Polishing of VLT Mirrors: ESO and R.E.O.S.C. Sign Contract

The European Southern Observatory and R.E.O.S.C. Optique (Recherches et études d'optique et de sciences connexes), located at Ballainvilliers near Paris, France, have reached agreement on a contract for the polishing of four giant mirror blanks for the ESO Very Large Telescope (VLT).

This contract was signed on July 25, 1989, at the ESO Headquarters by Professor Harry van der Laan, Director General of ESO, and Mr. Dominique Ruffi de Ponteves, Chairman and General Manager of R.E.O.S.C. In short speeches, both parties expressed satisfaction about the conclusion of this important contract.

The photo shows Mr. D. Ruffi de Ponteves (centre), Dr. D. Enard (ESO, right of centre) and the ESO Director General (right), at the cocktail after the signing ceremony.

The four blanks will be made at Schott Glaswerke, Mainz, F.R. Germany; cf. *Messenger* **53,** page 2. They will be the largest ever produced and will be made of Zerodur, a glass ceramic material. Each will have a diameter of 8.2 metres, an area of more than 50 square metres and thickness of only 17.5 centimetres.

The first blank is expected to be ready in 1993 and will then be transported from Schott to R.E.O.S.C. by road and water in a specially constructed case.

At R.E.O.S.C., it will first be coarsely figured on a giant grinding machine. When the surface of the mirror approaches the desired form, the mirror will be transferred to a second machine with which the final, highly delicate polishing will be performed. Both of these very complex machines will be constructed on the R.E.O.S.C. premises during the next years.

After thorough testing, the mirror will be packed for transport to the VLT observatory in Chile. It is expected to arrive there in 1995, soon after completion of the mechanical structure of the first of the VLT's four unit telescopes.

The polishing schedule of the other three mirrors aims at delivery in Chile at one-year intervals, i.e. in 1996, 1997 and 1998, so that the entire VLT array of four telescopes can be assembled in 1998.

When ready, the VLT mirrors will have the best possible figure of all large ground-based telescopes. The optical performance will rival that of the recently installed ESO New Technology Telescope (NTT).

As is the case for the NTT, the optimal shape of the large and flexible VLT mirrors will be ensured by "active optics". In the VLT system about 200 computer-controlled precision actuators will support each of the 8-m mirrors.

R.E.O.S.C. and ESO have collaborated on earlier projects. In 1975, this firm successfully polished the large fused-silica mirror for the ESO 3.6-m telescope that entered into operation the following year. With its excellent optical quality, this "classical" 3.6-m telescope has since been a rich source of important observational data for European astronomers.

R.E.O.S.C. has also polished a very thin 1-metre mirror (thickness 18 mm) of Zerodur for ESO. It was used at the ESO Headquarters in the prototype "active optics" system on which the highly successful New Technology Telescope is based.

The decision to entrust R.E.O.S.C. with this important task is a key event in the VLT project. It also means that this enormous project, a flagship of European science and technology and soon to become the largest optical telescope in the world, is keeping to its original time schedule.

From ESO Press Release 5/89

STAFF MOVEMENTS

Arrivals

Europe:

ANDREANI, Paola (I), Associate

DOBBELS, Geert (B), Remote Control Operator

FAUCHERRE, Michel (F), Experimental Physicist/Astrophysicist

HALD, Birgit (DK), Secretary/Administrative Assistant

HINTERSCHUSTER, Renate (D), Designer/Draughtswoman (Mech.)

HOPPE, Elisabeth (D), Typist/Secretarial Assistant

LAGRANGE-HENRI, Anne-Marie (F), Fellow

ORIGLIA, Livia (I), Associate

PALMA, Francesco (I), Procurement Officer

Chile:

ANCIAUX, Michel (B), Telescope Control Engineer

DUBATH, Pierre (CH), Student

Departures

Europe:

BERNOTAT, Petra (D), Secretary

ELLES, Daniel (F), Procurement Officer

FRANÇOIS, Patrick (F), Fellow

JOHANSSON, Lennart (S), Fellow

LAUBERTS, Andris (S), Associate

MEURS, Evert (NL), Fellow

MORGANTI, Raffaella (I), Fellow

TSVETANOV, Zlatan (BG), Associate

Chile:

DUGUET, Bernard (F), Administrator

PEDERSEN, Holger (DK), Astronomer