efficiently organized, collective study of long-term photometric variables.

In summary then, the OPC only rarely specifically rejects an Application, and then only because of obvious faults. In general its procedures lead to selection by ranking: given the observing time available, only the best Applications can be accommodated. Furthermore, the OPC Members make a conscious effort to seriously consider innovatory, but risky proposals – even if they are rather time-consuming. All the time, measures are taken to minimize bias, at least in the long run.

Scheduling Observations

The actual scheduling of the best-ranked Applications on the various telescopes is done by ESO, immediately following the OPC Meeting. This is a complex task: many observing Applications propose the use of more than one telescope and focal-plane instrument, and other Applications have time constraints. Many multi-frequency investigations, for example, require the simultaneous use of other observatories on the ground or in space. And there are also single opportunities – stellar occultations, by planets or their moons, for example – that can only be observed in a single, predetermined night.

In addition, the schedule must be optimized, to avoid all-too frequent changes of focal-plane instruments on any one of the telescopes. This is a much more severe constraint than one would at first assume: in some cases it may result in no time being allocated to a well-rated programme.

The wide choice of auxiliary equipment that ESO offers on most of its telescopes requires grouping programmes that make use of the same instrumentation. This is necessary for efficient scheduling, because any exchange of focal-plane instruments brings a loss of observing time. In the case of infrared equipment at the 3.6 m telescope, for example, one loses a minimum of two nights: a special top end has to be installed and later on removed, both operations requiring delicate mechanical and optical adjustments. Consequently, such an instrument will not be mounted for one short observation, because the associated loss of telescope time to the community is of the same order as that gained for a single user.

Finally, the use of some detectors requires special technical assistance during the observations – and for infrared work this means night- and day-time assistance. Proper scheduling of the needed staff specialists then becomes an additional limiting factor. One will thus understand that, given all these limitations, the allotment of observing time can be a best compromise only.

The final Observing Schedule is approved by the Director General; he may occasionally make minor changes in order to redress extreme national imbalances. About two weeks after the OPC meeting, the applicants are informed about the outcome of their Applications and the observing Schedule is published.

Starting with Observing Period 38, negative replies to applicants may contain an indication on the OPC judgement of their observing proposals. There are three categories: "near", "below" and "far below the cutoff line". This scheme was introduced as the OPC's response to a wish expressed by many astronomers through the Users Committee.*

* The OPC, unfortunately, does not see a possibility to fulfil the repeatedly expressed wishes for a detailed justification of the ranking of all Applications. The OPC Members will, however, follow up inquiries by applicants from their country on a case-by-case basis.

It is hoped that prospective telescope users can see from the above description that considerable peer-pressure – becoming manifest in the OPC Meetings – forces the Members to do their homework conscientiously, judiciously and honestly; and that the OPC concentrates on scientific issues exclusively. In fact, this is probably the most striking aspect of the OPC Meetings. It certainly does impress new Members.

Undoubtedly, the OPC bears a heavy responsibility towards the community and, accordingly, the work of the OPC Members is very challenging and interesting. The present workload of the Members is close to the acceptable limit, though: if the semiannual two-day meetings are included, the time a Member spends on OPC work easily reaches three weeks or even a full month every year!

The OPC will always aim to maintain a standard of excellence in Observing Programmes. But ultimately, the OPC's success only manifests itself in a healthy, vigorous and successful research in all parts of the ESO community.

Visiting Astronomers

(October 1, 1986 – April 1, 1987)

Observing time has now been allocated for Period 38 (October 1, 1986 – April 1, 1987). As usual, 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

October 1986: Shaver/Clowes/Iovino, Mighell/Butcher/Buonanno/Gathier, Jörsäter/Bergvall, Bergeron/D'Odorico, Magain, Spitze F./Spite M./François, Heber/Hunger, Véron, Pickles/van der Kruit.

November 1986: Pickles/van der Kruit, Fort/Mathez/Mellier/Picat/Soucail, Chincarini/Manousoyannaki, Moorwood/Oliva, Danziger/Oliva/Moorwood, Rodriguez/Moorwood/Stanga, Israel/Koornneef, Reipurth/Le Bertre, Natta/Hunt/Vietri, Schulte-Ladbeck/Becker/Appenzeller/Leitherer, Marano/Zitelli/Zamorani, Nesci/Perola, Colina/Fricke/Kollatschny/Pérez-Fournon.

