	S		0.8	4			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	C
21.889	821465	13.9	S		0.6	4			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	C

NOTE A Visible only with averted vision. Coma diameter approximate.

NOTE B Coma diameter approximate.

NOTE C Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 22 FEB 1987

DATE: 22 FEB 1987

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
22.30	821466	12.8:	S	AUL UBV	1	0			0.25	N	4.5	82	6.0	Y	1	Jacobson, E	A
22.858	821467	13.6	S		0.8	4			0.52	N	5.6	150	6.1	Y	1	Fleet, R.W	B
22.868	821468	13.5	S		0.7	4			0.35	N	5.5	100	6.1	Y	1	Fleet, R.W	B

NOTE A Coma diameter approximate.

NOTE B Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.



DATE: 23 FEB 1987

DATE: 23 FEB 1987

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
23.35	821469	12.2:	S		2.2	0			0.256	N	4.5	67	5.5	Y	16	Morris,C.S	
23.41	821470	12.4	S	Y VIR		1			0.20	N	6	110	6.5	Y	40	Hale,A	
23.927	821471	13.6	S		1.0	4			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	A
23.947	821472	13.9	S	T VIR	1.0	3			0.52	N	5.6	150	6.4	Y	2	Begbie,M.J.R	
23.955	821473	13.5	S		1.1	5			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 24 FEB 1987

DATE: 24 FEB 1987

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
24.256	821474	14.0	S	T VIR	0.9	0			0.445	N	4.5	167	6.6	Y	3	Morrison,W	
24.920	821475	13.4	S		1.0	4			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	A

NOTE A Ended by cloud, poor conditions. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	ACN#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)
24.908	852167	0.300	1.5	0.200	6.9 x 4.6	6.00	Kodak 2415		Y		101/P		Jager,M

DATE: 26 FEB 1987

DATE: 26 FEB 1987

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
26.562	821476	13.5	M	X LEO	1	3			0.15	N	8.5	142	4.5C	Y	1	Kato,T	
26.68	821477	13.5	S	AAVSO	1	3			0.20	N	4.5	119	6.0	Y	1	Hayashi,A	
26.809	821478	13.7	S		1.0	4			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	A
26.844	821479	13.8	S		0.6	4			0.35	N	5.5	100	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 27 FEB 1987

DATE: 27 FEB 1987

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
27.31	821480	13.3	S	AUL UBV	1.2	0			0.29	N	4.3	144	6.0	Y	1	Jacobson,E	
27.66	821481	13.4	S	AAVSO	1.5	3			0.20	N	4.5	119	6.0	Y	1	Hayashi,A	
27.806	821482	13.7	S		0.6	5			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	A
27.865	821483	13.8	S		0.5	3			0.35	N	5.5	160	6.2	Y	1	Fleet,R.W	B

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

NOTE B Glare from bright star. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 28 FEB 1987

DATE: 28 FEB 1987

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
28.601	821484	13.5	M	X LEO	1	5			0.15	N	8.5	142	4.5C	Y	1	Kato,T	
28.872	821485	13.8	S		0.7	5			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A
28.878	821486	13.8	S		0.5	4			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 1 MAR 1987

DATE: 1 MAR 1987

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
1.858	821487	13.6	S		0.7	5			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A
1.875	821488	13.7	S		0.5	4			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 2 MAR 1987

DATE: 2 MAR 1987

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)
2.34	821489	13.4	S	AUL UVB	0.9	0			0.29	N	4.3	144	6.0	Y	1	Jacobson,E

DATE: 3 MAR 1987

DATE: 3 MAR 1987

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)
3.32	821490	13.4	S	AUL UVV	1	0			0.29	N	4.3	144	6.0	Y	1	Jacobson,E
3.36	821491	12.1	S	Y VIR		1			0.20	N	6	55	6.5	Y	40	Hale,A
3.38	821492	12.3	S	Y VIR		1			0.20	N	6	110	6.5	Y	40	Hale,A



DATE: 4 MAR 1987

DATE: 4 MAR 1987

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
4.024	S21493	13.9	S		0.4	4			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A
4.031	S21494	14.0	S		0.4	5			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	A
4.851	S21495	13.7	S		0.8	5			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A
4.872	S21496	13.7	S		0.8	4			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 5 MAR 1987

