

# Dramatic Eruption on Comet Halley

This photo shows the enormous outburst of Comet Halley, as observed by ESO astronomers Olivier Hainaut and Alain Smette with the Danish 1.54-m telescope at La Silla on February 12–14, 1991. At this moment the comet was about 14.3 A.U. (2140 million km) from the Sun and 13.4 (2002 million km) from the Earth. The image is a combination of eight individual CCD Johnson-V exposures with a total exposure time of just over 7 hours.

Comet Halley's nucleus is completely hidden within a diffuse dust cloud (the "coma") that is seen as a bright light point at the centre; the magnitude is  $V \sim 21.5$ . From here, dust is dispersed into surrounding space; the parabolic shape of the faint, outer contour and the arc-like structure are thought to result from the complex motions of the individual dust particles. The central part of the dust cloud measures more than 30 arcseconds (300,000 km projected) across, but faint contours can be followed much further out. The total brightness of the cloud is about 19, or about 300 times brighter than the predicted magnitude of the nucleus alone, about 25.3. No outburst of a comet has ever been observed at such a large distance from the Sun.

North is up and East is to the left; 1 pixel = 0.464 arcsecond; field size: 153 × 153 pixels, i.e. 71 × 71 arcseconds or



~ 700,000 × 700,000 km at the distance of Halley. The telescope was set to follow the comet's motion (directed at 72° West of North) and several star trails crossed the image of Halley. The

projected direction to the Sun is 15° West of South. To produce this photo, the frames were individually cleaned with the ESO IHAP image processing system. The editor

## Visiting Astronomers

(April 1–October 1, 1991)

Observing time has now been allocated for Period 47 (April 1–October 1, 1991). The demand for telescope time was again much greater than the time actually available.

The following list gives the names of the visiting astronomers, by telescope and in chronological order. The complete list, with dates, equipment and programme titles, is available from ESO, Garching.

### 3.6-m Telescope

*April:* van der Hucht/Thé/Williams, Courvoisier/Bouchet/Robson, Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Grenier/Ögelman/Gouiffes, Gouiffes/Ögelman/Augusteijn, Reimers et al. (2-009-45K), Reimers/Koester, Prieto/Benvenuti, Chincari/Buzzoni/Molinari, Turatto et al. (4-004-45K), Danziger/Bouchet/Gouiffes/Lucy/Fransson, Mazzali/Della Valle, Hutsemékers/van Drom.

*May:* Malbet/Bertout/Léna/Rigaut/Merkle/Lagrange-Henri, Miley et al. (2-001-43K), van Drom/Hutsemékers, Giraud/Melnick/Steppe/Gopal-Krishna, Turatto et al. (4-004-45K), Danziger/Bouchet/Gouiffes/Lucy/Fransson/

Mazzali/Della Valle, Mathys/Maeder, Barbuy/Silk/François, Baade/Crane, Hensberge et al. (5-005-45K).

*June:* Gratton/Snedden, Andreae/Drechsel, di Serego Alighieri/Fosbury/Schlötelburg, Mirabel/Lutz/Dottori, Schmid/Schild, Gay/Le Bertre/Lefèvre/Lopez/Perrier, Richichi/Lisi/Di Giacomo, Vladilo/Centurion.

*July:* Vidal-Madjar/Ferlet/Gry, Ferlet/Vidal-Madjar/Dennefeld, Renzini/Greggio/Bragaglia, Penninx/Augusteijn/van der Klis/Kuulkers, Chambers/van Breugel/Dey, Tsvetanov/Fosbury/Tadhunter, Tsvetanov/Wilson/Fosbury, Habing et al. (5-007-45K).

*August:* Meisenheimer/Wagner, Turatto et al. (4-004-45K), Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Macchetto/Sparks, Véron/Hawkins, Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Cetty-Véron/Véron, Webb/Shaver/Carswell, Westerlund/Pettersson/Edvardsson, Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle.

*September:* Vettolani et al. (1-019-47K), Borra/Sanvico/Cristiani/Levesque/Shaver, Hammer/Petrosian/Le Fevre/Angonin, Turato et al. (4-004-45K), Danziger/Bouchet/

Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Hes/Fosbury/Barthel, Gouiffes/Ögelman/Augusteijn, Danziger/Bouchet, Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Habing et al. (7-008-47K).

