

## FROM THE ESO COUNCIL MEETING

### ESO/CERN Agreement Renewed

The 23rd meeting of the Council of ESO was held in Hamburg on June 19/20.

At this meeting it was decided, among other things, that the ESO/CERN agreement for cooperation on the 3.6 m Telescope Project should continue for a further three years, as from September 15, 1975. This important agreement, which has already been operative for five years, gives ESO access to CERN facilities, including premises in Geneva where a combined staff totaling 49 is currently employed.

Now is the peak period. By 1976, much of the construction work on building and telescope will have been done, but there will still be a good deal of work in the initial operational stages and particularly on the continuing auxiliary instrumentation programme.

### Changes in Council and Finance Committee

Prof. A. Lallemand resigned as French delegate to Council in December, 1973. He was succeeded, in the recent Council meeting, by Prof. J. F. Denisse.

Prof. Lallemand became a delegate of the ESO Council in the year 1968, when he succeeded in this capacity Prof. Charles Fehrenbach. Lallemand has become world-famous for his contributions in the field of electronic detection techniques, particularly for developing the so-called "Lallemand camera". He has always shown a deep interest in the European Southern Observatory where his advice in the field of instrumental developments was much appreciated. He has long been connected with the Observatoire de Paris, where he has now reached the retiring age.

Prof. J. F. Denisse has been with the CNRS (National Space Research Centre) since 1968 and before that was

director of the Institut National d'Astronomie et Géophysique for three years. He made his career in various domains of astronomy and has been particularly interested in radio astronomy. He was born near Paris and is aged 59.

Mr. H. Dumont, a French delegate in the ESO Finance Committee, resigned at the end of 1973 to take up the position of French Consul-General in Montreal.

### Obituary

Council expressed sympathy with the relatives of Prof. Paul Bourgeois who died recently. Prof. Bourgeois, a leading Belgian astronomer, was one of the "founding fathers" of ESO.

## 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° to — 75°.

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<sup>m</sup> in these fields. As the limiting magnitude of the ESO (B) Survey is about 21<sup>m</sup>.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 Supplement*.

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 positions

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 eccentrically-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.

## New External Auditor Appointed



Mr. G. Pirot

Following a long period of service by the Bundesrechnungshof (Federal German Government audit office) as external auditor of the accounts of ESO, the Council, at its December 1973 meeting, decided to rotate this appointment and accept an external auditor from the French Cour des Comptes.

The new auditor is Mr. G. Pirot, a senior official of the Cour. He attended the Finance Committee meeting in Hamburg on June 6 as an observer.

Mr. Pirot has already held meetings with the previous external auditors and the present internal auditor and plans to make his first visit to Chile early in 1975.

## Vacancies in ESO

3. 5. 1974	Electronics engineer	Grade: 9/10
	Location: ESO TP Division, Geneva	Code: 204
11. 6. 1974	Systems analyst/programmer	Grade: 8/9
	Location: ESO/Chile, Santiago	Code: 104/106
15. 7. 1974	Mechanic	Grade: 6
	Location: ESO TP Division, Geneva	Code: 501
8. 8. 1974	Head, Finance Services	Grade: 10/11
	Location: Hamburg	Code: 701
17. 9. 1974	Administrator	Grade: 9/10
	Location: Chile	Code: 700

## Introducing your ESO Staff Association Representatives

Chairman of the local committee at the Hamburg/Bergedorf office is Eva Kunstein. Miss Kunstein, who is German, works as assistant buyer in the Purchasing/Shipping Service. Hedwig Geier is the other committee member.

Matters under discussion by the Staff Association include the statutes of the Staff Association, revision of health insurance, old age pensions and language training.

On August 22, Wolfgang Müller succeeded Michel Becker as chairman of the ESO/Chile branch of the SA. Of German nationality, Mr. Müller joined ESO in 1971 and is currently working on La Silla as construction engineer. J. Eschwey was selected deputy. The other members are W. Eckert, L. Ulltjärn and E. Schumann.

At the TP Division, Geneva, Raymond Wilson, a

Briton, has been the local committee chairman since last year. Now a senior physicist, Dr. Wilson worked for many years with Zeiss of Oberkochen before coming to ESO in 1972. The other committee members are F. Simon and R. Zurbüchen.

An initial meeting of all three chairmen of the ESO Staff Association was held in Geneva on April 18 and 19. The final version of the revised Staff Rules and Regulations was discussed first in closed session and then with the Directorate. The first version of the Statutes of the Staff Association was prepared, as well as an organigram of the SA.

A further meeting of the Geneva and Hamburg branches of the SA was held in Hamburg on August 26, with the participation of E. Kunstein, R. Wilson, H. Geier and F. Simon.

On September 30, the latter group met again at Hamburg to finalize the statutes of the SA.