DATE: 5 MAR 1987

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
5.30	821497	13.6	S	AUL UBV	0.9	0			0.29	N	4.3	144	6.0	Y	1	Jacobson,E	
5.872	821498	13.7	S		0.8	5			0.52	N	5.6	150	6.3	Y	1	Fleet,R.W	A
5.889	821499	13.8	S		0.6	5			0.35	N	5.5	100	6.3	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 6 MAR 1987

DATE: 6 MAR 1987

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
6.889	821500	13.9	S		0.7	5			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A
6.903	821501	13.8	S		0.6	4			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 7 MAR 1987

DATE: 7 MAR 1987

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)
7.26	821502	13.2	S	AUL UBV	0.9	0			0.29	N	4.3	144	6.0	Y	1	Jacobson,E
7.41	821503	12.4	S	Y VIR		1			0.20	N	6	110	6	Y	40	Rale,A

DATE: 8 MAR 1987

DATE: 8 MAR 1987

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)
8.39	821504	13.7	S	AUL UBV	0.9	0			0.29	N	4.3	144	6.0	Y	1	Jacobson,E

DATE: 11 MAR 1987

DATE: 11 MAR 1987

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
11.049	821505	13.8	S		0.7	3			0.52	N	5.6	150	5.9	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 18 MAR 1987

DATE: 18 MAR 1987

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
18.18	821506	12.8	S	NPS	1.5	1			0.256	N	4.5	67	7.0	Y	3	Morris,C.S	A
18.18	821507	12.8	S	NPS					0.256	N	4.5	111	7.0	Y	3	Morris,C.S	
18.740	821508	14.2	S		0.4	3			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	B

NOTE A Small, non-stellar knot of material at center of coma.

NOTE B Difficult. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 19 MAR 1987

DATE: 19 MAR 1987

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
19.750	821509	14.2	S		0.8	3			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	A
19.760	821510	14.4	S		0.5	3			0.52	N	5.6	240	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.



DATE: 20 MAR 1987

DATE: 20 MAR 1987

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
20.21	821511	12.7	S	SX LEO		0			0.20	N	6	110	6.5	Y	40	Hale,A	
20.753	821512	14.3	S		0.4	3			0.52	N	5.6	150	5.9	Y	1	Fleet,R.W	A

NOTE A Ended by cloud. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 21 MAR 1987

DATE: 21 MAR 1987

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
21.48	821513	13.4	S	AUL UBV	0.8	0			0.29	N	4.3	144	6.0	Y	1	Jacobson,E	
21.774	821514	14.4	S		0.5	4			0.52	N	5.6	240	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 22 MAR 1987

DATE: 22 MAR 1987

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
22.16	821515	13.4	S		1.5	1			0.4	N	5	101		Y	1	Levy,D.H	
22.858	821516	14.0	S		0.6	4			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A
22.872	821517	14.1	S		0.5	3			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	A
22.90	821518	13.0	S	AAVSO	0.3	6			0.203	SC	10	135	6.5	Y	1	Hasubick,W	B

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

NOTE B DC approximate.

DATE: 23 MAR 1987

DATE: 23 MAR 1987

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
23.906	821519	14.2	S		0.4	3			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	A
23.913	821520	14.2	S		0.4	4			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 24 MAR 1987

DATE: 24 MAR 1987

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)
24.547	821521	13.7	M	X LEO	1	5			0.15	N	8.5	142	5.0C	Y	1	Kato,T

DATE: 26 MAR 1987

DATE: 26 MAR 1987

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)
26.21	821522	12.9	S	NPS	1.7	1			0.256	N	4.5	67	6.5	Y	3	Morris, C.S
26.21	821523	12.9	S	NPS					0.256	N	4.5	111	6.5	Y	3	Morris, C.S
26.494	821524	13.5	M	X LEO	0.5	4			0.10	N	10	111	4.5C	Y	1	Kato, T

DATE: 27 MAR 1987

DATE: 27 MAR 1987

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)
27.30	821525	13.0	S	SX LEO		0			0.20	N	6	110	6	Y	40	Hale,A

DATE: 29 MAR 1987

DATE: 29 MAR 1987

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
29.521	821526	13.8	M	X LEO	0.5	4			0.15	N	8.5	142	4.0C	Y	1	Kato,T	A
29.90	821527	12.5	S		3	0			0.300	N	5	62	6.0	Y	5	Scholten,A	
29.91	821528	12.3	S	S SEX	3	1			0.205	N	6	38	5.8	Y	1	van de Weg,R.L.W	B

NOTE A Hazy sky.

