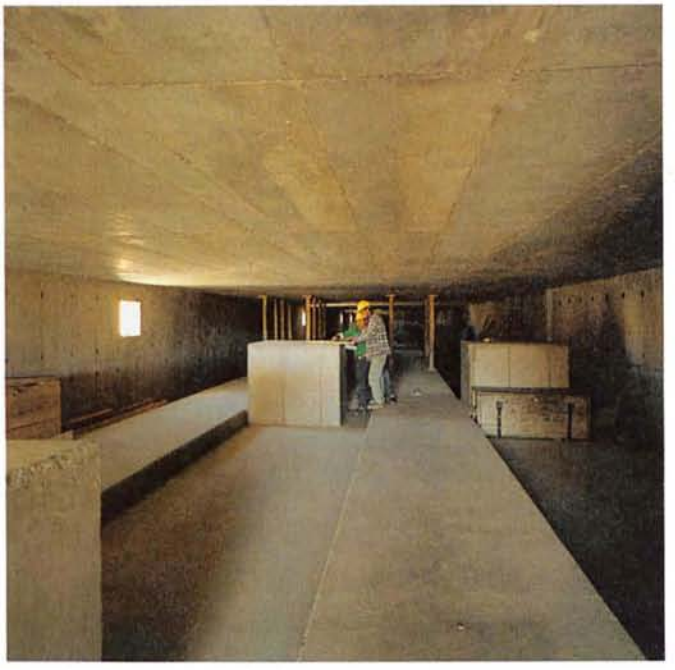

Figure 4: *The completed section of the delay line tunnel.*

Figure 5: *Inside the building of the first Unit Telescope.*

8 shipments with over 300 tons of material to the site to begin erection as soon as the importation and accreditation problems are solved. Work in Europe is proceeding as planned.

At the Paranal site, the work on the foundation for the first telescope is almost complete (Figs. 3, 4 and 5). The total site concrete work is 25% complete. Although significant problems with schedule have plagued this contract, we believe that the critical work for telescope No. 1 can be completed in May 1995 to allow the next contractor, SEBIS, to begin erection of the enclosure. It should be noted that the contractor has also been affected by the import problems.

One of the critical areas of the performance of the VLT and its scientific instruments is the CCD detectors. A new head of this group has been recruited. This group has been strengthened with additional manpower to ensure that this important area is properly covered. The new ESO CCD prototype system, ACE, has been tested on La Silla and is functioning well.

A number of management changes have also been implemented in the Programme. The VLT work was organised into work packages beginning in February 1994 with budget planning by work packages implemented with the 1995 budget. In January 1995, the accounting systems at ESO were modified to include cost collection by work package in addition to the traditional cost collection by nature of expense.

Another critical area was the system engineering. The vacancy of the head of the System Engineering Group has now been filled and the new head of system engineering brings in-depth telescope system experience to ESO and has now recruited personnel for the remaining open system engineering positions including the important area of configuration control.

Another positive development has been the selection of the VLT Programme Scientist which still has to be confirmed by Council. The VLT Programme Scientist will provide the nucleus for a small group of scientists to assist the VLT Programme in scientific issues. Also the new Project Scientist for the VLTI, F. Paresce, has begun work, adding senior scientific oversight to this important Programme area.

In February 1995, the third annual ESO Wide Review was held. In this Review, the work, schedule and cost for the year 1995 were reviewed. A key element of this Review was the introduction of clear quarterly progress milestones which form the basis for control by the upper management.

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Scientific Priorities for La Silla in the VLT Era

J. ANDERSEN, Chairman of the Working Group

In a previous article (*The Messenger*, No. 78, p. 3), the rationale behind the creation of the ESO Working Group (WG) on *Scientific Priorities for La Silla in the VLT Era* was outlined. At the same time, the WG solicited the views of the community on the main classes of science to be carried out from La Silla over the next five to ten years, and the facilities that will be needed to do so.

After analysing the replies, the WG has prepared a first draft plan to serve as a skeleton for the following discussions. We are grateful for the keen interest of the community and would like to present below a brief status report on our work and the plans for its completion.

The Questionnaire Survey

Nearly 150 replies were received by mid-February, a quite respectable turnout. While any such survey will inevitably be both incomplete and biased for a number of reasons, and cannot be an exact measure of the community's plans and wishes, this material is an invaluable

guide for our work. Also, several thoughtful and pertinent comments were made on a variety of individual topics.

Some main trends are already clear from the answers:

• Strong demand for wide-field imaging (> 1°), visible and IR.

• Strong emphasis on survey-type work, both stand-alone and in preparation for VLT projects.

• Much demand for moderate- and high-resolution spectroscopy in the visible, moderate resolution in the IR. Strong interest in a wide-field, multi-object spectrograph (MOS) with > 400–500 fibers.

