

## Schedule of Meetings, Second Half of 1974

The following dates were decided on:

Finance Committee, to be held at Amsterdam: October 31  
Committee of Council, to be held at Amsterdam: November 1  
Observing Programmes Committee, to be held at Observatoire de Haute-Provence: December 2 and 3  
Scientific Policy Committee, to be held at Hamburg: December 4  
Council, to be held at Hamburg: December 5 and 6

## Wall Chart of 3.6 m Telescope Published

An artist's impression of the 3.6 m telescope has recently been received by the TP Division, Geneva. The artist is Tony Lofthouse, who is with the magazine "Nuclear Engineering".

He worked here entirely from engineering execution drawings, his only visual aid being the model.

Grandchamps of Annemasse has printed many copies of this 90 cm × 70 cm drawing, which ESO will issue as a wall chart for use in seats of learning and science. The original will be framed and hung in the TP Division premises.

## Telescope Control System Successful on La Silla

Transported last autumn from Geneva to Chile and subsequently installed on La Silla, the most advanced telescope control system in the world is now fully operational there.

The system was set up by a team of five people from the controls group of ESO TP Division which designed it.

They were: J. van der Lans who headed the group, P. Stürzinger, R. Zurbüchen, J. van der Ven and S. Lorenzen.

Fully computerized, the system will have an accuracy and a flexibility of operation previously unknown in astronomy. Given the coordinates from the star catalogue, the computer will, on instruction, point the telescope to any stellar object, make the necessary allowance for the particular time of observation, refraction of the air, etc., and set the position of the dome opening. Its memory can store a complete programme of work for a night prepared by the astronomer, and with very little additional trouble the computer can do a host of other jobs which the astronomer in the past had to do himself.

Developed as a prototype for ESO's big 3.6 m reflector which is being designed at CERN, the system proved so successful under test that the decision was taken to fit it immediately to the 1 m photometric telescope on La Silla. Since the system became operational, the visiting astronomers using it report that it gives complete satisfaction. Copies of it are also being built for installation on the Schmidt telescope which was commissioned last year on La Silla and on the Danish 1.5 m telescope, now under construction.

The control system is one of the first concrete results of the collaboration between ESO and CERN.

ESO established in CERN's laboratory near Geneva a telescope design and development division and a laboratory for the reproduction of sky atlases based on photographs taken by the Schmidt on La Silla.

The collaboration has meant that the experience gained at CERN in the design of large and delicate machines and the application of computer techniques to their control could be brought to bear on the problem of guiding a big telescope with the precision that astronomers demand today.

## Occultation of Saturn

Most of the research on La Silla concerns stars and the stellar system, but on January 6, 1975, an event will occur which falls into a different category: the occultation of certain stars by the planet Saturn.

This phenomenon will be observed on La Silla by Dr. Michel Dennefeld and his assistant, Dr. Michel Hersé, both from the CNRS (Centre National de la Recherche Scientifique) in Paris. Dennefeld is currently working with ESO/Chile as a coopérant, in substitution for military service. The team will be completed by J. Porteneuve, optical engineer, and J. Mari, electronician.

The purpose of the observations is to determine the transparency of the rings of Saturn as a function of the radial distance to the centre of the system.

Drs. Dennefeld and Hersé have been allotted six nights (January 7—13) with the 1.52 m spectrographic telescope.

## Big Hunt on ESO (B) Plates

Almost 100 plates in the ESO (B) Survey have now been taken with the Schmidt telescope, most of them in the zones  $-50^{\circ}$  to  $-75^{\circ}$ .

Since this area of the sky was not covered by the famous Palomar Atlas, the ESO plates show for the first time objects which are fainter than about  $16^m$  in these fields. As the limiting magnitude of the ESO (B) Survey is about  $21^m.5$ , there is obviously here a rich field for discoveries.

Mr. H. Schuster, ESO staff astronomer on La Silla, conducted the observations with the assistance of Mr. D. Ballereau.

In order to systematize the search for new objects, a joint programme has been initiated between ESO and Uppsala Observatory in Sweden. The coordinators are Professor E. Holmberg, for Uppsala, and Dr. R. M. West for ESO.

The aim of this search is to identify all the brighter, already-known galaxies which are seen on the plates, and to find new, fainter ones which are interesting from an astronomical point of view. So far, on the first 40 plates, more than 200 peculiar, and in some cases interconnected, galaxies have been found.

At the same time, all known stellar clusters and planetary nebulae are being listed.