NOTE B Surprising easily visible, big object. Coma diameter approximate.



DATE: 30 MAR 1987

DATE: 30 MAR 1987

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
30.84	821529	12.3	S	S SEX	3	1			0.254	JB	6	73	6.2	Y	6	Bus,E.P	A

NOTE A Unexpected large and bright, coma diameter approximate, the brightness is probably brighter after extinction correction:  
approximately 12.0?

DATE: 31 MAR 1987

DATE: 31 MAR 1987

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
31.23	821530	13.2	S	AUL UBV	0.7	0			0.29	N	4.3	144	6.0	Y	1	Jacobson,E	
31.24	821531	13.0:	S	AUL UBV	0.9	0			0.25	N	4.5	179	6.0	Y	1	Jacobson,E	
31.830	821532	14.6	S		0.4	3			0.52	N	5.6	240	6.0	Y	1	Fleet,R.W	A

NOTE A Gap in cirrus. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 1 APR 1987

DATE: 1 APR 1987

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
1.844	821533	14.3	S		0.5	3			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	A
1.903	821534	14.3	S		0.5	2			0.52	N	5.6	240	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 2 APR 1987

DATE: 2 APR 1987

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
2.29	821535	13.0	S	SX LEO		0			0.20	N	6	110	6	Y	40	Hale,A	
2.29	821536	12.8	S	Y VIR		0			0.20	N	6	110	5.6	Y	40	Hale,A	
2.844	821537	14.3	S		0.7	4			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A
2.858	821538	14.4	S		0.5	3			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 3 APR 1987

NETWORK: AMATEUR OBSERVATION

DATE: 3 APR 1987

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
3.833	821539	14.2	S		0.9	4			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A
3.851	821540	14.2	S		0.6	5			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 4 APR 1987

DATE: 4 APR 1987

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
4.944	821541	14.3	S		0.4	4			0.52	N	5.6	240	6.1	Y	1	Fleet,R.W	A

NOTE A Star nuisance. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 5 APR 1987

DATE: 5 APR 1987

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
5.27	821542	13.1	S	AUL UBV	0.7	0			0.29	N	4.3	144	6.0	Y	1	Jacobson,E	A
5.896	821543	14.2	S		0.8	4			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	B
5.906	821544	14.2	S		0.6	3			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	B

NOTE A Very slightly condensed.

NOTE B Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 6 APR 1987

DATE: 6 APR 1987

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
6.951	821545	14.4	S		0.4	3			0.52	N	5.6	240	6.0	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.



DATE: 16 APR 1987

DATE: 16 APR 1987

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)
16.20	821546	13.2	S	AUL UBV	0.7	0			0.29	N	4.3	144	6.0	Y	1	Jacobson,E

DATE: 17 APR 1987

DATE: 17 APR 1987

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)
17.20	821547	12.9	S	AUL UBV	0.9	0			0.25	N	4.5	179	6.0	Y	1	Jacobson,E

DATE: 18 APR 1987

DATE: 18 APR 1987

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
18.781	821548	14.4	S		0.5	2			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	A
18.788	821549	14.2	S		0.5	3			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 19 APR 1987

DATE: 19 APR 1987

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
19.809	821550	14.3	S		0.7	3			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	A
19.816	821551	14.2	S		0.7	4			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 20 APR 1987

DATE: 20 APR 1987

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
20.21	821552	13.3	S	NPS	1.2	2		0.256	N	4.5	111	6.5	Y	3	Morris,C.S	A
20.806	821553	14.5	S		0.6	3		0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	B
20.813	821554	14.4	S		0.8	3		0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	B

NOTE A Comet surprisingly condensed with a knot or condensation in the center of the coma.

NOTE B Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 21 APR 1987

DATE: 21 APR 1987

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
21.736	821555	13.6				9			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	A
21.826	821556	13.7			0.5	8			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	B
21.847	821557	13.8			0.5	8			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	C
21.88	821558	12.5	S		2	0			0.300	N	5	62	5.5	Y	5	Scholten,A	
21.89	821559	12.6	S S	SEX	2.5	0			0.205	N	6	38	5.9	Y	1	van de Weg,R.L.W	D
21.910	821560	13.9			0.1	8			0.52	N	5.6	240	5.9	Y	1	Fleet,R.W	E

NOTE A C. cond. slightly fuzzy? Magnitude of almost stellar central condensation estimated as if it were a star, estimates of outer coma diameter uncertain because of intensity of central condensation. Change from previous night so marked that identification initially uncertain. Comparison star magnitudes derived from T Vir chart.

