

The New ESO Observing Programmes Committee

J. BREYSACHER, ESO

1. Introduction

As shown in Figure 1, the number of proposals received by ESO per observing semester has considerably increased over the past sixteen years. Today, about 500 proposals per period are currently submitted. This healthy situation, which reflects the dynamism of European astronomy, is also a matter of concern for the ESO Observing Programmes Committee (hereafter OPC).

The appointment of OPC members-at-large – a process which started in 1988 when the number of proposals per period was of the order of 350 – has contributed to keep at an acceptable level the amount of work for each OPC member, but now with 500 proposals or more the situation is becoming critical again.

How to reduce the workload of the OPC while still improving the quality of the refereeing work is a topic which has been extensively and often debated by this Committee. Among the various proposed alternatives to the present system, the appointment of a number of discipline-oriented sub-committees appears to be the most attractive and realistic approach.

2. Structure of the New OPC

2.1 Appointment of sub-committees

The basic idea is that every sub-committee (alternatively called panel) should review a more or less similar number of observing proposals, in order to achieve a distribution as even as possible of the workload. The present nine scientific categories used for the classification of the observing proposals are therefore abandoned and replaced by six new ones¹, where the grouping of the subjects is somewhat different; one sub-committee being appointed for each of the following categories:

- A – Galaxies, Clusters of Galaxies, and Cosmology
- B – Active Galactic Nuclei and Quasars
- C – Intergalactic and Interstellar Mediums
- D – High-mass and/or Hot Stars
- E – Low-mass and/or Cool Stars
- F – Solar System

The sub-categories included in each of these main categories are detailed in

Table 1. Due to the reduced number of proposals submitted for *Solar System* studies (always less than 30 per semester), these are reviewed by a smaller panel. Figure 2 shows how the proposals received for Periods 51 and 52 could be redistributed, using the new classification scheme. With the exception of category F, the histograms reveal a rather well balanced distribution of the proposals between the new scientific categories.

2.2 Composition of the sub-committees

The increase in the number of submitted proposals (Fig. 1), indicates that very soon, about 600 applications for observing time will have to be reviewed by the OPC. Assuming that these will essentially be distributed within the five new main categories, the A, B, C, D and E sub-committees will each receive about 120 ± 20 applications per semester (cf. Table 1).

On this basis, considering that a number of 60, to a maximum of 80, proposals can be reviewed by each referee, and that each proposal is given to 3 referees, the A, B, C, D and E sub-

committees have been assigned 6 members each. Two of them are current OPC members, i.e. representatives nominated by the respective national committees and/or members-at-large nominated by the Director General. They serve five years, not immediately renewable. The chair rotates between these two members only. The four other members are “expert advisers” selected by the Director General in consultation with the OPC chairman without nationality consideration for a staggered two/three years term. ESO staff astronomers might be asked to participate as “expert advisers” if required. For the time being, three members only are in the F sub-committee, the chair and two advisers.

The chairmann of the OPC is not assigned to any of the sub-committees. His role is to coordinate the activities of the various panels when they meet, to ensure that the evaluation of the proposals is progressing properly.

2.3 The “new” Observing Programmes Committee

The final recommendation for telescope time allocation will be the responsibility of the “new” Observing Pro-

