EUROPEAN SOUTHERN Observatory



ANNUAL REPORT 1968

Organisation Européenne pour des Recherches Astronomiques dans l'Hémisphère Austral

EUROPEAN SOUTHERN Observatory



ANNUAL REPORT 1968

Hamburg-Bergedorf 1969

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A. INTRODUCTION

The year 1968 will be important in the history of ESO because, during its course, the essential buildings of the first construction stage were terminated: On La Silla the Hostel and the buildings for the 1 m Photometric Telescope, the 1.52 m Spectrographic Telescope, and the Schmidt Telescope with their respective domes, in Santiago-Vitacura the Headquarters and the Mechanical Laboratory. They were provisionally accepted.

The 1 m Photometric Telescope was transferred from the "Astro"-dome to its definite building.

The 1.52 m Spectrographic Telescope was installed in late summer.

The Objective Prism Astrograph, which for several years had been working in South Africa, was assembled and put into operation in its special building.

With the approval of the Council the University of Bochum installed a 60 cm Photometric Telescope. The telescope and its "Ash"-dome are the property of the German Research Association (Deutsche Forschungsgemeinschaft). The building is the property of ESO.

ESO lent its administrative and legal advice to the foundation of a new international astronomical journal.

B. LEGAL MATTERS

The contract between ESO and the Empresa Nacional de Telecomunicaciones (ENTEL) was signed after two years of negotiation. This contract entitles ENTEL to install an ultra-short-wave relay station on La Silla. In turn ESO receives without financial obligation two channels of a modern radio telephone connection between La Silla and La Serena and between La Silla and Santiago. The construction work will start next year.

The technical installations on La Silla are waiting for the approval of the state authorities. ESO had to submit very sophisticated plans.

ESO applied for a concession to establish a small airfield near the access road to Campamento Pelícano. At the same time the Dirección de Aeronáutica was asked to give its approval.

ESO claimed the mining rights in the south west area of its property in order to avoid the extension of the copper mine Soledad, which became active in the beginning of this year.

Further legal matters in connection with buildings and instruments are mentioned below.

C. BUILDING ACTIVITY

1. Road Construction and Maintenance

Early in 1968, the firm of Figueroa y Alemparte finished the road to the summit area. Under the same contract the platform for the 3.6 m Telescope building was made at an altitude of 2.435 m. Its maximum diameter is 74 meters and the minimum is 40 meters. The original altitude had to be diminished by 9 meters.

Although the roads were subjected to an ever increasing traffic, their maintenance was handicapped because of lack of adequate equipment. In order to diminish the highly disturbing dust caused by the traffic in the area of the Observatory, various attempts with dust absorbers were made. With cheap absorbers, however, the maintenance will be considerable and in the long run expensive. It appears that it would be a sound investment to cover the roads in the whole ESO area with asphalt.

2. Power, Water, Sewage, Heating

April saw the acceptance of the heating plant, the electrical, sanitary, thermal ventilation and compressed air installations for the buildings of the photometric, spectrographic, and Schmidt telescopes.

From May to July the power transmission line which had caused extensive trouble was completely overhauled by a local firm assisted by ESO personnel at the expense of the original contractors. The wires were re-set at wider distances on the poles and refixed on their supports. The telephone and control cable was removed from the poles and buried in the soil along the power line.

A third generator was installed in the power house at Pelícano in July and August. There are now 3 identical generators in operation, each of 115 kVA.

In Pelicano the wells and pumps have been working without interruptions. The level of the underground water remained constant. The filter plant had to be operated manually in accordance with the instructions of the designers, until a constant consumption was reached. In December the firm Aguasin of Santiago made a study of the filter plant in order to install the timers for the automatic filter control and to correct the operation of the water softener. The hostel and each of the 3 main telescope buildings were provided with a Culligan water softener. An inspection of the interior of the water tubes showed no deposits. The tubes were clean and in good condition. The quality of the water was satisfactory. An inspection of the interior of the water tanks showed a brown deposit containing manganese. The walls were scraped and protected with cement wash. On the whole the installations have rendered good service.

Some of the sewage lines of the hostel were blocked by cement and had to be cleaned.

The heating system worked satisfactorily.

3. Camp

In Camp Pelicano the roof of the guesthouse had to be repaired. Apart from routine maintenance, the construction of a new septic tank was necessary.

4. Buildings on La Silla

All the buildings and facilities on La Silla were completed during 1968. They were handed over to the Technical Department in the order of their completion.

In general, one may say that the quality of the construction work is acceptable.