Wolfgang Müller



Eva Kunstein



Raymond Wilson

## Barbecue!

Hard on the heels of a Staff Association meeting at which a leading item was the encouragement of sporting activities, came the first barbecue arranged by the staff in Hamburg.

The place selected, in Lüneburg Heath State Park south of the city, offered facilities for swimming and riding, meadows and woods for walking and, pleasantly in view of the open-air dining tables, a little lake.

Within a few minutes of arrival the preparations were in full swing. H. Neumann set up the grill, R. Doorn was handling logistics, and the size and number of steaks and other goodies soon administered to the throng brought appreciative comments.

Almost immediately, a trio of young ladies was rising to the challenge of a run around the lake. Appeals to respect the elementary laws of digestion proved unavailing. Anyway, they survived.

Next we turned to football. In almost no time a football ground and two mixed teams were organized out of nothing. Someone produced a ball soft enough to



cause no damage and in a few moments a general mêlée was in progress. In the thick of it was P. Huijmans. E. Kunstein and E. Rossi were often there. G. Bachmann managed to be in the right place at the right time. A. da Costa Campos was everywhere and nowhere, while the footwork of J. C. Carreau baffled many.

Hardly had we recovered than we were off to test our condition in the swimming-pool.

By 6.30 we were heading back to Hamburg and whatever the night still had in store.

## CERN Finance Committee Working Group on Pension Policy

The following note appearing in the CERN Bulletin of 29. 7. — 4. 8. 74 and signed by the chairman of the Staff Association Executive Committee and the Director of the Dept. of Administration may also have a certain interest for the ESO staff and Administration:

The Finance Committee, at its meeting on 25 June 1974, after discussing the Interim Report of the Working Group, decided not to change at present the method of financing the Pension Scheme but to re-examine the situation in five years' time. In the meantime, a study should be made of the advantages and disadvantages of capitalized and budgetarized financing. The Committee asked the Working Group now to examine the proposals for improvement in benefits and make recommendations to the Finance Committee on these, together with information about their financial and budgetary consequences.

The next meeting of the Working Group takes place on Monday 29 July, when, in addition to improvements of benefits, the question of guarantees and the problem of taxation will also be discussed. The Administration and the Staff Association are both concerned about the danger to the Fund if its capital were insufficient to cover the benefits to be provided.

Representatives of the Staff Association are present as observers in the Finance Committee

when questions concerning the staff are discussed; they take part, however, in discussions in the Working Group of the Finance Committee.

## Newcomers to ESO

Heino Wiring, the new internal auditor replacing Frank De Buck, took up duty in Hamburg in July. Mr. Wiring comes to ESO from ELDO (European Launcher Development Organization) in Paris, where he held various posts on the financial side.

He enjoys classical music — also travel, for which there will be many opportunities in his new job.

He is married and has a son.

Arthur da Costa Campos is now personnel officer for the Hamburg office, where he began in July. He was previously in the personnel service of another international organization, EUROCHEMIC, in Belgium.

Mr. da Costa plays football, badminton and table tennis, though family life with wife and three children now takes much of his spare time. He is a strong believer in the "personal touch".

François Mees joined ESO on November 1 and will be responsible for the electronics group in Chile. He has been working with SABCA (Société Anonyme Belge de Constructions Aéronautiques) in Brussels as head of the circuit designer group.

Scuba-diving is one of his free-time interests.

## Staff Movements from Jan. 1 to Nov. 1, 1974

### ARRIVALS

#### Office of the Director-General, Hamburg

Harry Neumann, German, driver, 1. 1. 74  
Kurt Kjær, German, proofreader-copy editor, 1. 3. 74  
Roman Marcinowski, Belgian, accountant, 15. 3. 74  
Heino Wiring, German, internal auditor, 1. 7. 74  
Arthur da Costa Campos, Belgian, personnel officer, 8. 7. 74

#### Santiago

André Theisen, Belgian, personnel officer, 8. 1. 74  
Wilhelm Gierse, German, finance officer, 15. 3. 74  
Sten Rönnbom, Swedish, electronics technician, 1. 9. 74  
Willem Wamsteker, Dutch, astronomer, 1. 10. 74  
François Mees, Belgian, head of electronics group, 1. 11. 74

#### La Silla

Erling Bechmann, Danish, foreman, 7. 1. 74  
Christopher Smith, Canadian, resident astronomer, 15. 9. 74

#### TP Division, Geneva

Svend Lorensen, Danish, astronomer, 1. 1. 74  
Susanne Negre, French-German, administrative assistant, 1. 7. 74  
Bernard Amrhein, French, lab. technician (electro), 1. 7. 74  
Manfred Ziebell, German, electronics engineer, 1. 7. 74  
Torben Andersen, Danish, mechanical engineer, 16. 7. 74  
Christophe Faraut, French, programmer, 1. 9. 74  
Susan Kay, British, secretary, 1. 9. 74  
Sten Milner, Danish, mechanical engineer, 16. 9. 74  
Bernard Forel, French, technical draughtsman (mech.), 1. 11. 74