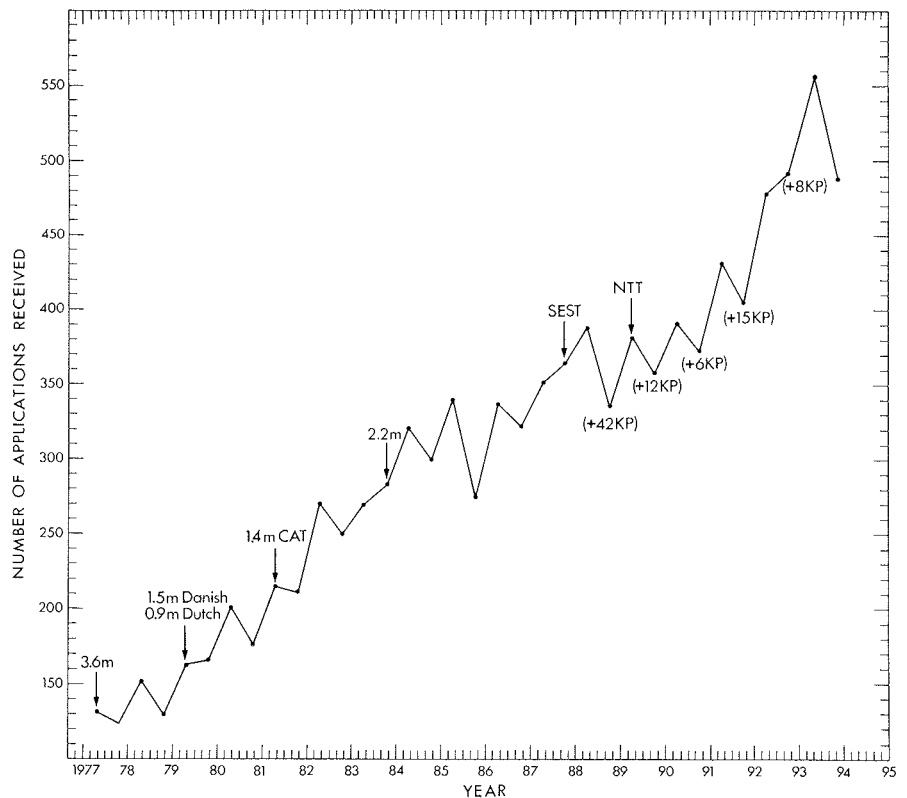


Figure 1: Increase in the number of proposals received by ESO per observing semester. Key Programmes are marked separately. Arrows indicate when new telescopes became available.

¹ This new classification is inspired by the one in use at the Space Telescope Science Institute.

grammes Committee composed of 12 members (8 national representatives + 4 members-at-large). The chairman is necessarily chosen among the national delegates, for its deputy there is no constraint. Both of them are appointed annually by Council.

As all the refereeing work, and preliminary ranking of the proposals, is being done by the discipline-oriented panels, there will be no further need for the presence of experts in specific areas – like SEST – during the OPC deliberation. The main task of the new Committee will be to define a unique cut-off line for every telescope after merging the recommendations made by the various panels.

The Director General and/or the Associate Director for Science as well as the ESO scientist responsible for the Visiting Astronomer's Programme attend the OPC meeting.

3. Refereeing Work

The procedure in use at the moment for evaluating the relative scientific merits, and for ranking the submitted proposals, although not perfect, has nevertheless proved to be rather efficient over the past decade. The need for a fundamental change essentially originates from the fact that the number of proposals to handle is now too large for the number of referees involved in

TABLE 1. *New OPC Categories and Subcategories*

| Categories | Subcategories |
|---|---|
| Galaxies, clusters of galaxies, and cosmology | nearby galaxies, stellar populations, galaxy morphology, peculiar/interacting galaxies, bulges, core, and nuclei of nearby galaxies, kinematics of galaxies and clusters of galaxies, cooling flows, galaxy surveys, distance scale, large scale structure, distant galaxies, evolution and cosmology, gravitational lensing, microlensing |
| AGN and quasars | starburst galaxies, BL Lac, Seyfert galaxies, active nuclei galaxies, galactic jets, quasar absorption and emission lines, host galaxies, radio galaxies, high-redshift galaxies, quasar surveys, gravitational lensing, microlensing |
| Interstellar and intergalactic mediums | circumstellar matter, planetary nebulae, novae and supernova remnants, gas and dust, giant molecular clouds, cool and hot gas, diffuse and translucent clouds, cooling flows, star forming regions, globules, protostars, HII regions, quasar absorption lines |
| High-mass and/or hot stars | pre-main sequence stars, T Tauri stars, HH objects, outflows, stellar jets, upper-main sequence stars, mass-loss, winds, WR stars, LBV stars, novae and supernovae photometry, pulsars, massive and eruptive binaries, X-ray binaries, CVs, white dwarfs, neutron stars, black hole candidates, young star clusters (open), OB associations |
| Low-mass and/or cool stars | low main-sequence stars, subdwarfs, brown dwarfs, circumstellar disks, early evolution, stellar atmospheres, chemical abundances, post main-sequence stars, giants, supergiants, AGB stars, stellar activity, pulsating/variable stars, binaries, old star clusters (globular), blue stragglers, astrometry |
| Solar system | planets, comets, minor planets and asteroids |