The building for the Objective Prism Astrograph was handed over to the Technical Department in May. The floor of its observing room and its insulation as well as the floor of the movable platform were executed by ESO's personnel. When, late in July and August, the astronomers began their work, some modifications in the photographic laboratory and the electrical installation became necessary.

The building for the Bochum telescope was accepted in April.

After the Photometric Telescope had been transferred to its permanent building, the "Astro"-dome building was prepared for the installation of the Danish 50 cm Photometric Telescope. A new concrete foundation was constructed and the wooden floor raised.

The Hostel was accepted from TECSA late in July. The kitchen equipment was installed by ESO's personnel. The Hostel was put into service in August.

Our Technical Department prepared the sites for 2 prefabricated dormitories and 2 bungalows. Their erection is comparatively simple and can be carried out by our own personnel under the supervision of a foreman of the Dutch firm Polynorm. They will be finished in the first half of 1969.

The Technical Department carried out some concrete work and made some electrical installations for the Max-Planck-Institut, Munich-Garching.

The elevators in the buildings of the 3 larger telescopes as well as the rising floors in the buildings of the spectrographic and photometric telescope and of the astrograph were accepted by ESO in April. Their functioning is entirely satisfactory.

5. Domes

The domes of the 3 main telescope buildings were finished and taken over from the firm of Seibert by March 1968. At the time of their acceptance the domes were completely satisfactory. But in the course of the year the pneumatic rubber seals of the domes showed leakages and the motion of the wind screens proved to be unreliable. In the cold winter months the domes encountered unexpected resistance during rotation. A claim has been placed with the suppliers of the domes to repair these defects.

On the other hand, the thermal insulation of the domes appeared to be very good, so that during daytime their interior temperature did not rise by more than one degree Celsius as compared with the night.

The 2 "Astro"-domes have to be improved considerably in order to become as dust-tight and heat-insulated as the Seibert domes. The interior of the dome of the Astrograph building was covered with sheets of Styropor (foam plastics). The insulation was then improved but not to the same degree as that of the Seibert domes.

6. Headquarters Building in Santiago

The Headquarters building in Santiago was accepted from the firm of DESCO in September. The inspecting engineers left Chile in November. The ventilation and air conditioning plant was taken over in October.

A water well of 28 meters depth was drilled near the Headquarters building during the last months of the year, so that the building can get its water supply either from the public water system or from our own well, thus making ESO more independent of the seasonal fluctuations.

The exterior area was graded by our Technical Department. Some gardening has been done in the patio and the immediate vicinity of the building.

The Mechanical Laboratory was accepted at the same time.

All the buildings mentioned above were equipped with standardized furniture with the exception of the living room in the Hostel and the reading room in the Headquarters building, for which special furniture was provided.

7. Communication System

The communication system mentioned in C. 6. of the Annual Report 1967 was used throughout the year. Radio connection between La Serena and La Silla was not very satisfactory. It was often interrupted. Our electronic staff has been busy on this problem; but at the end of the year a good solution had still not been found.

D. FUTURE CONSTRUCTIONS AND INSTALLATIONS

1. Building for a 50 cm Photometric Telescope

As ESO is planning to erect a partly automatized 50 cm photometric telescope, the building for this instrument will have to be constructed on La Silla. Its site will be east of the northern "Astro"-dome. It is planned to have the Brorfelde telescope installed in a second identical building, thus making the "Astro"-dome free for other instruments.

2. Building for the 3.6 m Telescope

During the year the firm of Lenz in collaboration with the ESO Management, the Instrumentation Committee and the Working Group for Buildings finished the architectural design of the building. They are proceeding with the technical design, which will be finished by the middle of 1969.

3. Dome for the 3.6 m Telescope

At the end of the year the predesign of the dome for the 3.6 m Telescope was finished by the firm of Seibert. Invitation for tenders will be sent to 10 European firms early in 1969.

4. Residences in La Serena

In the area of ESO's property in the Calle Cisternas in La Serena three prefabricated residences are to be erected in the course of 1969. They will considerably facilitate the accommodation of ESO staff in La Serena.