### 3.5-m NTT

*April:* Tammann et al. (1-022-47K), Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Bergvall/Rönnback, Ortolani/Rosino/Renzini, Tarengi/D'Odorico/Wampler/Yoshii/Peterson/Silk, Zinnecker/Melnick/Moneti, Reipurth/Zinnecker, Moorwood/Oliva.

*May:* Oliva/Morwood, Danziger/Moorwood/Oliva, Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Dettmar/Shaw/Dahlem, Tamman et al. (1-022-47K), Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Bignami et al. (6-002-45K), Tammann et al. (1-022-47K), Bandiera/Della Valle, Bender et al. (1-004-43K), Tammann et al. (1-022-47K), Bandiera/Della Valle, Dejonghe/Zeilinger, Schönberner/Napiwotzki/Jordan, Tammann et al. (1-022-47K), Bandiera/Della Valle, Spite F./Rebolo/Molaro/Nissen/Spite M., Koornneef/Israel.



## VACANCIES ON LA SILLA

### STAFF ASTRONOMER

A position of staff astronomer will become available on La Silla in the second half of 1991. This position is open to experienced astronomers with a Ph.D. degree or equivalent and several years of post-doctoral experience in the area of high dispersion spectroscopy.

The successful applicant will be in charge of the high dispersion spectrographs on La Silla. This includes

- introducing visitors to the use of the instrumentation,
- writing and updating User's manuals,
- regularly testing the performance of the equipment, and
- interacting with the technical people regarding modifications and up-dates of the instrumentation. As members of the Astronomy Support Department on La Silla, staff astronomers are required to spend at least 50 % of their time on support activities and the remainder conducting original research.

Staff posts are tenure track positions, normally offered for an initial period of 3 years that may be renewed for a second period of 3 years. Tenure may be granted during the second term of the staff contract.

The successful applicant will have an excellent opportunity of participating in the commissioning phases of the VLT.

Applications should be submitted to ESO Personnel Administration and General Services at ESO-Garching before **31 May 1991**.

### FELLOWSHIPS

Two post-doctoral fellowships are offered on La Silla starting during the second half of 1991. These positions are opened to young astronomers with an interest in Optical or Infrared observational work. The ESO fellowships are granted for a period of one year, normally renewed for a second and exceptionally for a third year.

Successful applicants will be required to spend 50 % of his/her time doing support activities and 50 % of the time on research.

Applicants normally should have a doctorate awarded in recent years. Applications should be submitted to ESO not later than 15 May 1991. Applicants will be notified by July 1991. The ESO Fellowship Application Form should be used and be accompanied by a list of publications. In addition, three letters of recommendation should be obtained from persons familiar with the scientific work of the applicant. These letters should reach ESO not later than **15 May 1991**.

The Astronomy Support Department on La Silla is composed of about 20 astronomers including staff, fellows, and students. The research interests of the members of the staff include low mass star formation, formation and evolution of massive stars and starbursts, post-AGB stellar evolution and planetary nebulae, supernovae, active nuclei, high redshift galaxies and galaxy clusters. Staff members and senior fellows act as co-supervisors for students of European universities that spend up to 2 years on La Silla working towards a doctoral dissertation.

Enquiries, requests for application forms and applications should be addressed to:  
European Southern Observatory  
Fellowship Programme  
Karl-Schwarzschild-Straße 2  
D-8046 GARCHING b. München  
Germany

*June:* Koornneef/Israel, Käufel/Stanghellini/Renzini, Gredel, Buonanno/Fusi Pecci/Corsi/Richer/Fahlmann, Tammann et al. (1-022-47K), Bertola/Bertin/Buson/Danziger/Dejonghe/Saglia/Sadler/Stiavelli/de Zeeuw/Zeilinger, Tammann et al. (1-022-47K), Richtler/Wagner/Held/Capacciolo, Tammann et al. (1-022-47K), Haefner/Simon/Pfeiffer/Sturm/Fiedler, Glass/Moorwood/Monet.

*July:* Schwarz/Sahai, Ferraro/Brocato/Molaro, Murphy/Verbunt/Rutten/van Paradijs/Cohn/Lugger/Seitzer/Callanan/Charles, Borkowski/Tsvetanov/Harrington, Surdej et al. (2-003-43K), Aurière/Lauzeral/Koch-Miranda.

*August:* Meylan/Djorgovski/Shaver/Weir, Giallongo/Buson/Cristiani/Trevese, Mellier/Fort/Soucail/Ellis, Fort et al. (1-015-45K) Moeller/Jacobsen/Perryman, Capaccioli/Caon/Lorenz/Richter, Cappellaro/Capaccioli/Held/Ferrario, Boer/Motch/Pedersen.