the work. In consequence, the existing OPC procedure will basically be applied at the level of the sub-committees with,

however, some amendments to eliminate the recognized weaknesses of the current system.

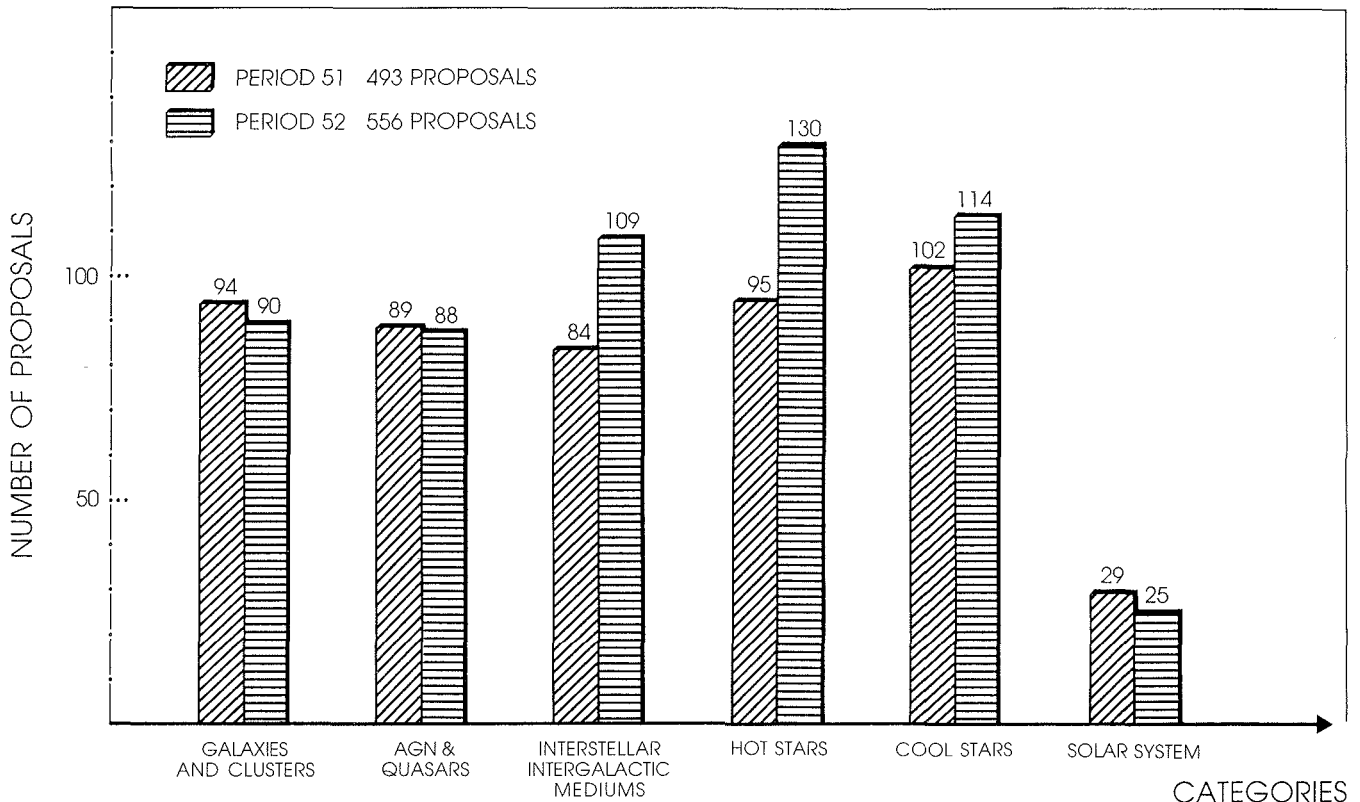


Figure 2: *Distribution among the six new scientific categories (cf. Table 1) of the observing proposals received for Periods 51 and 52.*

3.1 Panel review of the proposals

Every panel member will receive the complete set of proposals corresponding to his discipline with indication of the ones (about 60) he has to referee within three weeks, and those for which he is primary reviewer (about 20). In view of their small number, the *Solar System* proposals are all evaluated by the three members of panel F.

Once the ratings and recommended numbers of nights from every referee are available, one week before the panel meetings, ESO produces per discipline and for each telescope a list in which the programmes are ranked according to their average grade (3 referees per proposal). The average recommended number of nights is used to sum up the observing time required as one goes down the list, and a cut-off line is drawn when the number of nights "reserved" for the discipline is reached.

Due to the existence of the six panels, the definition of the cut-off line for a given telescope, at the discipline level, obviously requires some special attention. Based on time allocation statistics over the past two or three years, an average number of nights to be assigned per semester to a discipline will be derived for each telescope. This will help defining a preliminary cut-off line per telescope and per discipline, each panel having nevertheless the freedom to select more proposals, if justified by the large number of excellent programmes received. The reverse is also possible, i.e., less proposals recommended for time allocation by the panel than allowed by the position of the cut-off line.

A major change compared to the current procedure is that every referee will now have to submit in written form to the chair of the panel the arguments for his grades and recommended amount of observing time. Another important modification with regard to the present situation is the disappearance of selective discussion of proposals. In the new system all proposals will be discussed.