E. INSTRUMENTS

a) Prism Astrolabe

The instrument worked to our entire satisfaction throughout the year.

b) Objective Prism Astrograph

The Objective Prism Astrograph, the mechanical parts of which had been kept for a long time in the Pelícano store, the optical parts having been brought to France, was erected and assembled during May. It began its routine work in mid-June.

c) Photometric Telescope

During the months of September and October, the telescope was moved from its provisional site in the "Astro"-dome to its proper building. The telescope was equipped with a polarimeter built in the workshop of the Göttingen Observatory.

d) Spectrographic Telescope

During the months of May and June, the mechanical parts of the telescope were assembled by a REOSC crew with the help of our Technical Department. The connections between the telescope and the electronic switchboard were carried out at the same time. In July, the mirrors were installed and adjusted by ESO astronomers under the supervision of Mr. Bayle, the Director of REOSC. By the end of the month, both the coudé and the Cassegrain combinations had been checked. Astronomical photographic observations started with satisfactory results.

e) Schmidt Telescope

Dr. Strewinski handed over the large majority of the drawings of the mechanical parts to the firm of Heidenreich & Harbeck, where the construction has started. As soon as the cell with the system of counterweights is ready, it will be sent to Zeiss, Oberkochen, in order to test the mirror in its final position.

f) 3.6 m Telescope

1. Optics

During the grinding of the large mirror in the optical shop of REOSC it turned out that the top layer of the blank did not quite conform to the specification. In agreement with the firm of Corning Glass International in U. S. A. the blank was sent back to their plant in order to be improved. The blank will be returned to Europe by the middle of 1969. The silica blanks for the auxiliary mirrors, 2 convex secondaries and 3 flats, have been delivered by Heraeus, Hanau, and were received by REOSC for figuring.

2. Mounting

During the year, Dr. Strewinski finished the main part of his predesign drawings of the tube. They were demonstrated to the Instrumentation Committee on 5 November 1968 and were found to satisfy the high expectations. The remaining part of the predesign mainly comprising the mounting is expected to be finished during the first half of 1969.

g) 50 cm Photometric Telescope

From the experience gained until now, it is obvious that the 1 m photometric telescope will be more and more overloaded in the future. Many programs concerned with brighter stars can, however, be carried out easily with a smaller instrument. At the recommendation of the Scientific Programs Committee, the Council has agreed to acquire another F/15photometric telescope of 50 cm aperture. The Copenhagen Observatory generously agreed to build this telescope at their self cost. The instrument is to be provided with a digitally controlled presetting system. It should not be considered as an additional telescope in the sense of the ESO Convention (Art. II, 3.), but is to be considered as a prestudy of auxiliary character in the preparation for the large telescope.

h) Auxiliary Equipment

A fairly complete list of auxiliary equipment was prepared by the Directorate and agreed upon by the Instrumentation Committee (cf. Ann. Rep. 1967, p. 12). The following equipment was sent to Chile: 1) For the Santiago Headquarters: Complete basic equipment for the electronic laboratory, one stereomicroscope, one Linhof-system for reproduction, enlarging, etc., one Zeiss spectrum-projector, one Zeiss-Abbe comparator.

2) For La Silla: A complete basic equipment for the electronic laboratory, complete electrically controlled clock system from Rohde & Schwarz, Munich, a Zeiss spectro-photometer, 3 stereomicroscopes, one Zeiss-Abbe comparator, one Zeiss rapid photometer ("Schnellphotometer").

The Directorate began with the development of a fully automatized iris photometer which will be constructed by the workshop of the Göttingen Observatory.

The Directorate also started with the predesign of the whole system of automatic functions of the 3.6 m telescope.

i) Aluminizing Plant

During March, the Aluminizing Plant was installed in the ground floor of the spectrographic telescope building under the supervision of the manufacturer in close cooperation with our Technical Department.

F. SCIENTIFIC ACTIVITY

1. Meteorology and Seeing

Meteorological conditions were not quite as good as during the last two years. In table 1 the total number of clear hours and photometric clear nights is given for the years 1966, 1967, and 1968. A photometric clear night is defined as a night with at least six continual clear hours.

Table 1			
·	1966	1967	1968
Possible number of observing hours	3681	3681	3690
Actual number of observed clear hours	2481	2412	2197
Possible number of observing nights	365	365	366
Actual number of photometric clear nights	252	239	223

Experiments with the meteorological masts (cf. Ann. Rep. 1967, p. 13) in combination with seeing observations were carried out regularly. Only weak correlations were found, partly due to the difference in the seeing scale of different observers. Next year experiments will continue with the Astronomical Seeing Monitor generously lent to ESO by CARSO.

The complete meteorological results for 1968 will be published in a forthcoming number of the ESO Bulletin.

Observations with the 15 cm Photoelectric Telescope were continued in 1968, but with rather long interruptions due to serious failures of the amplifier. We expect to use the instrument with a new amplifier in 1969.

2. Astronomical Observations

a) Astrolabe

The project of the Prism Astrolabe at Cerro Calán (Santiago), a joint work between ESO and the Universidad de Chile, progressed throughout 1968. The observations of the first series of catalogue groups were completed in December 1968, and a new series of catalogue groups, composed also of FK4 and FK4 supp. stars, commenced at the end of 1968.