*September:* Tarengi/D'Odorico/Wampler/Yoshii/Peterson/Silk, Wampler et al. (2-010-45K), Bergeron et al. (1-012-43K), Surdej et al. (2-003-43K), Smette/Surdej/Shaver, Christensen/Sommer-Larsen/Hawkins/Flynn, Leitherer/Drissen/Nota/Robert/Schmutz, Molano/Castelli/Bonifacio, Boisson/Joly/Moorwood/Oliva/Ward, Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Ögelmann/Danziger/Gouiffes/Augusteijn/Carollo / Bouchet, Danziger / Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, De Lapparent et al. (1-003-43K).

### 2.2-m Telescope

*April:* Blommaert/Habing/van der Veen, Infante/Melnick/Lucey/Terlevich/Lahav/Lynden-Bell, Surdej et al. (2-003-43K), Barucci/Fulchignoni/Harris/De Angelis/Foryta/Burchi/Dotto/Rotundi/Di Martino, Barbieri et al. (2-007-43K), Turatto et al. (4-004-45K), Zeilinger/Buson/Galletta/Saglia, MPI TIME.

*May:* MPI TIME.

*June:* Oosterloo/Prieur, Zeilinger/Bertola/Buson, Barucci/Fulchignoni/Harris/De Angelis/Foryta/Burchi/Dotto/Rotundi/Di Martino, Richtler/Kaluzny, Habing/Epchtein/Blommaert/van Langevelde/Le Berre/Winnberg/Lindqvist/van der Veen, Glass/Moorwood/Monet/Schwarz/Monet.

*July:* Habing/Epchtein/Blommaert/van Langevelde/Le Berre/Winnberg/Lindqvist/van der Veen, Barucci/Fulchignoni/Harris/De Angelis/Foryta/Burchi/Dotto/Rotundi/Di Martino, Surdej et al. (2-003-43K), Tosi/Focardi/Greggio/Marconi, Bertola et al. (1-008-43K), Rosa/Kinkel, De Jong/van der Kruit.

*August:* De Jong/van der Kruit, Giard/Bernard/Dennefeld/Verstraete, Barucci/Fulchignoni/Harris/De Angelis/Foryta/Burchi/Dotto/Rotundi/Di Martino, Infante/Melnick/Lucey/Terlevich/Lahav/Lynden-Bell, Surdej et al. (2-003-43K), Bender et al. (1-004-43K), Turatto et al. (4-004-45K), Barbieri et al. (2-007-43K), MPI TIME.

*September:* MPI TIME, Robert/Drissen/Leitherer/Nota/Schmutz, Mirabel/Lagage/Cesarsky, Habing et al. (7-008-47K).

### 1.5-m Spectrographic Telescope

*April:* Courvoisier/Bouchet/Blecha, Pagel/Terlevich/Diaz/Vilchez/Edmunds, Barbieri et al. (2-007-43K), Joergensen/Rasmussen/Franx, Caon/Capaccioli/Ferrario.

*May:* Krautter/Schmitt/Alcala/Henning, Dettmar/Krenz/Barteldrees, Bettoni/Bertola/Buson, Paturel et al. (1-017-45K), Hensberge et al. (5-005-45K), Mantegazza/Ferro.

*June:* Mantegazza/Ferro, Andreae/Drechsel, Goudfrooij/de Jong/Jørgensen/Noergaard-Nielsen/Hansen/van de Hoek, Courvoisier/Bouchet/Blecha, Acker/Cuisinier/Köppen/Stenholm/Terzan, Pottasch/Manchado/Garcia-Lario/Sahu K.C., Thé/de Winteler/Bibo, Sinachopoulos.

*July:* Sinachopoulos, Lorenz/Drechsel/Mayer, Rampazzo/Prugniel/Bica/Sulentic, de

Boer/Moehler, Habing et al. (5-007-45K), Lorenz/Drechsel/Mayer, Favata/Sciortino/Micela.

*August:* Luthardt/Bues, Cristiani/Giallongo/La Franca/Sanvico/Vagnetti, Barbieri et al. (2-007-43K), Iijima/Rosino, Gerbaldi et al. (5-004-43K), Ballereau/Chauville/Zorec.

*September:* Fouqué/Quintana/Proust, Bragaglia/Greggio/Renzini, Gerbaldi et al. (5-004-43K).