All technical and instrumental related issues for feasibility of the submitted programmes will have to be clarified during the panel meetings. Whenever necessary, the "technical cost" of proposals will also be evaluated. This means that each panel has (i) to identify the programmes requesting either a special equipment or an ESO instrument the use of which implies a deviation from the standard block scheduling, (ii) to make a recommendation on whether or not the required extra technical effort appears justified, considering the scientific merit of these programmes.

When the panels have completed the review of their respective set of proposals, every chair has to hand over to the ESO responsible for the Visiting Astronomer's Programme, for each telescope, a revised classification of the submitted proposals which reflects the final decision of the panel.

3.2 Final OPC recommendation

At the OPC meeting, the following new documents are distributed to the members of the Committee:

- for every telescope, a classification list of the programmes resulting from the merging of the priority lists from the panels,
- a set of tables showing, for each telescope, how the programmes above the cut-off line are distributed over the months and the moon phases, and the pressure on the various instruments.

For each telescope, the cut-off line is now defined by the number of nights available for astronomical observations, the technical time being considered separately. At this stage, it is quite clear that a number of programmes selected by the various panels will be located below the cut-off line. Under the guidance of the OPC chairman, the main and difficult task of the committee members is then to harmonize their views and decide which of the programmes in the "grey zone" have to be saved and which

have to be discarded. The final product of this meeting must indeed consist of a realistic list of proposed allocations.

To achieve this goal, a mechanism similar to the one used by the HST Time Allocation Committee is foreseen. Each of the six chairs is asked to describe two proposals in his discipline: one immediately above the cut-off line and one immediately below. Programmes with the same mean grade are taken first. Once the six disciplines have been reviewed, each OPC member is requested, through a vote, to select 6 proposals among the 12 presented. Only the 6 best-ranked proposals are kept for the next iteration. The process is stopped as soon as the situation is judged satisfactory for the telescope under consideration. The exercise is then repeated for the next telescope.