NOTE B Motion confirmed. Coma difficult. Outer coma diameter, averted vision coma diameter. Magnitude of almost stellar central condensation estimated as if it were a star, estimates of outer coma diameter uncertain because of intensity of central condensation. Change from previous night so marked that identification initially uncertain. Comparison star magnitudes derived from T Vir chart.

NOTE C Magnitude of almost stellar central condensation estimated as if it were a star, estimates of outer coma diameter uncertain because of intensity of central condensation. Change from previous night so marked that identification initially uncertain. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

NOTE D Unmistakable.

NOTE E C. cond. definitely fuzzy. Magnitude of almost stellar central condensation estimated as if it were a star, estimates of outer coma diameter uncertain because of intensity of central condensation. Change from previous night so marked that identification initially uncertain. Comparison star magnitudes derived from T Vir chart. Coma diameter uncertain.

DATE: 22 APR 1987

DATE: 22 APR 1987

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
22.778	821561	13.6	M		0.4	8			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A
22.788	821562	13.7	M		0.3	7			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	B

NOTE A Comparison star magnitudes derived from T Vir chart.

NOTE B 0.5' coma averted vision. Comparison star magnitudes derived from T Vir chart.

DATE: 23 APR 1987

DATE: 23 APR 1987

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
23.20	821563	12.7	S	SX LEO		1			0.20	N	6	163	5.5	Y	40	Hale,A	A
23.545	821564	14.0	M	X LEO	1	3			0.20	SC	10	222	4.0C	Y	1	Kato,T	
23.736	821565	13.5	M		0.4	7			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	B
23.753	821566	13.4	M		0.5	6			0.52	N	5.6	240	6.1	Y	1	Fleet,R.W	B

NOTE A Sky conditions only fair, the comet was small, faint and difficult. The observation was hurried due to oncoming clouds.

NOTE B 0.6' coma, averted vision. Comparison star magnitudes derived from T Vir chart.



DATE: 24 APR 1987

DATE: 24 APR 1987

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
24.17	821567	13.1	S	AAVSO	1.5	1			0.20	N	7	71		Y	2	Levy,D.H	
24.23	821568	12.6	S	Y VIR	0.5	6			0.20	N	6	163	7	Y	41	Hale,A	A
24.24	821569	12.8	M	Y VIR	0.5	6			0.61	C	15	300	7	Y	41	Hale,A	A
24.492	821570	14.2	M	X LEO	0.5	3			0.15	N	8.5	256	4.5C	Y	1	Kato,T	
24.799	821571	13.7	M		0.4	6			0.52	N	5.6	240	5.9	Y	1	Fleet,R.W	B

NOTE A Small, well condensed coma; the appearance of the comet was quite similar to that of P/Schwassman-Wachmann 1 during an outburst.

NOTE B 0.6' coma, averted vision. Comparison star magnitudes derived from T Vir chart. Haze.

DATE: 25 APR 1987

DATE: 25 APR 1987

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
25.22	821572	13.1	S	AUL UBV	0.9	0			0.25	N	4.5	179	6.0	Y	1	Jacobson,E	
25.757	821573	13.5	M		0.7	6			0.52	N	5.6	240	6.3	Y	1	Fleet,R.W	A
25.771	821574	13.5	M		0.7	6			0.35	N	5.5	100	6.2	Y	1	Fleet,R.W	A
25.781	821575	13.5	M		0.8	6			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	POV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
25.288	852168	1.270	4	0.318	1.6 x 1.1	20.00	Kodak Tri-X	400/	N	S	17/C	2	Edberg,S.J	A
25.303	852169	1.270	4	0.318	1.6 x 1.1	20.00	Ektachrome	200/	N	S	1/N	2	Edberg,S.J	B

NOTE A Definite nonstellar image.  
NOTE B Weak but detectable image.