Since October 1968, all the calculations concerning the astrolabe work have been made with the IBM 360/40 electronic computer of the Physics and Mathematics Faculty of the Universidad de Chile.

An analysis of the time and latitude results obtained with the astrolabe during 1966 and 1967 were presented to the Colloquium No. 1 of the IAU: "Problems of time and latitude determinations in the Southern Hemisphere", held at La Plata, Argentina, in November 1968.

b) Objective Prism Astrograph

From the middle of June until the end of the year, a group of French observers was working with the instrument. They obtained a total of 266 plates including plates for calibration, focus, and various tests. The objects were fields in and between the two Magellanic Clouds. During 10 days around full moon the instrument could not be used.

All the observers already had extensive experience with this instrument. They were impressed by the excellent constancy of focus during the night. At the Zeekoegat Station in South Africa a permanent focus control was necessary.

Observers were from 18 June until 17 August R. Burnage, Haute Provence, from 17 August until 6 November A. Florsch, Strasbourg, and since 17 July Annie Laval, Haute Provence, H.-E. Schuster, a member of the ESO staff, La Silla, assisted in the observations in order to become acquainted with the instrument.

Ch. Fehrenbach adjusted the instrument and the optics in May. He paid another visit in the second half of November, when he checked the observations and improved the adjustment of the instrument.

c) Photometric Telescope

Early in 1968, this telescope with the ESO photometer (cf. ESO Bulletin No. 1, p. 35) was still in use by the groups from Roden-Groningen, Netherlands, where the photometer had been developed and constructed. From the end of May until September it was used by visiting astronomers from other countries.

The accompanying table 2 lists the principal observing programs. From time to time they had to be interrupted for maintenance and testing; special mention should be made in this connection of the tests conducted by A. Behr with his newly developed polarimeter. Throughout the year the night assistants rendered excellent help to the observers.

Table 2

The use of the 1 m Photometric Telescope during the year 1968

Dates 1968	Observers	Observatory	Country	Program Main Items
Jan. 1 — Jan. 10	Blaauw, Baas, van't Foort	Groningen-Roden	Netherlands	Kapteyn Selected Areas; uvby.
Jan. 11 — Jan. 16	Mendoza	Santiago (Cerro Calán) Tonantzintla	Chile Mexico	V Puppis; 8 colors
Jan. 17 — Feb. 10	Blaauw, et al.	Groningen-Roden	Netherlands	as before
Feb. 29 — May 20	de Vries	Groningen-Roden	Netherlands	O and B stars; multicolor photom.
May 21 — June 3	Geyer	Bonn	Germany	Objects in omega Centauri, UBV scales.
	Haug	Tübingen	Germany	B stars, photom. scales; UBV
June 4 — June 16	Ardeberg	Lund	Sweden	Scorpius field, Mel. 227; St and CX Aqr; UBV
June 17 — June 30	Geyer Haug	Bonn Tübingen	Germany Germany	as before as before
July 1 — July 17	Ardeberg	Lund	Sweden	as before
July 18 — July 31	Geyer Haug	Bonn Tübingen	Germany Germany	as before as before; also Η β
Aug. 1 — Aug. 31	Ardeberg	Lund	Sweden	as before
Sept. 1 Sept. 4	Mendoza	Santiago (Cerro Calán) Tonantzintla	Chile Mexico	T Tauri; BVRI
Nov. 5 — Nov. 11	ESO staff for van Hoof	Louvain	Belgium	β CMa var; UBV
Nov. 12 — Nov. 25	Fehrenbach, Mianes, Perrin	Marseille s Lyon	France France	Magell. Clouds stars; multicolor
Nov. 26 — Nov. 29	ESO staff for van Hoof	Louvain	Belaium	as before
Nov. 30 — Dec. 9	Denovelle	Uccle	Belgium	OB star fields: UBV
Dec. 10 — Dec. 23	Fehrenbach, Mianes, Perrin	Marseilles Lyon	France France	as before
Dec. 24 Dec. 30	van Hoof	Louvain	Belgium	β CMa var.; UBV

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d) Spectrographic Telescope

The telescope has been working from 15 July onwards. It was tested photographically at the Cassegrain focus with a provisional platcholder. This showed that images are very good throughout the whole field of $25' \times 25'$ (16 \times 16 cm). Photographs of planets, asteroids, comets, globular clusters, planetary nebulae and galaxies have been taken. During this period Dossin rediscovered two lost small planets.