Final Remark

This change in the structure and functioning of the OPC will become effective for the spring meeting (May 24–27, 1994) of the Committee.

The strong reduction in the number of applications to be reviewed by every referee that the present scheme allows, should contribute to maintain and possibly reinforce the confidence in the refereeing work done by the OPC.

The fact that the intended new procedure can to some extent be based on the system currently in use – corrected from its weaknesses – is certainly an asset. Another advantage is that external referees are not any longer needed for reviewing the key programmes. The same uniform treatment can be applied to both current proposals and key proposals, thus eliminating biases in the grading.

Adjustment in the OPC and sub-committees composition will be required as soon as national members are replaced, or when delegates from new countries become officially involved in the refereeing of the scientific programmes.

Meeting on Key Programmes

C. CÉSARSKY, J. BREYSACHER and R. KUDRITZKI

Following a "Preliminary Enquiry" carried out in 1988, the key programme scheme was introduced at ESO starting from Period 43 (April 1–October 1, 1989). Taking advantage of the addition of the NTT to the La Silla telescope park,

the Director General, Prof. H. van der Laan, proposed an experiment: to allocate the extra observing time in a revised manner, "such that a number of programmes can receive very substantial portions of time". Key programmes

were not expected to be a "long-term" acquisition "of large databases", but to address "a major astronomical theme, providing very specific goals and outlining a structural research strategy" (*The Messenger*, No. 51). The foreseen im-

plementation time of a given key programme was between one and four years.

In the period between April 1989 and October 1993, 83 key programmes were proposed, of which 33 were accepted (Table 1 and 2). In the intervening semesters, 16 to 31 % of the time at the 3.6-m telescope, 14 to 26 % of the time at the NTT, and 14 to 28 % of the time at the 2.2-m telescope were attributed to key programmes. Originally, the small telescopes were not offered for key programmes, but eventually they were involved more and more heavily. (Fig. 1). Meanwhile, the number of ordinary proposals submitted to ESO continued to increase steadily, year by year.

By 1993, the time had come to assess the results of the key programme "experiment", and to take advantage of the experience gained to devise new rules. No new key programme proposals were solicited, and, at the request of the Observing Programmes Committee, the ESO Science Division and the Visiting Astronomers Section organized an informal review of all ESO key programmes, ongoing or completed.

The meeting took place in Garching on November 22 and 23, 1993. The principal investigators of the 33 key programmes were given 15 minutes each to present a digest of their results, and to comment on possible difficulties encountered during the execution of the programme. In addition to the principal investigator and some of their co-investigators the meeting was attended by the Director General, Prof. R. Giacconi, members of the ESO scientific staff, the members of the OPC and a group of distinguished astronomers.

The presentations were followed by an extended and lively discussion between the audience and a panel consisting of six invited astronomers (R. Kudritzki (chair), J. Andersen, G. Gilmore, J. Lequeux, A. Renzini and P. van der Kruit), six principal investigators of key programmes (J. Bergeron, B. Fort, M. Mayor, G. Miley, R. Reimers and G. Vettolani), and the OPC chair.