December 1986: Colina/Fricke/Kollatschny/Pérez-Fournon, Danziger/Rosa/Matteucci, Lequeux/Azzopardi/Comte, Lequeux/Azzopardi/Maeder/Mathys, Kudritzki/Humphreys/Groth/Butler/Steenbock, de Loore/David/Hensberge/Verschueren/Blaauw, Cristiani/Barbieri/Iovino/Nota, Krautter/Baade, Martinet/Jarvis/Pfenniger/Bacon.

January 1987: Martinet/Jarvis/Pfenniger/Bacon, Pakull/Angebault/Bianchi/Beuermann/Motch, Tanzi/Bouchet/Falomo/Maraschi/Treves, Westerlund/Petterson, Moneti/Natta/Stanga, Zadrozny/Leggett/Perrier, Léna/Leger/Mariotti/Perrier, Meisenheimer/Röser, Meisenheimer/Fugmann, Cristiani/Barbieri/Iovino/Nota, Röser/Meisenheimer, Grosbøl/Brosch/Greenberg, Bignami/Caraveo/Vigroux.

February 1987: Bignami/Caraveo/Vigroux, D'Odorico/Pettini, di Serego Alighieri/Tadhunter, Rodonò/Cutispoto/Ambruster/Haisch/Butler/Scaltriti/Vittone, Hessman/Mundt, Gratton/Ortolani, Wampler, Danziger/Fosbury/Gathier, Danziger/Dalgarno, Danziger/Fusbury/Tadhunter, Danziger/Binette/Matteucci.

March 1987: Danziger/Binette/Matteucci, Jarvis/Martinet, Schmutz/Hamann/Hunger/Wessolowski, Dennefeld/Désert, Israel/van Dishoeck, Stanga/Garay/Moorwood/Oliva/Rodriguez, Pottasch/Mampaso/Manchado, Röser/Meisenheimer, Bergeron/Boissé.

2.2-m Telescope

October 1986: Mighell/Butcher/Gathier/Buonanno, Franx/Illingworth, di Serego Alighieri/Shaver/Cristiani/Perryman/Bergeron/Macchetto, Perryman/Jakobsen, Schulz/Rafanelli/di Serego Alighieri.

November 1986: Surdej/Swings/Magain/Courvoisier/Kühr/Djorgovski, Grewing/Barnstedt/Nerri/Bianchi/Lenhard, Prangé/Gérard/Paresce/Vidal-Madjar, Paresce/Burrows/Vidal-Madjar/Lamers/Waters, Jakobsen/Perryman.

December 1986: Jakobsen/Perryman, Fusi Pecci/Buonanno/Corsi/Renzini, Melnick/Terlevich/Moles, Rodriguez/Binette, Stahl/Wolf/Zickgraf, Sommer-Larsen/Christensen, Martinet/Jarvis/Pfenniger/Bacon, Meylan/Djorgovski, Bertola/Zeilinger.

January 1987: Bertola/Zeilinger, Fricke/Hartmann/Loose, Westerlund/Pettersson, Dennefeld/Bottinelli/Gouguenheim/Martin/Le Squeren, de Bruyn/Stirpe, Bässgen M./Bässgen G./Grewing/Bianchi, Seitter/Duerbeck, Reipurth, Ulrich/Iye/Perryman, Jakobsen/Perryman, Vio/Barbieri/Cristiani, Tarrab/Kunth/Arnault/Vigroux/Prieto/Wamsteker.

February 1987: Tarrab/Kunth/Arnault/Vigroux/Prieto/Wamsteker, Keel, Seitter/Duerbeck.

March 1987: Ilovaisky/Chevalier/Angebault/Mouchet/Pedersen, Dettmar/Wielebinski, Labhardt/Spaenhauer, Lyngå/Gustafsson.

1.5-m Spectrographic Telescope

October 1986: Cacciari/Clementini/Malagnini, Bues/Rupprecht, Wagner/Appenzeller, Viton/Prévot/Sivan.

November 1986: Viton/Prévot/Sivan, Herczeg/Pietsch, Kubiak/Seggewiss, Geyer/Stepien/Mekkaden, Kubiak/Seggewiss, Pallavicini/Cerruti-Sola/Pasquini, Waelkens/Lamers/Waters/Le Bertre, Natta/Hunt/Vietri, Lub/de Ruiter, Wolf/Baschek/Scholz/Krautter/Reitermann.

December 1986: Wolf/Baschek/Scholz/Krautter/Reitermann, Heydari-Malayeri/Testor, Alloin/Pelat/Phillips, Acker/Stenholm/Lundström, Alloin/Pelat/Phillips, Lundgren, Alloin/Pelat/Phillips.