### 1.4-m CAT

*April:* Pols/van den Heuvel/Piters/Coté/Waters, Tagliaferri/Cutispoto, Giommi/Pallavicini/Pasquini, Pasquini, Gratton/Snedden, West/Sahade/Sulskij.



*May:* Benvenuti/Porceddu/Krelowski, Franchini/Covino/Alcalá/Chavarria/Terranegra/Ferluga/Stalio/Pasquini, Gosset, van Dishoeck/Black, Gosset, Nussbaumer/Schmutz/Schmid, Pottasch/Sahu K.C.

*June:* Pottasch/Sahu K.C., Pottasch/Parthasarathy, Sabbadin/Cappellaro/Turatto/Salvadori, Faraggiana/Castelli/Molaro/Gerbaldi, Pallavicini/Duncan/Randich/Tagliaferri, Pallavicini/Randich.

*July:* Ferlet/Vidal-Madjar/Dennefeld, Lagrange-Henri/Jaschek M./Jaschek C., Lagrange-Henri/Bouvier/Gomez/Bertout, Sembach/Crane/Danks/Savage, Pogodin, van Paradijs/Verbunt/Zwaan/Rutten/Schrijver/Schmitt/van Kerkwijk/Piters, Nussbaumer/Schmutz/Schmid.

*August:* Nussbaumer/Schmutz/Schmid, Bossi/Guerrero/Scardia, Favata/Sciortino/Micela, Monai/Molaro/Vladilo, Jorissen/Lambert/Tomkin, da Silva/Vasques.

*September:* da Silva/Vasques, Pols/van den Heuvel/Piters/Coté/Waters, Nussbaumer/Schmutz/Schmid.

### 1-m Photometric Telescope

*April:* van der Hucht/Thé/Williams, Hron, Courvoisier/Bouchet/Blecha, Tagliaferri/Cutispoto/Giommì/Pallavicini/Pasquini, Weiss/Schneider/Kuschnig/Rogl, Le Bertre et al. (5-006-45K).

*May:* Le Bertre et al. (5-006-45K), Courvoisier/Bouchet/Blecha, Di Martino/Mottola/Gonano/Neukum, Di Martino/Mottola/Gonano/Hoffmann/Neukum, Barucci/Fulchignoni/Harris/De Angelis/Foryta/Burchi/Dotto/Rotundi/Di Martino, Courvoisier/Bouchet/Blecha, Habing et al. (5-007-45K).

*June:* Habing et al. (5-007-45K), Cayrel/Buser, Fulchignoni/Barucci/De Angelis/Burchi/Dotto/Ferrari/Foryta/Roques, Richichi/Lisi/Di Giacomo, Le Bertre et al. (5-006-45K).

*July:* Le Bertre et al. (5-006-45K), Courvoisier/Bouchet/Blecha, Terzan, Liller/Alcaino/Alvarado/Wenderoth.

*August:* Augusteijn/van Paradijs, Hainaut/Detal/Pospieszalska-Surdej/Schils/Surdej/West, Habing et al. (5-007-45K), Prugniel/Rampazzo/Combes/Sulentic/Zhonggi.

*September:* Prugniel/Rampazzo/Combes/Sulentic/Zhonggi, Rampazzo/Prugniel/Combes/Sulentic/Zhonggi, Lorenzetti/Molinari.

### 50-cm ESO Photometric Telescope

*April:* Haefner/Pietsch/Schwarzenberg-Czerny, Arlot/Thuillot/Descamps/Vu/Colas, Surdej/Detal/Hainaut/Pospieszalska-Surdej/Schils, Arlot/Thuillot/Descamps/Vu/Colas.

*May:* Franchini/Covino/Alcalá/Chavarria/Terranegra/Ferluga/Stalio/Pasquini, Arlot/Thuillot/Descamps/Vu/Colas.

*June:* Arlot/Thuillot/Descamps/Vu/Colas, Thé/Westerlund/Fluks, Thé/de Winter/Bibo.

*July:* Arlot/Thuillot/Descamps/Vu/Colas, Lorenz/Drechsel/Mayer, Bruch/Schwarzenberg-Czerny, Debehogne/Lagerkvist/Magnusson/Di Martino/Zappalà/De Campos/Cutispoto.

*August:* Debehogne/Lagerkvist/Magnusson/Di Martino/Zappalà/De Campos/Cutispoto, Luthardt/Bues, Hainaut/Detal/Pospieszalska-Surdej/Schils/Surdej/West.