A prevailing opinion in the panel and the audience was that too many of the programmes had not been of the fundamental character expected. Also, it was felt that too many key programmes were running simultaneously, so that each of them had not sufficient observing time per semester and extended over too long a period. At the same time, everybody agreed that a large number of very interesting results had been obtained; in fact, by gathering representatives of all fields of astrophysics the meeting was an excellent opportunity to informally review scientific results obtained with ESO facilities. From that point of view

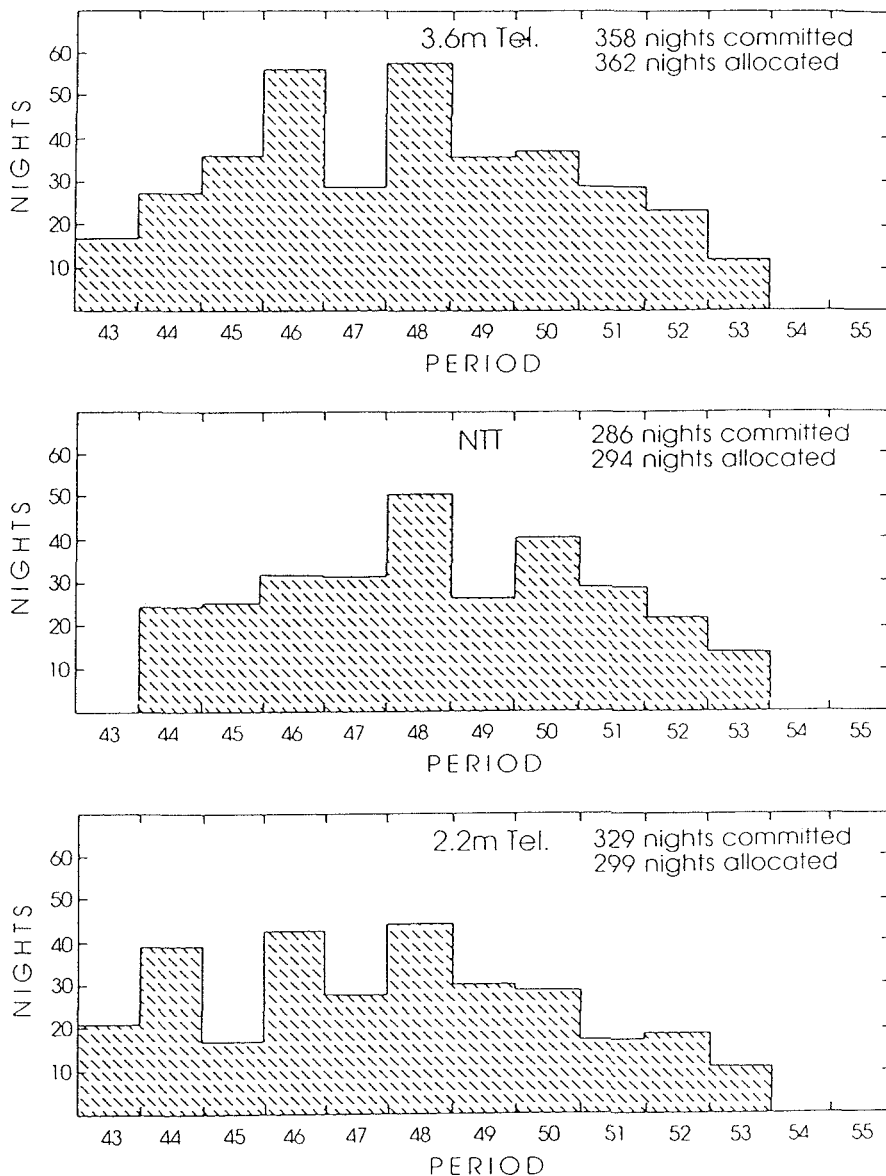
the meeting was exciting and successful.

The meeting ended with a closed session, chaired by C. Césarsky, where the Director General, the panel and the OPC members issued recommendations for ESO key programmes in the future:

(1) The idea of key projects (KP), granted to programmes of excep-

tional scientific interest and well adapted to the ESO facilities, should be retained. The KP programmes are to be performed on the three main ESO telescopes (NTT, 3.6-m, 2.2-m).
 (2) Only a few KPs (of the order of three or four) should be carried out simultaneously in a given period. KPs should be achieved in a relatively

OBSERVING TIME ALLOCATED TO KEY PROGRAMMES



| | | |
|-----------------|--------------|---|
| Also allocated: | 1.5m Tel. | : 329 nights |
| | 1.5m D. Tel. | : 222 nights |
| | 1m Tel. | : 147 nights + 7 months (DENIS project) |
| | 0.9mDu. Tel. | : 85 nights |
| | 0.5m Tel. | : 27 nights |
| | G P O | : 15 months (EROS project) |
| | S E S T | : 84 hours / semester |

Figure 1.