DATE: 26 APR 1987

DATE: 26 APR 1987

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
26.15	821576	13.6	S	SA 57	0.9	1			0.406	C	18	229				Green,D.W.E	A
26.160	821577	13.9	S	S SEX	0.5	2			0.254	N	5.6	120	7.0	Y	1	Knight,S	B
26.18	821578	>12.5							0.20	N	6	163	5	Y	40	Hale,A	C
26.878	821579	13.8	S		0.5	4			0.52	N	5.6	240	5.8	Y	1	Fleet,R.W	D

NOTE A Coma diameter approximate.

NOTE B Detected motion 0:45.

NOTE C Negative search. Sky conditions quite poor; scattered clouds, high atmospheric moisture content and poor transparency.

NOTE D Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter. After rain.

DATE: 27 APR 1987

DATE: 27 APR 1987

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
27.12	821580	13.9	S	LNES	0.8	1			0.406	C	18	229		Y	1	Green,D.W.E	A
27.146	821581	13.8	S	S SEX	0.6	3			0.254	N	5.6	120	7.0	Y	1	Knight,S	B
27.21	821582	>12.5							0.20	N	6	163	5.5	Y	40	Hale,A	C
27.546	821583	14.2	M	X LEO					0.15	N	8.5	256	4.5C	Y	1	Kato,T	
27.826	821584	13.6	S		0.7	5			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	D
27.833	821585	13.7	S		0.7	4			0.52	N	5.6	240	6.1	Y	1	Fleet,R.W	D

NOTE A Coma diameter approximate.

NOTE B Detected motion 0:30.

NOTE C Negative search.

NOTE D Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 28 APR 1987

DATE: 28 APR 1987

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
28.760	821586	13.7	S		0.6	5			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	A
28.771	821587	13.7	S		0.7	5			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A
28.89	821588	12.8:	S	S SEX	2.5	0			0.205	N	6	38	5.9	Y	1	van de Weg,R.L.W	B
28.90	821589	12.5:	S		2	0			0.300	N	5	62	6.0	Y	5	Scholten,A	

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

NOTE B Not quite sure because close too the limited magnitude; danger for imagination! [sic] Coma diameter approximate.

DATE: 29 APR 1987

DATE: 29 APR 1987

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
29.475	821590	14.5	M	X LEO					0.15	N	8.5	256	4.0C	Y	1	Kato,T	
29.802	821591	13.6	S		0.8	4			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	A
29.816	821592	13.6	S		0.7	3			0.52	N	5.6	240	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 30 APR 1987

DATE: 30 APR 1987

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
30.778	821593	13.5	S		0.8	3			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A
30.788	821594	13.5	S		0.7	3			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 1 MAY 1987

DATE: 1 MAY 1987

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
1.806	821595	13.7	S		0.7	3			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	A
1.833	821596	13.7	S		0.7	3			0.52	N	5.6	240	6.0	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.



DATE: 2 MAY 1987

DATE: 2 MAY 1987

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
2.830	821597	13.9	S		0.6	3			0.52	N	5.6	240	6.0	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 15 MAY 1987

DATE: 15 MAY 1987

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
15.712	821598	14.7	S		0.3	3			0.52	N	5.6	240	6.1	Y	1	Fleet, R.W.	A

NOTE A Suspected only. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 17 MAY 1987

DATE: 17 MAY 1987

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
17.15	821599	>12.5							0.20	N	6	163	5	Y	40	Hale,A	A
17.757	821600	14.9	S		0.3	3			0.52	N	5.6	240	6.0	Y	1	Fleet,R.W	B

NOTE A Negative search. Sky conditions poor; fast-moving clouds.

NOTE B Suspected only. Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 18 MAY 1987

DATE: 18 MAY 1987

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
18.722	821601	14.8	S		0.5	2			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	A
18.726	821602	14.9	S		0.4	2			0.52	N	5.6	240	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 19 MAY 1987

DATE: 19 MAY 1987

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
19.733	821603	14.9	S		0.4	3			0.52	N	5.6	150	6.1	Y	1	Fleet,R.W	A
19.736	821604	15.0	S		0.4	3			0.52	N	5.6	240	6.1	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 20 MAY 1987

DATE: 20 MAY 1987

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
20.494	821605	15.5	M	X LEO	0.5	2			0.20	SC	10	160	5.0C	Y	1	Kato,T	
20.760	821606	14.7	S		0.5	2			0.52	N	5.6	150	6.0	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 21 MAY 1987