The first spectra were obtained at the Cassegrain spectrograph (Chilicass) with a dispersion of 73 Å/mm on 7 October. Within a few days, the observations became regular on the following programs:

Small Magellanic Cloud — observations and program of Florsch

"Jonction 1" (stars between the two Magellanic Clouds) — program of N. Carozzi, Marseilles Observatory

Large Magellanic Cloud — program for Marseilles Observatory.

These observations were made by Dossin, Maurice, and Prévot.

From 17 October 1968 to 25 February 1969 there were 129 nights of which 120 were clear (93 %). The apparent diameter of the image of a star of 11th magnitude was compared with the width of slit of 1.1 second of arc in order to derive a measure of atmospheric turbulence.

The statistics are as follows:

Diameter (")	Percentage of observations	
1 — 1.5	30 %	
1.5 - 2	35 %	
2 - 2.5	16.8 %	
2.5 — 3	8.2 %	
3 — 4	7.7 %	
> 4	2.3 %	

3. Scientific Programs Committee (SPC)

The Scientific Programs Committee was established in the ESO Council meetings of 21/22. 11. 1966, 1. 6. 1967, 1. 12. 1967 with the following members: B. Strömgren (Chairman), J. Delhaye, E. B. Holmberg, P. Swings, G. Traving, Th. Walraven, and with the Scientific Director of ESO acting as Secretary and liaison with the Directorate.

The Committee's principal tasks will be (1) to advise the Directorate and the Council about the general scientific policy of ESO and (2) to advise the Directorate about the applications for observing programs of visiting astronomers.

The SPC's first meeting was held on 2 May 1968; the second one on 17 October 1968. With respect to task (2) mentioned above, the SPC proposed rules of procedure which were formally adopted by the ESO Council in its meeting of 2 and 3 July 1968. The following items are of particular interest: allocation of time is arranged as a rule for intervals of 6 months: March through August and September through February; applications by visiting astronomers must be submitted to the Directorate in Hamburg at least 6 months before the beginning of these periods, and the applicant will be informed about the decision of the Directorate about 4 months before those dates. The Directorate reminds the observatories in the ESO Countries of the above deadlines for applications 10 months before the beginning of the period.

With regard to programs by ESO staff, to which one third of the time will be allocated, the SPC is not supposed to advise, but merely to be kept informed.

Among the matters of general scientific policy we mention here that the first SPC meeting advised the Council meeting of 2 and 3 July 1968 about the desirability of acquiring an equatorial 50 cm photometric instrument (see page 10) and that the SPC formulated at both its meetings recommendations for the future acquisition of large new telescopes with particular reference to the photometry of very faint stars, to astrometry, and to very large Schmidt optics. Furthermore, it proposed the organization of a symposium on the Magellanic Clouds on the occasion of the dedication of the observatory in Chile in March 1969.

4. Publications and Library

During 1968 the following publications appeared:

Annual Report for 1967 Bulletin No. 3, No. 4, and No. 5.

A larger number of books and journals were shipped to Santiago.

G. ORGANIZATION

1. Office of the Director

A. Blaauw, Groningen, joined the ESO Directorate as part-time Scientific Director.

S. Laustsen, who until 31. 8. 1968 acted as part-time consultant, joined the Directorate as astronomer.

H. Geier was engaged as secretary from 1 January 1968.

In its meeting of 2 and 3 December 1967 the Council decided to nominate O. Heckmann as Director General, A. Blaauw as Scientific Director, and J. Ramberg as Technical Director, all with effect from 1 January 1968.

On 2 January, the Office of the Director moved into new and more spacious offices in order to cope with the needs of the growing organization.

The internal auditors, Messrs. Accountantskantoor T. Keuzenkamp, Amsterdam, completed their audit for 1967 in harmony with ESO's auditor, Bundesrechnungshof, Frankfurt.

The Bundesrechnungshof was requested by the Council to continue to provide its services for the years 1968, 1969, and 1970.

The Organization's books for 1967 were audited and found correct.

After long negotiations, ESO signed a contract with CERN regulating the affiliation of the ESO staff members in the CERN old age pension scheme.

2. Marseilles

The engineer R. Clop was engaged as assistant to Ch. Fehrenbach. O. Vincent, secretary, left ESO's service late in 1968.

3. Organization in Chile

In its meeting of 2 and 3 July, the Council appointed B. Westerlund as Observatory Director in Chile. Westerlund will begin his work on 1 June 1969.

The structure of the Organization as shown in the organigram of the Annual Report 1966 remained unchanged in 1968.