• Demand for long-term monitoring of variable sources, with requests to keep a photometric telescope on La Silla (some for polarimetry as well). Accurate standard stars for the VLT must be established.

• The role of La Silla in hands-on training of young astronomers is seen as very valuable, but second in priority to excellent science.

• Users are emphatic that La Silla must remain internationally competitive; small and medium-class telescopes continue to have valid and valuable roles to play.

General Policy Considerations

In trying to chart the course of La Silla into the future, we are guided by some of the landmarks previously set. Two of these are the report by the WG on *Scientific Priorities for the VLT Observatory* (1995) and that on *Scientific Priorities for La Silla Operations* (see *The Messenger* No. 74, p. 29, 1993). We must now carry the 1993 plans forward in mesh with the VLT project, guiding La Silla to a steady-state situation after the year 2000.

Some of the basic premises for the preparation of such plans are:

• The timetable of changes is driven primarily by the schedule of the VLT and its instrumentation.

• If preparatory work is required for VLT projects, the corresponding instrumentation on La Silla must be available in time.

• The VLT will completely outclass some current La Silla facilities. Yet, high-priority projects must be done on La Silla in the interim.

• New initiatives must be focused on the larger telescopes, which are both the main VLT partners and the most labour-intensive to run. For the smaller telescopes (< 1 m), the 1993 recommendations remain in force unless otherwise stated.

• At all times, facilities must be planned to achieve maximum operational simplification; this implies single-configuration telescopes and block scheduling of instruments as far as possible.

• The true financial impact of the proposed measures is not primarily in the direct costs, but in paving the way for a more cost-effective organisation of La Silla as a whole.

Draft Recommendations of the WG

A first rough timetable and list of actions was distributed to the Users Committee and STC in late April. It will no doubt undergo many revisions before a final version is reached, but some of its current main elements are the following:

• A careful tradeoff study of mirror size, image quality, and ease of operation is needed to define the future home of wide-field optical imaging on La Silla. Results so far indicate that the 3.6-m is unlikely to become a competitive facility.

• Wide-field imaging and medium/low-resolution spectroscopy in the near IR will remain vital. The proposed NTT instrument SOFI will cover these needs in a very cost-effective way, and the WG recommends that it be built.

• Until VLT+VISIR take over, TIMMI should be upgraded with a larger array, even temporarily, especially for ISO follow-up work.

• ADONIS should stay on the 3.6-m until CONICA + adaptive optics enter operation on the VLT.

• MEFOS and OPTOPUS lag behind contemporary efficiency by large factors and should both be retired. Competitive successors cannot be completed early enough, and time exchange agreements should be explored instead.

• A higher spectral-resolution option and efficient fiber link to the 3.6-m are essential for the long-term competitiveness of the CES.

Towards a Final Plan

The draft was discussed at length at the UC and STC meetings in May. There was a gratifying measure of support in both committees for the overall strategy of the draft as well as most individual proposals. The natural wish of users to maintain La Silla instruments in top shape until their VLT successors are in stable operation was stressed by both. The educational role of La Silla, defined as student training, met with some skepticism. The important issue is, however, the experience of those scientists who, 20 years from now, will teach a new generation of students. Hence, additional suggestions and comments will be solicited in the next version of the report.

After further discussion in the community, the WG plans to meet the UC, STC, and OPC together for a final review and refinement of the plan, and its financial implications will have consequences in the 1996 budget. Final presentation to the DG and Council follows after the November STC meeting.

In order to facilitate community access, later drafts of the report may also become available on the WWW.

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Is the Seeing Situation at the 3.6-m Telescope Irreversible?

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1. Introduction

Image quality (IQ), or the sharpness of the point spread function (PSF) at a 3.6-m instrument focus, should not fall below one arcsec (″) FWHM when external conditions are excellent, and is worse than 1.15″ FWHM most of the time (see Fig. 1). Images are hardly ever as sharp as at the NTT, the 2.2-m or the seeing monitor. This situation could be improved, and we are convinced now that in one year's time it would be possible to obtain 0.8″ FWHM long exposures with EFOSC1 routinely. This would however require a large effort during that period.

Poor IQ at the 3.6-m is not due to the site itself or to the quality of the optics (≈ 0.45″ FWHM), but rather to "mirror seeing" and to the presence of the dome. The dome is so large (30 m diameter) that residual sources of heat produce internal thermal gradients which cannot be eliminated by using the wind or any forced dome ventilation from outside, just because the dome cannot be opened sufficiently – unlike the NTT dome. Besides, obtaining thermal equilibrium with the outside all the time by means of cooling and ventilation is not realistic,