DATE: 21 MAY 1987

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
21.708	821607	15.0	S		0.5	3			0.52	N	5.6	240	6.2	Y	1	Fleet,R.W	A
21.715	821608	14.9	S		0.6	3			0.52	N	5.6	150	6.2	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 24 MAY 1987

DATE: 24 MAY 1987

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
24.19	821609	>13.0							0.20	N	6	163	6	Y	16	Hale,A	A
24.501	821610	14.5	M	X LEO					0.13	N	8	208	6.0C	Y	1	Kato,T	
24.520	821611	14.2	M	X LEO	0.5	4			0.20	SC	10	286	6.0C	Y	1	Kato,T	
24.740	821612	15.1	S		0.3	3			0.52	N	5.6	240	6.0	Y	1	Fleet,R.W	B

NOTE A Negative search.

NOTE B Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.



DATE: 25 MAY 1987

DATE: 25 MAY 1987

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
25.719	821613	14.8	S		0.4	4			0.52	N	5.6	240	6.1	Y	1	Fleet, R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 26 MAY 1987

DATE: 26 MAY 1987

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
26.736	821614	15.0	S		0.5	3			0.52	N	5.6	150	6.0	Y	1	Fleet,R.W	A
26.740	821615	14.9	S		0.5	3			0.52	N	5.6	240	6.0	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. Averted vision coma diameter.

DATE: 27 MAY 1987

DATE: 27 MAY 1987

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
27.17	821616	>13.5							0.41	N	4.5	244	6	Y	40	Hale,A	A

NOTE A Negative search.

DATE: 28 MAY 1987

DATE: 28 MAY 1987

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)
28.486	821617	14.3	M	U GEM	0.5	3			0.15	N	8.5	142	5.0C	Y	1	Kato,T

DATE: 29 MAY 1987

DATE: 29 MAY 1987

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
29.21	821618	13.3	S	NPS	1	3			0.256	N	4.5	156	6.0	Y	3	Morris,C.S	A

NOTE A Comet obvious with faint ( $m_2 = 14.0$ ) stellar condensation. Coma diameter may have been as large as 1.5'.

DATE: 30 MAY 1987

DATE: 30 MAY 1987

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)
30.18	821619	13.8	S	AAVSO	1.5	0			0.60	N	4			Y	3	Levy,D.E

DATE: 1 JUN 1987

DATE: 1 JUN 1987

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
1.17	821620	>13.0							0.41	N	4.5	244	5.5M	Y	40	Hale,A	A

NOTE A Negative search. Attempt slightly affected by crescent moon in sky.

DATE: 15 JUN 1987

DATE: 15 JUN 1987

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
15.17	821621	>13.5							0.41	N	4.5	244	6	Y	40	Hale, A	
15.21	821622	13.8:	S		1	0			0.318	N	4	100	5.0	Y	3	Morris, C.S	A
15.72	821623	>15.0							0.52	N	5.6	240	6.0	Y	1	Fleet, R.W	B

NOTE A Comet could not have been fainter than 14.0. Comet also detected in 25.6 cm f/4.5 reflector (111x, 156x).

NOTE B Comparison star magnitudes derived from T Vir chart. The magnitude limit given is the approximate limit for a star defocussed to about 0.2' arc, the stellar limit was nearer 16.0. Comet not seen.



DATE: 16 JUN 1987

DATE: 16 JUN 1987

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
16.18	821624				2	0			0.914	N				Y	4	Levy,D.H	
16.72	821625	>15.0							0.52	N	5.6	240	6.0	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. The magnitude limit given is the approximate limit for a star defocussed to about 0.2' arc, the stellar limit was nearer 16.0. Comet not seen.

DATE: 17 JUN 1987

DATE: 17 JUN 1987

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
17.19	821626	13.9	S	SAO	2	0			0.914	N	7.5	274		Y	4	Levy,D.H	
17.72	821627	>15.0							0.52	N	5.6	240	5.9	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. The magnitude limit given is the approximate limit for a star defocussed to about 0.2' arc, the stellar limit was nearer 16.0. Comet not seen.

DATE: 18 JUN 1987

DATE: 18 JUN 1987

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
18.72	821628	>15.0							0.52	N	5.6	240	5.9	Y	1	Fleet, R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. The magnitude limit given is the approximate limit for a star defocussed to about 0.2' arc, the stellar limit was nearer 16.0. Comet not seen.