The following staff members joined ESO in Chile:

- F. Dossin, astronomer, was transferred from Hamburg to Chile to work in Santiago and on La Silla;
- M. Becker, electronics engineer, Santiago;
- P. Fjellerad, mechanical engineer, La Silla;
- H. Hyslop, administrator I, Santiago;
- E. N. Maurice, astronomer, Santiago and La Silla;
- A. J. Siméon, administrator II, La Silla;
- W. Vanhauwaert, precision mechanic, Santiago.

The following staff members left the Organization in Chile during 1968:

- H. Carrasco P., campboss, La Silla;
- R. Holder, civil engineer, La Silla;
- R. Plentl, administrator, Santiago.

Our main office in Chile which was accommodated in the Guesthouse, Calle Gustavo Adolfo 4634, for four years was moved to the Headquarters building in Vitacura in December. Direct radio communication with La Silla was established by transferring the equipment from the Guesthouse to the new building.

As in previous years, we had to raise the salaries and wages of the local personnel as from 1 July by 12^{0} in order to compensate partly the increasing cost of living. The price of the Dollar in Chilean Escudos increased from 6.71 in January to 8.69 in December. The official index went up from 841 in January to 1018 in December.

In the Santiago Guesthouse we had 154 guests during the year. It is expected that from 1969 onwards the Guesthouse will be economically balanced.

The former office rooms have recently been converted into guest rooms. The prices for meals have been increased.

The ESO house in La Serena, Calle Cisternas, has been repaired and repainted. It is now occupied by the maintenance engineer P. Fjellerad.

On La Silla, the former dining room of the camp was assigned to the labourers after the Hostel was put into service.

Special care was taken in the camps in order to fight against the "Vinchucas" (a kind of bug with wings whose bite is dangerous). A general desinfection by the Servicio Nacional de Salud was carried out. Special measures were also taken because of the typhoid fever epidemic which is affecting parts of the country. A general vaccination will be carried out in the near future.

We have sold most of our horses, as they were no longer needed. On the other hand, a few pigs have been bought and are fed with the leftovers of the camps.

On La Silla the number of foxes is steadily increasing. They do not cause any trouble, but they fight the rats.

The Superintendent of the Fire Brigade in Coquimbo kindly advised us about the necessary fire-fighting equipment on La Silla. Our personnel received special instructions.

Several inspection trips were made to inquire about smaller and mostly illegal mining activities in our territories. One may say that, due to the general draught, the living conditions within our property became very severe, so that several families have left. In any case, no increase in the number of settlers is expected. Some suspected mining activities on ESO's property are being investigated.

Our transport section had a difficult year due to many breakdowns and accidents. Various Volkswagen arrived. We are trying to maintain two types of cars only in order to facilitate the purchase and storage of spare parts. We shall have to improve the equipment of our car workshop, as repairs in La Serena are not too satisfactory.

H. ESTIMATED AND ACTUAL EXPENDITURE

The estimated expenditure in the 1968 ESO budget compares as follows with the actual expenditure in 1968:

Budget Items Amounts in 1000 US \$	Budget 1968	Expenditure 1968
I. Capital Expenditure		
A. Land, Buildings, Roads	1 221	1 164
B. Instruments	570	570
C. Consultants and Architects	270	336
TOTAL CAPITAL EXPENDITURE	2 061	2 070
II. General and Overhead Expenses	1 107	991
III. Astronomical and Meteorological Activity, South Africa		
IV. Astronomical and Meteorological Activity, Chile	112	82
V. Maintenance Roads, Buildings and Instruments Unforeseen	32 30	42
TOTAL, INCLUDING EXPLOITATION	3 342	3 185

The total expenditure up to 31 December 1968 can be summarized as follows:

Budget Items Amounts in 1000 US \$	Total Expenditur up to 31. 12. 196	
I. Capital Expenditure		
A. Land, Buildings, Roads	5 628	
B. Instruments	3 030	
C. Consulting Engineers and Architects	1 311	
TOTAL CAPITAL EXPENDITURE	9 969	
II. General and Overhead Expenses	2 966	
III. Astronomical and Meteorological Activity, South Africa	501	
IV. Astronomical and Meteorological Activity, Chile	190	
V. Maintenance Roads, Buildings and Instruments Unforeseen	98 40	
TOTAL EXPENDITURE	13 764	

The total budget for 1969 has been fixed at US $\$ 3 644 000 detailed as follows:

