

viding the team with some days for rest and sightseeing. In addition to the gathering of an impressive amount of data (20 balloons were launched successfully), it was an opportunity to compare the new differential motion monitor of the Instituto de Astrofísica de las Canarias to the ESO DIMM. During this period also took place the first operational run of the new ESO Differential Motion and Coherence Monitor, a wonderful opportunity for calibrating this modified DIMM, able to deliver not only the seeing but also the temporal characteristics of the wavefront⁶. These parameters are awaited by the VLT planners in need of statistics for better designing the time sensitive VLT subsystems.

The more we improve our knowledge of the environmental conditions of the VLT Observatory, the more efficient is the operation of the telescope. Astro-Climatology is a tool to be used for

telescope control as well as for flexible scheduling, i.e.: for optimally tuning the observation to the observing conditions. The PARSCA campaign brought a useful contribution to this task.

Acknowledgements

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New R.E.O.S.C. Polishing Facility for Giant Mirrors Inaugurated

On April 24, 1992, the French Minister for Research and Space, Professor Hubert Curien, inaugurated a unique, new optical facility of R.E.O.S.C., at Saint Pierre du Perray, near Paris. The delicate polishing of the giant mirrors for ESO's 16-metre equivalent Very Large Telescope (VLT) will take place here.

The festive act took place in the presence of about 300 invited guests, who were seated in the cavernous hall of the new building, just in front of the two polishing tables. They came from all over France and also from the neighbouring countries as representatives of European Science and Technology. The event also drew a lot of media attention and most of the French TV channels were represented. (The ESO video team obtained extensive material to document the VLT Tale.)

Following an introductory speech by the ESO Director General, Professor Harry van der Laan, in which he praised the very good cooperation between ESO and R.E.O.S.C., Dr. Daniel Enard from ESO spoke about the history of the VLT project, underlining the need to equip the world's largest telescope with optically perfect mirrors. M. Jean Espiard, Deputy General Manager of R.E.O.S.C. and formerly involved in the polishing of the main mirror for ESO's 3.6-m in the early 1970's, then presented the intricacies of the new factory, whose combination of size and incred-

ible precision did not fail to impress the audience.

After a few further, short interventions by local officials, Professor Curien expressed a great satisfaction to see the new facility ready and he warmly congratulated R.E.O.S.C. and the planning staff to this most significant achieve-

ment. He mentioned the great optical traditions in France and that there are all chances that the VLT project will be achieved in the best possible way so as to become the world's first telescope at the end of the present decade. The Minister then unveiled a plaque commemorating the inauguration.



Figure 1: Professor Hubert Curien (middle), French Minister for Technology and Space, at the inauguration of the R.E.O.S.C. facility on April 24, 1992. To his left, M. Bujon de l'Etang, Chairman and General Manager of SFIM and to the right, M. Dominique de Ponteves, Chairman and General Manager of R.E.O.S.C.

Polishing the World's Largest Optical Mirrors

It was in the summer of 1989, that ESO and R.E.O.S.C. signed a contract concerning the polishing of the four 8.2-metre mirror blanks for the ESO 16-metre equivalent VLT. This included the design and construction by R.E.O.S.C. of a completely new polishing facility, which would be able to handle this technically very demanding task.

In less than three years, the new 32-metre tall, 1100 m² R.E.O.S.C. optical laboratory was constructed and has also been equipped with the most modern, computer-controlled machines. One of these will perform the rough polishing. Another will give the four enormous mirrors their final form and ensure that the 50-m² surfaces will be exceedingly smooth, with residuals at the 5-nm level.

In order to carry out the corresponding tests, R.E.O.S.C. has built a very elaborate 32-metre high tower, just above this machine. The tower is a double structure which will protect the measuring device from any adverse influences from the outside and keep them at a constant temperature and humidity. All of this is necessary to realize the full potential of the VLT, so that it will be able to produce the sharpest possible images and detect and observe fainter and more distant celestial objects than any other telescope.

Transporting 8.2-Metre Mirrors from Mainz to Paris

The ZERODUR mirror blanks will be delivered by SCHOTT Glaswerke (Mainz, Germany). The first blank, which is now undergoing the final treatment there, will be picked up and transported by R.E.O.S.C. in May 1993; the three others will follow soon thereafter. The mirror blanks will be transported from Mainz to Paris by barge, down the river Rhine, along the Channel coast and then up the river Seine to the town of Evry, near the R.E.O.S.C. VLT facility.

So if you happen to be in Paris in the late spring of 1993 and you see a heavily loaded barge carrying a 10×10 m² rather flat box, slowly passing the Eifel tower, you will now know what is inside!

The Editor

Figure 2: Professor Charles Fehrenbach (right), former Director of the Haute-Provence Observatory and Chairman of the ESO Instrumentation Committee, with Dr. Daniel Enard of ESO, in front of one of the large polishing tables.

Speech by the ESO Director General, Prof. H. van der Laan:

Monsieur le Ministre, Monsieur Bujon de l'Etang, Monsieur de Ponteves, Monsieur Espiard, Mesdames et Messieurs,

L'Observatoire Européen Austral (l'ESO) est une organisation créée pour rendre l'astronomie européenne plus intéressante, plus ambitieuse et plus compétitive. Maintenant dans sa trentième année, l'ESO a amplement démontré que la persévérance rapporte: il n'y a aucun doute que les premières années furent difficiles, les progrès trop lents à venir, et la qualité et la quantité de temps de télescope, par million de francs dépensé, décevantes. L'histoire de cette lutte est relatée dans les livres écrits par les leaders de la première génération, les Professeurs Fehrenbach et Blaauw. Mais les lecteurs du MESSENGER, le magazine trimestriel de l'ESO, savent bien combien l'allure et la vitesse ont changé, dans quelle mesure, on pourrait dire dramatique, optique, électronique, opto-mécanique et systèmes de contrôle, détecteurs et logiciels ont été intégrés afin de réaliser des performances encore inconnues il y a une décennie. Le Télescope à Nouvelle Technologie (le NTT) est la concrétisation de ce progrès, mais le télescope de trois mètres soixante partage une bonne part de ces innovations. Son grand miroir mais aussi ses miroirs secondaires et coudé furent polis par REOSC sous la direction de Monsieur Espiard, avec assez d'habileté artisanale et de précision pour maintenir le télescope à la tête du progrès pour des décennies.

L'ESO est au service de la communauté de recherche et pour accomplir ce devoir, l'organisation dépend de l'ingéniosité et de la persévérance innovative de l'industrie. REOSC, et avec elle une poignée d'entreprises européennes, a décidément participé aux progrès de l'ESO et a toujours répondu à ses aspirations. REOSC eut le courage d'accepter que ces attentes fussent changées en obligations contractuelles.

Aujourd'hui nous célébrons une pierre milliaire dans l'histoire commune de REOSC et de l'ESO, une borne milliaire aussi dans l'histoire du VLT, le grand télescope de l'Europe des prochains cinquante ans. Au nom de l'ESO, de notre personnel, de notre communauté d'utilisateurs je remercie l'équipe de REOSC pour la collaboration splendide et je vous félicite de cette installation essentielle pour atteindre notre but commun.

L'ESO et REOSC partagent trois lettres de nos noms acronymes. Mais REOSC en a deux de plus: le 'C' ce qui, je crois, représente la Créativité et le 'R' sans aucun doute désigne la Résolution. Que ces dénominations continuent d'être vos caractéristiques.

Je vous remercie de votre attention.

