



EL MENSAJERO



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A TIME FOR CHANGE

At its December meeting last year, I informed Council of my wish to terminate my appointment as Director General of ESO following the approval of the VLT proposal, expected later this year. Already at the time of my reappointment three years ago, Council was aware that I did not intend to serve out a full third five-year term, because of the desire to have more time for other activities. Now that the preparatory phase of the VLT has been completed with the formal presentation of the project to Council on 31 March and with approval likely before the end of the year, 1 January 1988 seems to be the optimal time for a change in the management of ESO.*

During the coming decade, the VLT project will profoundly affect all of ESO's activities as well as its interaction with the scientific community in the member countries. Not only is the VLT a large project in financial terms, but most ESO staff members will have to give it a large part of their time. The same is the case for many scientists and engineers in the member countries, since it is foreseen that much of the VLT instrumentation will be developed in the European laboratories.

While ESO will have to devote many of its resources to the VLT, at the same time other essential needs will present themselves: SEST is just beginning to function, the NTT is almost completed and needs to be fully instrumented, and hopefully the ECF will have the Space Telescope to worry about. All of this

opens up an era of great opportunity for European astronomers, but it will require a major effort to utilize the new instruments in an effective way while the construction of the VLT proceeds.

A particularly important aspect of this relates to the functioning of La Silla, which, of course, will have to remain a top priority. It is here, more than anywhere else, that the European astronomical community finds the fruits of the large investments that have been made.

Several years ago, we decided to see if sites could be found for the VLT with a quality still higher than that of La Silla, even though La Silla ranks among the best sites in the world. Subsequent studies have shown that Paranal has a substantially lower frequency of clouds and a very much lower humidity. Seeing

* On 4 June, Council unanimously appointed Prof. H. van der Laan to be Director General for a five-year period from 1 January 1988.



The road to Paranal (February 1987; photo: C. Madsen).

measurements are under way, and the first results, though as yet inconclusive, look promising. It therefore was decided that the VLT proposal should present Paranal as the more likely option, even though a definitive choice need not be made before three years from now.

Paranal is a remote place in one of the world's driest deserts. While a good gravel road passes close by, there is no village or anything within many kilometers. So the complete infrastructure will have to be built there by ESO. A development of Paranal along the lines of La Silla would be costly and time-consuming, but fortunately also not necessary.

Remote control is being used at La Silla on an experimental basis. For the VLT it will be the principal mode of use. Remote diagnostics and trouble shooting will undoubtedly follow. With such technologies, it would seem that the Paranal site may be run with a comparatively small number of highly qualified staff. Another factor which reinforces this conclusion is that the VLT – like the NTT – will be operated with very few instrument exchanges.

Suppose the VLT were placed at Paranal, what about the other ESO telescopes? With its 16-m equivalent diameter, the VLT would represent nearly 85% of the total photon collecting area of the ESO telescopes. It would seem hard to imagine that ESO would



Professor H. van der Laan, who will become Director General from January 1, 1988.

continue to operate another site at high cost for the remaining 15%. In the long run, there appears to be only one solution: if the VLT were to be placed at Paranal, all of ESO's telescopes would have to be operated there. This might involve the moving of some of the La Silla telescopes. Moving the 2.2 m, CAT, 1.5 m DK and SEST would not present major problems; the 3.6 m is too cumbersome to move, except perhaps as a "zenith telescope" for cosmological studies. What really would be useful to move more than a decade from now remains to be seen at that time.

The NTT poses a particular problem. Within a year, it will be ready for installation in Chile. If Paranal were ultimately to be chosen as the VLT site, would it not be more rational to place it there? While

the advantages of learning to operate a modern telescope on Paranal before the arrival of the VLT would be important, there are serious problems with regard to the time scale; these are currently being analyzed. Should it appear that the Paranal location would cause undue delays, the NTT would still be placed at La Silla.

Astronomers have been accustomed to look at telescopes as instruments of almost eternal use. This was perhaps reasonable at a time in which maintenance needs were small and instrumentation relatively simple. At present, however, the annual costs of operating and instrumenting a modern telescope at a remote site and processing the resulting data far exceed the capital investment prorated over one or two decades. It follows that the acquisition of new telescopes must automatically be accompanied by the closing of existing ones.

The VLT represents ESO's long range future. Without it the Organization could not survive very long. However, for more than a decade, La Silla will continue to provide the data essential for the scientific work of a large community. It is clear, therefore, that even if Paranal were to be developed, everything will have to be done to guarantee the continuation of the functioning of La Silla at its present high level of quality.

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The Swedish-ESO Submillimetre Telescope

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Introduction

Dramatic changes have taken place during the past two years at the southern end of the telescope ridge on La Silla and now, where once stood a meteorological station, stands a 15-m submillimetre telescope. The telescope, designed by IRAM engineers, has been built on behalf of the Swedish Natural Science Research Council (NFR) and ESO. It will be operated jointly by ESO and NFR (through the Onsala Space Observatory).

The Swedish-ESO Submillimetre Telescope, acronym SEST, while not actually breaking new ground at ESO, since some groups have already used the 3.6-m and other telescopes at submillimetre wavelengths, represents a

significant breakthrough as a dedicated sensitive millimetre-submillimetre instrument. It is the only telescope of its kind in the southern hemisphere and among the first such instruments in the world.

SEST will extend the observational part of the radio spectrum towards the infrared and will enable European astronomers to probe the molecular clouds of the southern Milky Way and other nearby galaxies, providing information on stellar evolution and galactic dynamics. It will enable them to investigate the radio continuum properties of the stars, HII regions and interstellar dust in this new wavelength region, and provide valuable new data on quasars and radio galaxies in the submillimetre wavelength regime. SEST may also be-

come an extension of the existing VLBI arrays for the study of the submilliarc-second properties of low declination radio sources.

Background

The idea of building an IRAM design telescope on La Silla was first conceived by the astronomers of IRAM and Onsala Space Observatory, and enthusiastically supported by ESO. The outcome of the subsequent negotiations between the parties and their funding agencies was an agreement between the Swedish Natural Sciences Research Council and ESO to install and operate the 15-m telescope on La Silla and share the expense and the observing time over a 15-year period. IRAM agreed to build the