Budget Items Amounts in 1000 US \$	Budget 1969
I. Capital Expenditure	
A. Land, Buildings, Roads	1 117
B. Instruments	570
C. Consulting Engineers and Architects	91
TOTAL CAPITAL EXPENDITURE	1 778
II. General and Overhead Expenses	1 546
III. Astronomical and Meteorological Activity, South Africa	
IV. Astronomical and Meteorological Activity, Chile	180
V. Maintenance Roads, Buildings, Installations and Instruments Unforeseen	s 100 40
TOTAL BUDGET 1969	3 644

Hamburg-Bergedorf, March 1969

O. Heckmann

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I. APPENDICES

1. Members of the ESO Council during 1968 Belgium: A. G. Velqhe M. Deloz Denmark: A. Reiz O. Obling France: Ch. Fehrenbach R. Poussard Federal Republic of Germany: H. H. Voigt K. F. Scheidemann The Netherlands: J. H. Oort J. H. Bannier Sweden: C. Schalén G. Funke (President) .

M e e t i n g s : 2 and 3 July 1968 in Brussels. 3 and 4 December 1968 in Hamburg.

2. Members of the ESO Committees and Working Groups as at 31 December 1968 ESO Einance Committee

M. Deloz
O. Obling
J. Bourreau
W. Paulig
J. H. Bannier (Chairman)
B. Samuelsson

ESO Instrumentation Committee

Belgium:	R. Coutrez
-	M. V. Migeotte
	L. Neven
Denmark:	B. Strömgren
	A. Reiz (as from 4 December)
France:	A. Couder
	G. Courtès
	Ch. Fehrenbach (Chairman)
Federal Republic of Germany:	A. Behr
	K. Bahner (as from 3 July)
The Netherlands:	Th. Walraven

A. Wallenquist

Sweden:

M e e t i n g s : 4 and 5 July 1968 in Hamburg. 5 and 6 November 1968 in Hamburg.

ESO Sub-Committee for Spectrographs

Belgium:	M. V. Migeotte
France:	R. Bouigue M. Bretz Ch. Fehrenbach (Chairman)
Federal Republic of Germany:	K. Bahner (as from 3 July) H. H. Voigt (until 3 July) P. Wellmann
The Netherlands:	A, B. Underhill
Sweden:	B. Edlén (Consultant) Y. Ohman (Consultant)
U. S. A.:	I. S. Bowen (Consultant)
Meetings:	

Meetings: 16 and 17 January 1968 in Paris. 5 July 1968 in Hamburg. 6 November 1968 in Hamburg.

ESO Working Group for Buildings

Belgium:	J. Dommanget
Denmark:	A. Reiz
France:	P. Lacroute
Federal Republic of Germany:	O. Heckmann (Chairman)
The Netherlands:	A. Blaauw
Sweden:	E. B. Holmberg

ESO Scientific Programs Committee

Belgium:	P. Swings	P. Ledoux
Denmark:	B. Strömgren (Chairman)	A. Reiz
France:	J. Delhaye	J. Lequeux
Federal Republic of Germany:	G. Traving	B. Baschek
The Netherlands:	Th. Walraven	J. Borgman
Sweden:	E. B. Holmberg	A. Elvius
Meetings: 2 May 1968 in Hamburg. 17 October 1968 in Hamburg.		

Substitute

ESO Working Group for Publication Matters

Belgium:	A. G. Velghe
France:	P. Lacroute
Federal Republic of Germany:	O. Heckmann (Chairman)
	H. H. Voigt
Sweden:	G. Funke

At the Council Meeting on 2 and 3 July 1968 in Brussels, the following Committees and Working Group were abolished:

ESO Working Group for Colloguia

ESO Committee for the Study of the Results of the Site Tests ESO Committee for the Photometer of the Photometric Telescope.

3. Employees on Contract with ESO as at 31 December 1968

Hamburg Office: O. H. L. Heckmann Director General J. M. Ramberg Technical Director A. Blaauw Scientific Director J. Bloemkolk Manager S. Laustsen (as from 1.9.1968) Astronomer J. Meuser Chief Purchasing and Shipping H. W. Marck Accountant B. Wächter Librarian E. Görner Secretary / Editorial Assistant G. A. M. Jacobse Secretary Chr. Sachs Secretary H. Geier (as from 1. 1. 1968) Secretary Chile: A. B. Muller Astronomer and Superintendent Fr. Dossin Astronomer E. Maurice Astronomer H. E. Schuster Assistant Astronomer F. Middelburg Night Assistant W. Steffelaar (1. 7. - 30. 11. 1968) Night Assistant **Electronics Engineer** M. Becker (as from 1. 4. 1968) W. Vanhauwaert (as from 1. 10. 1968) Precision Mechanic J. Doornenbal Precision Mechanic R. Holder (until 15. 4. 1968) Chief Engineer R. Villena Chief Engineer Maintenance Engineer P. Fjellerad (as from 1. 6. 1968) R. Plentl (until 31. 7. 1968) Administrator I (Santiago) H. Hyslop (as from 1. 6. 1968) Administrator I (Santiago) A. Siméon (as from 1. 4. 1968) Administrator II (La Silla) H. J. Straatman Assistant Administrator Chief Storekeeper / Transport A. Bosker J. Palisson (as from 1. 3. 1968) Office Clerk