The results of this ESO/Uppsala collaboration will be published in the *Astronomy and Astrophysics Supple-*



ment Series. The first lists have been submitted for publication and more will follow shortly.

These lists will be of great help to southern hemisphere astronomers in picking out objects which are interesting for future research programmes. Some of the galaxies, recognized on the original plates in Chile by ESO astronomers there, have already been further studied.

### Wilson to be Consultant for Telescope Project

Following the distribution of Technical Reports Nos. 2 and 3 dealing with the optics of the 3.6 m telescope and methods of testing secondary mirrors, Dr. R. Wilson of the TP Division Optics Group in Geneva has been asked to act as a consultant for the Canadian-French 3.6 m Telescope Project in the field of optical test procedures.

The request came from Dr. H. Richardson of the Dominion Astrophysical Observatory in Victoria, Canada, an acknowledged expert and innovator in astronomical instrumentation, particularly in spectrographs and related equipment. This cooperation between the two groups should further strengthen ESO's good relations with the Canadian-French project.

### Mining Commission Visits La Silla

A Chilean Government commission visited La Silla at the end of May in connection with measures that might someday be required to protect the scientific observations from air pollution. Such pollution might result from mining or other operations in the area or from misuse of the La Silla airspace by aircraft.

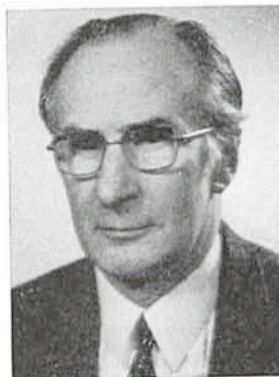
The 9-man mining commission (Comisión Redactora del Nuevo Código de Minería) was shown around by Prof. B. E. Westerlund, Director of ESO/Chile; G. Bachmann, Head of Administration, Hamburg; and G. Anciaux, Administrator, La Silla.

Such visits are very useful and provide better insight into the problems faced by the Commission. These mainly concern the possible measures required under the new Mining Code for safeguarding all sites in the country that are of historical, scientific or cultural interest.

The MESSENGER is at present planned as a quarterly publication. Contributions for issue No. 3 should accordingly be received by the editor by January 15, at the latest. They may be sent directly to The Editor, The Messenger, ESO/Hamburg, or via the local correspondents, namely:

- R. Havlen, coordinator, Chile
- M. de Groot, La Silla (scientific matters)
- M. Becker, Santiago
- N. Rodgers, ESO TP Division, Geneva

### A New Method for the Alignment of Large Telescopes



Prof. A. Behr

The full advantages of a large telescope of high optical quality can be achieved only if the optical elements are perfectly aligned. Lateral displacements of the two mirror axes of a Ritchey-Chrétien system by a few tenths of a millimetre due to flexure under the unavoidable influence of gravity in different posi-

tions of the telescope already show an effect on the quality of the astronomical results, although they are normally not detectable during the time of observation.

The misalignment, however, and deviations of the optical surfaces from their ideal form can be detected from the intensity distribution in an extrafocal stellar image. The following method to keep the alignment of the 3.6 m telescope under permanent control has been developed by Professor A. Behr, visiting scientist at the TP Division.

The intensity in the extrafocal image is measured by an excentrically-rotating diaphragm with a frequency of 10 Hz. The result is found by Fourier analysis. In principle, the necessary correction can be found in about 10 seconds of integration time and can be immediately applied to the telescope. Under normal seeing conditions the method is independent of seeing and guiding errors. With poor seeing, longer integration times are necessary.

Laboratory experiments at the ESO TP Division at Geneva gave promising results. A test on the 1.6 m Ritchey-Chrétien telescope at the Vienna Observatory (September, 1973) was successful. Tests have been made (June, 1974) on the 1 m telescope on La Silla in order to improve the method and to develop foolproof equipment for the 3.6 m ESO telescope.

Professor Behr has written on this subject in *Astronomy and Astrophysics* (1973).

### Passing the time in Hamburg

There are quite a few things to do in Hamburg besides looking at the stars, but apparently still not enough. We can fit in a bit more after work. A Staff Association meeting was therefore held one sunny morning at the end of August to consider this and some graver matters.

Almost everyone present favoured more sport, at least on paper. A 100 % interest in swimming was expressed and written down, more than 50 % were for sailing and horse-riding. The great indoors, as typified by bowling, chess and badminton, aroused varying percentages of response. After the meeting we got down to the nitty-gritty, and five people actually signed up for blowy hours on the Alster.