TABLE 1. *Distribution of the accepted key programmes*

| OPC Categories | No. of KPs | |
|--------------------------------------|------------|------------|
| | accepted | completed* |
| 1. Galaxies, Clusters of Galaxies | 10 | 7 |
| 2. Quasars, Seyferts, Radio Galaxies | 6 | 2 |
| 3. Magellanic Clouds | 2 | 1 |
| 4. Interstellar Matter | 2 | 1 |
| 5. Star Clusters, Galactic Structure | 5 | 2 |
| 6. X-Ray Sources | 2 | 1 |
| 7. Stars | 3 | 2 |
| 8. Miscellaneous | 3 | 1 |
| Total | 33 | 17 |
| * at the end of Period 52 | | |

TABLE 2. *Number of key programmes*

| Programmes | Received | Accepted | Completed | Running |
|--|----------|----------|-----------|---------|
| Period 43 (1.4.89–1.10.89) | 42 | 12 | – | 12 |
| Period 45 | 12 | 10 | – | 22 |
| Period 47 | 6 | 3 | 2 | 23 |
| Period 49 | 15 | 5 | 3 | 25 |
| Period 51 | 8 | 3 | 3 | 25 |
| Period 53 (1.4.94–1.10.94) | – | – | 9 | 16 |
| Observing time committed: 1795 nights +8 months/year at the 1-m telescope (DENIS project) +24 months at the GPO (EROS Project) +84 hours/semester at SEST | | | | |

short time (appr. 2 years), not counting an initial test run, if necessary. The total amount of observing time per period spent on KPs should remain within a TBD percentage of the total available time.

(3) The applicants of a KP have to demonstrate that they have or can have the means to achieve their scientific goals, including access to data reduction software and hardware and to theoretical models.

- (4) Once the OPC selects a KP, the ESO staff decides on its feasibility – after which ESO is committed to ensure that the KP receives proper support from ESO.
- (5) While a given total number of nights is assigned once the KP is accepted, this number is only indicative. KPs are reviewed every year by the OPC; for this purpose the recipients have to submit in advance a written report, and have also to make an oral presentation at the OPC meeting. The number of nights assigned to the programme in the following year is fixed at that meeting. Loss of observing time due to bad weather is completely taken into account.
- (6) The data obtained are the property of the KP team for one year after the last observations have been taken, after which they become public through ESO.
- (7) “Long-term Projects” are not KPs. (But perhaps they should be recognizable in a more obvious way at the proposal level.) The OPC decides at each meeting whether they should continue. It is hoped that the new working structure of the OPC will make it easier to maintain continuity and memory.
- (8) Extended projects of fundamental character, carried out on small telescopes, are not KPs, but “Special Projects”. ESO is not committed to support them to the extent they support KPs and the applying groups are encouraged to take in charge as much as possible of the work required.

ANNOUNCEMENTS

IMPORTANT NOTICE

Please remember that the deadlines for Applications for Observing Time at La Silla have been changed to April 1 and October 1.

The deadline for Period 54 (October 1, 1994–April 1, 1995) is now April 1, 1994, and the deadline for Period 55 (April 1–October 1, 1995) is October 1, 1994.