France:

R. Clop (as from 1. 1. 1968)

Mechanical Engineer

4. Local Staff in Chile as at 31 December 1968

Astronomical Department

E. Brard M. E. Bustamante F. R. Cortez (until 30. 4. 1968) A. Cuthbert T. H. Giaconi L. (as from 1. 9. 1968) B. Melys R. S. Pozo P. G. Vargas R. T. Véliz (as from 1. 10. 1968) R. Vega T. Night Assistant Night Assistant Secretary, La Silla Electronics Engineer Assistant Mechanic Night Assistant Night Assistant Assistant Mechanic Night Assistant

Technical Department

Maintenance ElectricityG. Díaz D.EleA. Hering F.AsP. Núñez A.MaMaintenance RoadMaintenance RoadM. Valenzuela F.OpA dministrationR. Julien U.R. Mondaca A.SeJ. Rodríguez L.Ch

Administration

Office Santiago

J. Briggs C. Euler I. Faúndez R. V. Navarrete C. J. Piatek Z. G. Pietropaolo M. C. Schlösser H.

Office La Serena

M. Schlichter R. M. Felis K. C. Herrera V. C. Smilovič S. A. Urquiza U. Electrician Operator Assistant Electrician Mechanic Power Station

Operator Bulldozer/Grader

Assistant to Engineer Secretary, La Silla Chief Maintenance Power Supply

Purchaser / Import Secretary Assistant Bookkeeper / Radio Assistant Bookkeeper Driver Messenger Boy Secretary / Reception

Chief, Office La Serena Secretary Assistant Bookkeeper Purchaser Payroll-Clerk

Camp La Silla F. Gómez C. **Radio-Operator Camp** Pelícano S. Lazo Waiter Transport A. Anais M. Driver movable crane J. Díaz G. Driver H. Flores M. Driver J. González T. Assistant Mechanic A. González T. Driver P. Marín F. Driver A. Montalván C. Assistant Mechanic N. Navea Z. Driver J. Ponce F. Driver Driver

L. Ramos A. O. Rozas A. E. Sanguinetti P. L. Silva T.

Stores

S. Baquedano P.Store Clerk PelícanoE. Figueroa G.Store Clerk PelícanoT. Nettle A.Import Clerk Pelícano

Guesthouse Santiago

G. Labarca de Suter

Supervisor

Assistant Mechanic

Driver

Mechanic

5. Monthly paid Labourers in Chile as at 31 December 1968

Astronomical Department	1
Maintenance Buildings etc.	12
Maintenance Electrical Installations	8
Maintenance Roads	4
Office Santiago	2
Office La Serena	3
Hotel and Administration La Silla	10
Camp Pelícano	12
Transport	3
Stores	2
Guesthouse Santiago	4
Total Labourers	61
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Fig. 1: 1 m Photometric Telescope.



Fig. 2: 1.52 m Spectrographic Telescope.

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Fig. 3: Cassegrain Spectrograph attached to 1.52 m Telescope.



Fig. 4: Building and Dome of Bochum 60 cm Photometric Telescope.



Fig. 5: Hostel La Silla from N.



Fig. 6: Hostel La Silla, view through patio into restaurant.



Fig. 7: Headquarters Building Santiago-Vitacura, view from SE.



Fig. 8: Headquarters Building, view from NE.



Fig. 9: Headquarters Building, central corridor.



Fig. 10: Mechanical Laboratory Vitacura.

A D D R E S S E S

ESO	Directorate	131 Bergedorfer Straße, 205 Hamburg 80, West Germany, Tel.: 7 21 30 01.
ESO	Administration Santiago	Alonso de Córdoba 3107, Vitacura. Casilla 11 P — Correo 11. Santiago de Chile. Tel.: 28 50 06.
ESO	Guesthouse	Gustavo Adolfo 4634, Santiago de Chile. Tel.: 48 42 54.
ESO	Sub-Administration La Serena	Casilla 27 D. Balmaceda 595, La Serena, Chile. Tel.: 11 67, 11 77.