### DEPARTURES

#### Hamburg

Karl-Heinz Schwarz, German, driver, 15. 1. 74  
Suzanne Fioupou, French, administrative assistant, 31. 7. 74  
Frank De Buck, Belgian, internal auditor, 31. 8. 74  
Jürgen Meuser, German, head Purchasing/Shipping, 21. 9. 74

#### Santiago

Horst Scheffold, German, senior administrator, 31. 1. 74  
Hendrik Straatman, Dutch, administrative officer, 31. 3. 74  
Philippe Bourlon, French, electronics engineer, 31. 8. 74

#### La Silla

Johannes van Koeverden, Dutch, technical assistant, 30. 4. 74

#### Geneva

Rolf Muller, German, designer-draughtsman, 28. 2. 74  
Rita Dubbelman, Swedish, secretary, 31. 5. 74  
Bernth Malm, Swedish, electronics engineer, 15. 7. 74

### TRANSFERS

#### from Marseilles to La Silla

Paul Giordano, French, mechanic, 15. 1. 74

#### from La Silla to Santiago

Daniel Hofstadt, French, technical assistant (electro), 15. 5. 74

## RESUMENES DE ALGUNOS ARTICULOS

### Exito del sistema de control telescópico en La Silla

Transportado desde Ginebra hasta Chile a fines de 1973 e instalado más tarde en La Silla, el sistema de control telescópico más avanzado del mundo funciona normalmente allí ahora.

El sistema fue instalado por un equipo de cinco personas pertenecientes al grupo de control de la División TP, que lo

ha proyectado. Ellos son: J. van der Lans, jefe del grupo, P. Stürzinger, R. Zurbüchen, J. van der Ven y S. Lorensen.

Completamente computerizado, el sistema tendrá una precisión y una flexibilidad funcional totalmente nuevas en astronomía. Dada las coordenadas en el catálogo de las estrellas, el computador, siguiendo las instrucciones, puede dirigir el telescopio hacia cualquier objeto estelar, hacer el ajuste necesario para la hora precisa de la observación, la refracción del aire, etcétera, y fijar la posición de la apertura de la cúpula. Su memoria puede acumular un programa completo de trabajo para una noche, preparado por el astrónomo, y, con una poca molestia adicional, él puede ejecutar muchas otras tareas que el astrónomo mismo tuvo que hacer en el pasado.

### Decisiones de la 23.<sup>a</sup> Reunión del Consejo de ESO, que tuvo lugar en Hamburgo los días 19-20 de junio, 1974.

#### Extensión del Convenio ESO/CERN

En esta reunión se decidió de prolongar para un período de tres años desde el 15 de septiembre 1975 el Convenio ESO/CERN para la cooperación sobre el proyecto del telescopio de 3,6 m.

Este convenio importante, que ya ha estado en fuerza durante cinco años, da a ESO el acceso a las facilidades de CERN, incluyendo oficinas en Ginebra, donde 49 personas están actualmente empleadas.

#### Cambios en el Consejo y en el Comité de Finanzas

El Profesor A. Lallemand, delegado francés en el Consejo, dimitió a la misma época. El cargo del Profesor Lallemand ha sido asumido por el Profesor J. F. Denisse.

El Sr. H. Dumont, delegado francés en el Comité de Finanzas, dimitió a fines de 1973 para asumir las funciones de Consul-General francés en Montreal.

#### Obituario

El Consejo expresó simpatía con la familia del Profesor Paul Bourgeois, quien murió recientemente. El Profesor Bourgeois, un prominente astrónomo belga, fue uno de los "padres fundadores" de ESO.

#### Nuevo auditor externo

Como sucesor del Bundesrechnungshof (auditor oficial del Gobierno alemán), que ha trabajado para ESO durante muchos años, el Consejo ha decidido de aceptar un auditor de la Cour des Comptes francés, en Paris.

El nuevo auditor externo es el Sr. G. Pirot. El Sr. Pirot hará visitas a Chile probablemente en enero de 1975.

#### Visita de la Comisión Minera a La Silla

Una comisión del Gobierno chileno ha hecho una visita a La Silla a fines de mayo para estudiar las posibles medidas a tomar en el futuro para proteger las observaciones científicas contra la polución aérea. Dicha polución podría resultar de operaciones mineras u otras en la región, o del abuso del espacio aéreo de La Silla por aviones.

La Comisión Redactora del Nuevo Código de Minería tiene nueve miembros. Fueron recibidos por el Prof. B. E. Westerlund, Director de ESO/Chile; y los Srs. G. Bachmann, Jefe de Administración, Hamburgo; y G. Anciaux, Administrador, La Silla.

Tales visitas caben en el programa normal de la Comisión, quien está estudiando las medidas a tomar para proteger los sitios en el país que tienen un interés histórico, científico o cultural.