January 1987: Alloin/Pelat/Phillips, Focardi/Merighi, Tanzi/Bouchet/Falomo/Maraschi/Treves, Thé/Westerlund/Pérez, Haug/Drechsel/Strupat/Böhnhardt/Herczeg, Duerbeck, Courvoisier/Bouchet, Reipurth/Le Bertre.

February 1987: Reipurth/Le Bertre, Bender/Möllenhoff, Alloin/Pelat/Phillips, Lodén LO/Sundman, Kohoutek/Günter, Waelkens/Lamers/Waters/Le Bertre, Alloin/Pelat/Phillips, Pottasch/Pecker/Karoji/Sahu, Alloin/Pelat/Phillips.

March 1987: Alloin/Pelat/Phillips, Courvoisier/Bouchet, Schmutz/Hamann/Hunger/Wessolowski, Alloin/Pelat/Phillips, Lagerkvist/Hahn/Magnusson/Rickman, Schmutz/Hamann/Hunger/Wessolowski, Lagerkvist/Hahn/Magnusson/Rickman, Cox/Leene, Pastori/Antonello/Mantegazza/Poretti, Mantegazza, Magain, Alloin/Pelat/Phillips, Gerbaldi.

1.4-m CAT

October 1986: Foing/Beckman/Castelli/Crivellari/Vladilo, Crivellari/Foing/Beckman/Arribas/Castelli/Vladilo, Lindgren/Ardeberg/Maurice/Lundström, Didelon, Solanki/Mathys, Spite M./Spite F., Cayrel de Strobel.

November 1986: Cayrel de Strobel, Nissen/Andersen/Edvardsson/Gustafsson, Ferlet/Vidal-Madjar/Gry/Laurent/Lallement, Pallavicini/Cerruti-Sola/Pasquini, Ferlet/Vidal-Madjar/Gry/Laurent/Lallement, Vidal-Madjar/Ferlet/Lagrange, Rodonò/Catalano S./Cutispoto/Linsky/Neff, Ferlet/Vidal-Madjar/Lagrange, Martin/Maurice.

A Workshop organized by ESO on

STELLAR EVOLUTION AND DYNAMICS IN THE OUTER HALO OF THE GALAXY

will be held at ESO, Garching, **April 7–9, 1987.**

Topics of this 3-day workshop will include observational and theoretical aspects concerning chemical evolution and dynamics of field stars, globular clusters and planetary nebulae in the halo of our Galaxy and in halo systems – Magellanic Clouds and Dwarf Spheroidals.

More information may be obtained from M. Azzopardi at ESO, Karl-Schwarzschild-Str. 2, D-8046 Garching bei München, FRG.

December 1986: Maurice/Martin, Wolf/Zickgraf/Stahl, Barbuy, Barbuy/Arnould/Jorissen, Waelkens, Lenhart/Grewing, Gustafsson/Vilhu/Edvardsson.

January 1987: Gustafsson/Vilhu/Edvardsson, Bandiera/Focardi, Bouvier/Bouchet, Bandiera/Focardi, Bouvier/Bouchet, Bandiera/Focardi, François/Spite M., Baade/Peters/Polidan.

February 1987: Baade/Peters/Polidan, François/Spite M., Dachs/Hanuschik, Pottasch/Sahu, Ferlet/Vidal-Madjar/Lamers/Waelkens, Vladilo/Beckman/Crivellari/Molaro.

March 1987: Vladilo/Beckman/Crivellari/Molaro, Lanz/Mégessier/Landstreet, Gillet/Pelat, Magain, Brandi/Swings/Gosset, Stahl/Baade.

1-m Photometric Telescope

October 1986: Bues/Rupprecht, Liller/Alcaino, Kroll/Catalano F., Waelkens/Lamers/Waters/Le Bertre, Bergvall/Johansson, Guarnieri/Clementini/Fusi Pecci.

November 1986: Guarnieri/Clementini/Fusi Pecci, Labhardt/Spaenhauer/Trefzger, Collmar/Brunner/Kendziorra/Staubert, Chini/Krügel, Boisson/Balkowski/Durret/Rocca, Waelkens/Lamers/Waters/Le Bertre, Richtler/Spite M.

December 1986: Richtler/Spite M., Kohoutek/Steinbach, Bouvier/Bouchet, Waelkens/Lamers/Waters/Le Bertre.