*September:* Poretti/Antonello/Mantegazza, Leitherer/Drissen/Nota/Robert/Schmutz.

### GPO 40-cm Astrograph

*April:* Kohoutek/Bönnhardt.

*June:* Seitter/Aniol/Duerbeck/Tsvetkov/Tsvetkova, Debehogne/Machado, Caldeira/Vieira/Netto/Zappalà/De Sanctis/Lagerkvist/Mourao/Protitch-Benishek/Javanshir/Woszczyk/Lopez.

*July:* Debehogne/Machado, Caldeira/Vieira/Netto/Zappalà/De Sanctis/Lagerkvist/Mourao/Protitch-Benishek/Javanshir/Woszczyk/Lopez.

*August:* Elst.

*September:* Vidal-Madjar et al.

### 1.5-m Danish Telescope

*April:* Nordström/Andersen, Jørgensen/Rasmussen/Franx, Danziger/Bouchet/Gouiffes, Lucy/Fransson/Mazzali/Della Valle, Quintana/Ramirez, D'Onofrio, Caon/Capacciolo/Ferrario, Bergvall/Rönneback, Ortolani/Barbuy/Bica, Mayor et al. (5-001-43K).

*May:* DANISH TIME, Duquenois/Mayor, Waelkens/Mayor.

*June:* Moffat/Pirola, van der Klis/Penninx/Kuulkers/van Paradijs, Infante/Melnick/Lucey/Terlevich/Lahav/Lynden-Bell, Grebel/Richtler. DANISH TIME.

*July:* DANISH TIME, Mermilliod/Mayor, Ardeberg/Lindgren/Lundström.

*August:* Danziger/Bouchet/Gouiffes/Lucy/Fransson/Mazzali/Della Valle, Barbieri et al. (2-007-43K), Lindgren, Azzopardi/Lequeux/Reiberoit, Shanks/Fong/Metcalf, DANISH TIME.

*September:* DANISH TIME, Mayor et al. (5-001-43K), Danziger/Bouchet/Gouiffes, Lucy/Fransson/Mazzali/Della Valle.

### 50-cm Danish Telescope

*April:* DANISH TIME.

*May:* Mennickent/Vogt/Covarrubias, Maitzen, Leone/Catalano/Jenkner.

*June:* Mantegazza/Ferro, Group for Long Term Photometry of Variables.

*July:* Sinachopoulos, Group for Long Term Photometry of Variables.

*August:* Favata/Sciortino/Micela, Ardeberg/Lindgren/Lundström, Group for Long Term Photometry of Variables.

*September:* Group for Long Term Photometry of Variables.

### 90-cm Dutch Telescope

*April:* Rifatto/Bussoletti/Mennella/Buson/Zeilinger/Colangeli/DUTCH TIME.

*May:* DUTCH TIME.

*June:* Wendker/Heske, Houdebine/Butler/Mathioudakis/Panagi/Foing/Char/Jankov/Rodono, Augusteijn/van Paradijs.

*August:* Ferrari/Bucciarelli/Massone/Koornneef/Lasker/Le Poole/Postman/Siciliano/Lattanzi, Schuecker/Cunow, DUTCH TIME.

*September:* DUTCH TIME

### SEST

*May:* Israel, Wu, Israel.

*July:* Wielebinski, Becker, Casoli, Wild, Freudling, Huchtmeier, Dupraz, van Woerden, Eckart, van der Blik.

*August:* F. Combes, Mauersberger, Franceschini, Andreani, Danziger, Henkel, Cas-tets, Zinnecker, Bronfman, Krügel, Pollacco, Bertout.

## Minor Planet Named after Guido and Oscar Pizarro!

A minor planet in the solar system has recently been named after two night assistants at the ESO La Silla observatory as a well-deserved recognition of their great efforts to serve astronomers in the ESO member countries and beyond. In the January 30, 1991 issue of the *Minor Planet Circulars*, the following text appears on page 17658:

"(4609) Pizarro = 1988 CT3  
Discovered 1988 Feb. 13 by E.W. Elst at the European Southern Observatory.

Named in honour of Guido and Oscar Pizarro, who operate the ESO 1-m Schmidt telescope and who exposed the plates on which this minor planet was discovered. For almost 20 years the two brothers have been renowned for

their patient and effective work with the telescope. They took the plates for the two ESO sky surveys and have taken several thousand plates for general programmes, including many specifically for the detection and follow-up of comets and minor planets. Citation prepared by H.-E. Schuster at the request of the discoverer."