DATE: 23 JUN 1987

DATE: 23 JUN 1987

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
23.71	821629	>15.0							0.52	N	5.6	240	5.9	Y	1	Fleet, R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. The magnitude limit given is the approximate limit for a star defocussed to about 0.2' arc, the stellar limit was nearer 16.0. Comet not seen.

DATE: 25 JUN 1987

DATE: 25 JUN 1987

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
25.72	821630	>15.0							0.52	N	5.6	240	5.8	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. The magnitude limit given is the approximate limit for a star defocussed to about 0.2' arc, the stellar limit was nearer 16.0. Comet not seen.

DATE: 27 JUN 1987

DATE: 27 JUN 1987

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
27.71	821631	>15.0							0.52	N	5.6	240	5.9	Y	1	Fleet, R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. The magnitude limit given is the approximate limit for a star defocussed to about 0.2' arc, the stellar limit was nearer 16.0. Comet not seen.

DATE: 28 JUN 1987

DATE: 28 JUN 1987

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
28.70	821632	>15.0							0.52	N	5.6	240	5.8	Y	1	Fleet, R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. The magnitude limit given is the approximate limit for a star defocussed to about 0.2' arc, the stellar limit was nearer 16.0. Comet not seen.

DATE: 29 JUN 1987

DATE: 29 JUN 1987

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
29.72	821633	>15.0							0.52	N	5.6	240	5.8	Y	1	Fleet,R.W	A

NOTE A Comparison star magnitudes derived from T Vir chart. The magnitude limit given is the approximate limit for a star defocussed to about 0.2' arc, the stellar limit was nearer 16.0. Comet not seen.



DATE: 19 NOV 1987

DATE: 19 NOV 1987

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)
19.52	821634	14.6	S	AAVSO		0			1.549	N	13.5	654		Y	5	Levy,D.H

DATE: 20 NOV 1987

DATE: 20 NOV 1987

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)
20.53	821635	14.4	S	AAVSO		0			1.549	N	13.5	654		Y	5	Levy,D.H

DATE: 1 DEC 1987

DATE: 1 DEC 1987

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
1.34	821636	12.5	S	T VIR	1.4	0			0.256	N	4.5	111	7.0	Y	3	Morris,C.S	A

NOTE A Difficult observation - comet was close to a star.

DATE: 21 DEC 1987

DATE: 21 DEC 1987

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)
21.45	821637	15.3	S	AAVSO	0.8	2			1.549	N	13.5	654		Y	5	Levy,D.H

DATE: 15 JAN 1988

NETWORK: AMATEUR OBSERVATION

DATE: 15 JAN 1988

SUB-NETWORK: VISUAL APPEARANCE

Date(UT)	ACN#	ml	MM	Chart	Coma size	DC	Tail	PA	Ap	Ins	f/	Pwr	Lim	DA	Site	Observer(s)
15.44	821638	15.8	S	AAVSO	0.3	1			1.549	N	13.5	654		Y	S	Levy,D.H

DATE: 14 FEB 1988

DATE: 14 FEB 1988

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
14.43	821639	>15.0	V						0.254	N	6.8		6.5	Y	2	Edberg,S.J	A

NOTE A Comet not seen. Estimate based on in-focus stars. Several magnifications used.

DATE: 16 FEB 1988

DATE: 16 FEB 1988

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: PHOTOGRAPHY

Date(UT)	AON#	FL	f/	Ap	FOV	ExpM	Emulsion	ISO	Hyp	Gdng	Id/Typ	Site	Observer(s)	Notes
16.902	852170	0.300	1.5	0.200	6.9 x 4.6	27.00	Ektagraphic	25/	Y		101/P		Jager,M	A

NOTE A Possible observation. Magnitude 16. Film is Ektagraphic EC (ortho).

DATE: 23 FEB 1988

DATE: 23 FEB 1988

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
23.32	821640	16.8	S	SAO	0.8	1			1.549	N	13.5	654		Y	5	Levy,D.H	
23.39	821641	>16.5	S		0.5	0			1.549	C	13.5	550	5.5	Y	4	Morris,C.S	A

NOTE A Comet may have been glimpsed. ml fainter than 16.5.