January 1987: Westerlund/Pettersson, Mantegazza/Antonello/Conconi, Haug/Drechsel/Strupat/Böhnhardt/Herczeg, Waelkens/Lamers/Waters/Le Bertre, Reipurth, Waelkens/Lamers/Waters/Le Bertre, Poulain/Nieto/Prugniel, Grosbøl/Brosch/Greenberg.

February 1987: Grosbøl/Brosch/Greenberg, Thé/Westerlund/Perez, Waelkens/Lamers/Waters/Le Bertre, Rodonò/Cutispoto/Ambruster/Haisch/Butler/Scaltriti/Vittone, Dachs/Hanuschik, Magain, Waelkens/Lames/Waters/Le Bertre, Dreier/Barwig/Schoembs.

March 1987: Dreier/Barwig/Schoembs, Stanga/Moneti/Natta/Lenzuni, Waelkens/Lamers/Waters/Le Bertre, Lorenzetti/Ceccarelli/Saraceno, Epchtein/Nyuyen-Q-Rieu/Le Bertre, Waelkens/Lamers/Waters/Le Bertre, Di Martino/Zappala/Farinella/Cellino, Antonello/Conconi/Mantegazza/Poretti, Lyngå/Gustafsson, Gerbaldi.

50-cm ESO Photometric Telescope

October 1986: Group for Long Term Photometry of Variables, Geyer/Stepien/Mekkaden.

November 1986: Geyer/Stepien/Mekkaden, Carrasco/Loyola, Rodonò/Catalano S./Cutispoto/Linsky/Neff, Group for Long Term Photometry of Variables.

December 1986: Group for Long Term Photometry of Variables, Bouvier/Bouchet.

January 1987: Bouvier/Bouchet, Lindgren/Ardeberg/Maurice/Prévot/Lundström, Carrasco/Loyola, Thé/Westerlund.

February 1987: Thé/Westerlund, Thé/Westerlund/Pérez, Rodonò/Cutispoto/Ambruster/Haisch/Butler/Scaltriti/Vittone, Kohoutek/Günter, Lagerkvist/Hahn/Magnusson/Rickman.

March 1987: Lagerkvist/Hahn/Magnusson/Rickman, Carrasco/Loyola, Scaltriti/Busso.

GPO 40-cm Astrograph

October 1986: Scardia.

November 1986: Scardia.

February 1987: Debehogne/Machado/Caldeira/Vieira/Netto/Zappalà/De Sanctis/Lagerkvist/Mourão/Protitch-Benishek.

March 1987: Debehogne/Machado/Caldeira/Vieira/Netto/Zappalà/De Sanctis/Lagerkvist/Mourão/Protitch-Benishek.

1.5-m Danish Telescope

October 1986: Leibundgut/Tammann, Ulrich/Iye, Giraud.

November 1986: Prévot/Viton/Sivan, Grenon/Mayor, Trefzger/Mayor/Pel, van Paradijs/Mayor/Verbunt/Zwaan, Schulte-Ladbeck/Becker/Appenzeller/Leitherer, Melnick/Terlech/Moles.

December 1986: Melnick/Terlevich/Moles, Nørgaard-Nielsen/Hansen/Jörgensen, Valentijn/Lauberts/Peletier.

January 1987: Lindgren/Ardeberg/Maurice/Prévot/Lundström, Andersen/Nordström/Olsen, Larsson, Brinks/Klein/Danziger/Matteucci.

February 1987: Brinks/Klein/Danziger/Matteucci, Fusi Pecci/Bonifazi/Romeo/Foardi/Buonanno.

March 1987: Mermilliod/Mayor/Andersen/Nordström, Mayor/Duquennoy/Andersen/

Nordström, van Paradijs/van der Klis, Ilovaisky/Chevalier/Angebault/Mouchet/Pedersen.

50-cm Danish Telescope

November 1986: Kubiak/Seggewiss, Sterken/vander Linden.
December 1986: Sterken/vander Linden.
January 1987: Lodén K., Lindgren/Ardeberg/Maurice/Prévot/Lundström.

90-cm Dutch Telescope

October 1986: Gautschy, Schneider/Weiss.
November 1986: van Paradijs/Mayor/Verbunt/Zwaan, Trefzger/Pel/Blaauw.
December 1986: Trefzger/Pel/Blaauw, Lub/de Ruiter, de Loore/David/Blaauw/Verschueren/Hensberge.
January 1987: de Zeeuw/Lub/de Geus/Blaauw, v. Amerongen/v. Paradijs, Grenon/Lub.
February 1987: Grenon/Lub.
March 1987: Waelkens/Heynderickx.