Council and Committee Members in 1994

Council

| | |
|------------------|---|
| Belgium: | J. P. Swings E.L. van Dessel |
| Denmark: | H. Jørgensen H. Grage |
| France: | C. Césarsky (Vice-President) J. Fouan |
| Germany: | M. Grewing A. Hansen |
| Italy: | F. Pacini C. Chiuderi |
| The Netherlands: | E. Campo E.P.J. van den Heuvel J. Bezemer |
| Sweden: | B. Gustafsson B. Brandt |
| Switzerland: | G. Tammann P. Creola (President) St. Berthet (Observer) |
| Portugal: | F. Bello (Observer) |

Committee of Council

| | |
|-------------|--------------------------|
| J.P. Swings | E. Campo |
| H. Grage | J. Bezemer |
| J. Fouan | B. Gustafsson, B. Brandt |
| A. Hansen | P. Creola |
| F. Pacini* | |

Scientific Technical Committee

| | |
|------------------------|------------------------------|
| J. Andersen* (1992–96) | T. Lago (1991–95) (Observer) |
| S. Beckwith (1994–98) | B. Marano (1993–97) |
| A. Blecha (1992–96) | S. Ortolani (1993–97) |
| R. Braun (1993–97) | J.W. Pel (1992–96) |
| K.S. de Boer (1991–95) | Ch. Sterken (1990–94) |
| D. Dravins (1993–97) | L. Vigroux (1990–94) |
| R. Foy (1990–94) | |

Finance Committee

| | |
|----------|-----------------------------------|
| Belgium: | H. van den Abbeele/ P. Grogard |
| Denmark: | B.K. Rosengreen |
| France: | P. Laplaud/M. Nauciel |
| Germany: | B. Schmidt-Küntzel/M. Stötzel |
| Italy: | U. Sessi |

| | |
|------------------|---------------------|
| The Netherlands: | J. Bezemer |
| Sweden: | J. Gustavsson* |
| Switzerland: | A. Augustin |
| Portugal: | F. Bello (Observer) |

Observing Programmes Committee

| Members | Substitutes |
|------------------------------|------------------------------|
| C.-J. Björnsson (1993–97) | E. van Groningen |
| J. Lequeux (1994–96) | M. Gérin |
| G. Chincarini (1992–96) | G. Vettolani |
| Knude (1994–98) | N.N. |
| J. Krautter* (1992–96) | Th. Gehren |
| W. Schmutz (1993–97) | Y. Chmielewski |
| E.L. van Dessel (1990–94) | C. Arpigny |
| F. Verbunt (1993–97) | J. Lub |
| T. Lago (1993–96) (Observer) | |
| | P. Barthel, Member at large |
| | B. Pagel, Member at large |
| | R. Sancisi, Member at large |
| | C. de Bergh, Member at large |

Users Committee

| | |
|----------------------------------|------------------------|
| N. Bergvall (1993–96) | N.N. |
| J.V. Clausen (1991–95) | N.N. |
| M. Dennefeld* (1992–95) | P. Magain (1991–94) |
| S. Di Serego Alighieri (1993–96) | H. Zinnecker (1992–95) |

*Chairman

Time-Table of Council Sessions and Committee Meetings

| | |
|----------------|--------------------------------|
| March 29 | Finance Committee |
| April 28 | Council |
| May 2–3 | Users Committee |
| May 5–6 | Scientific Technical Committee |
| May 9–10 | Finance Committee |
| May 24–27 | Observing Programmes Committee |
| June 7–8 | Council |
| November 3–4 | Scientific Technical Committee |
| November 7–8 | Finance Committee |
| November 22–25 | Observing Programmes Committee |
| Nov. 30–Dec. 1 | Council |

Programmes Approved for Period 53

KEY PROGRAMMES

| ESO No. | Principal Investigator | Title of submitted programme | Telescope |
|-----------|------------------------|---|-----------|
| 1-003-43K | de Lapparent et al. | A redshift survey of galaxies with $z \leq 0.6$ using multi-slit spectroscopy | NTT |
| 1-012-43K | Bergeron et al. | Identification of high redshift galaxies with very large gaseous halos | NTT |