61-cm Bochum Telescope

October 1986: Weiss/Schneider, Bianchi/Cerrato/Grewing/Scales.
November 1986: Bianchi/Cerrato/Grewing/Scales, Kohoutek/Steinbach.
December 1986: Kohoutek/Steinbach.

Hunting Halley's Comet

W.E. CELNIK, Astronomisches Institut, Ruhr-Universität, Bochum, FRG

Observers of bright comets have always been fascinated by the sight of these rare phenomena. However, it was as late as the 19th century that scientists started to make systematic observations of the appearance of comets and recorded them in the form of drawings and descriptions of comas and tails. Halley's comet in particular was observed intensively because the time of its return was well known. The first photographic observations of the comet were made during its 1910 perihelion. A large number of photographs were taken using astronomical instruments of all dimensions showing structures within the extended ion tail and the bright coma. Pictures from that time are well suited to be compared with recently obtained images of the 1986 appearance, although observing conditions were then much less favourable. Just when P/Halley was most active, at its brightest, and thus most interesting, namely during its perihelion passage, it was behind the Sun and unobservable. During the 2,000 years that observations of this comet have been recorded, there was only one appearance where the positions of Sun, Earth and comet were even worse for observations. In addition, the observing conditions in the northern hemisphere were extremely bad because at its best time the comet followed its path through the southern skies. Thus the only way to observe P/Halley successfully after its perihelion passage was to got to the southern hemisphere. At a latitude of 30 degrees south the comet culminated near the zenith.

Figure 1: *Comet P/Halley in the morning twilight of February 22, 1986, 9 : 01 UT from La Silla. Camera 1 : 2/110 mm, filter OG 530, IIIa–F hypersensitized, exposure time 3 minutes.*

The author and some colleagues from the Astronomical Institute of the Ruhr University in Bochum (FRG) were very interested in observations of P/Halley. Although solar system bodies are not the main field of work in our institute, a new small study group was set up to prepare, implement and evaluate observations of this comet. Collaborators are P. Koczet, Prof. W. Schlosser, R. Schulz, K. Weissbauer and the author. This was in February 1985, exactly 12 months before the approximation of P/Halley to the Sun. Thus time was short. A scientific observing programme demands extensive deliberation and preparation in order to produce new knowledge about the object. An important question was how to finance the campaign. Towards the end of June 1985 an application to the "Deutsche Forschungsgemeinschaft" was made for financial support of the project. This support was granted in September 1985. Now there was only little time left to acquire all the necessary instruments and equipment because we wanted to start the observations as early as possible after the perihelion which was on February 9, 1986. It was decided to restrict the campaign to photographic photometry and the investigation of structures in the coma and tail of P/Halley.

Determination of the brightness distribution across coma and tail is only valid if certain components of cometary matter are considered. Thus four wide-field cameras were used to take plates simultaneously in the light of the neutral CN molecule at 3880 Å wavelength using an interference filter of 50 Å bandwidth, in the light of the ionized CO^+ molecule at 4260 Å (filter bandwidth 100 Å), of the dust tail using a long-wave pass filter at 5300 Å, and of the ion tail with a filter combination resulting in a spectral range from 3750 to 4500 Å. To obtain a field of view of 30 degrees we used cameras of the format 6 × 6 cm and 6 × 6 objectives of the focal length 110 mm and a focal ratio of f/2. For the photographic emulsion we chose fine-grain hypersensitized IIIa–F. The optical filters for the wide-field images have a diameter of 65 mm and were set in front of the optics.

In order to study the structures within the cometary coma with high spatial resolution, we acquired a Flat-Field Camera 1 : 4/760 mm with a field of view of 1.8 × 2.7 degrees if 35 mm film is used. This instrument too was equipped with optical filters to obtain images in CN, CO^+ and of the dust coma. Photographs with this camera were taken with 103a–E, a–F and TP 2415 35 mm film, all hypersensitized.

From an amateur we bought a used but very stable parallactic mounting which is controlled by stepping motors in both right ascension and declination. Velocities in both directions were adjusted to follow the comet automatically as well as possible. A refractor with focal length 1,000 mm and f/10 served as a guiding telescope. It was modified to give an enlargement of 150–200 × and a field of view of 25 arcminutes.

The location of our observations was the ESO observatory at La Silla where our institute has a telescope of its own (diameter 61 cm, f/15) and where a complete infrastructure exists. There the comet could be observed optimally and