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Please pay particular attention to the article on page 3: **"Science on La Silla in the VLT Era"** and to the **"Questionnaire to the ESO Community"** which is distributed with this issue of *The Messenger*

Current Status of ESO

Speech to the Staff at the ESO Garching Headquarters on December 6, 1994

R. GIACCONI, Director General of ESO

The past year saw a number of important developments in and around ESO. Considering all of these together makes me feel confident about the future of this organization and our ability to successfully complete the current major task, the VLT project.

I here summarize the most important issues. It is obvious that with ESO's many simultaneous and quite diverse undertakings, we are stronger in certain areas than in others. While we have done quite well in some, we must try to improve our performance in others.

1. Visiting Committee Report

Until recently, ESO was unique among large astronomy organizations in not having a "Visiting Committee" to evaluate its scientific and technological performance. Immediately after I came to ESO, I therefore established such a Committee with the following distinguished astronomers as members: A. Boksenberg (Royal Observatories, UK), C. Fransson (Stockholm Observatory, Sweden), K. Freeman (Mt. Stromlo and Siding Spring Observatory, Australia), J. Geiss (Universität Bern, Switzerland), J. Huchra (Harvard Smithsonian Center for Astrophysics, USA), R. Kudritzki (Universitäts-Sternwarte München, Germany), G. Miley (Sterrewacht Leiden, The Netherlands; Chair), G. Monnet (Observatoire de Lyon, France).

Following intense work that included visits to ESO's installations in Europe and Chile and discussions with many staff members, the ESO Visiting Committee has now delivered its preliminary report about the scientific side of ESO. Without going into its many detailed observations and recommendations, it is satisfying to note that it agrees very well with our perceived mission of ESO. Together with the Audit report about the more programmatic side, earlier released by the Team headed by N. Lund, they form an important basis of understanding ESO's strengths and weaknesses and provide us with a clear road map to improvement.

In particular, the report of the Visiting Committee states that *ESO should provide facilities which will enable European astronomers to carry out outstanding science that can better be done in a global European context than nationally* and that the paramount criterion in determining relative priorities should be that of *scientific excellence*. The Committee finds that several aspects of ESO have been more responsive to scientific priorities in the recent years.

The report furthermore notes that there is a severe shortage of staff both in Garching and at La Silla. An important part concentrates on the ESO staff astronomers, their functional duties and research programmes; without good astronomers it will be impossible to carry through ESO's very diverse services to the scientific communities in the member countries.

The Visiting Committee also discusses many aspects of the VLT project. It is of the opinion, and I fully concur, that a better and clearer tie-in between the VLT project and the scientific requirements is needed for the future. I certainly intend to pursue this goal with great zeal. It also stresses that the number of instruments currently being constructed is insufficient to exploit the VLT adequately.

The Committee attaches great importance to the interferometric capabilities of the VLT and states that *failure to implement the VLTI will diminish the effectiveness of the VLT investment for European science*. Finally, the La Silla Observatory receives considerable attention in the report. While the Committee is generally impressed by the quality and management of the observatory, it does comment on certain shortcomings and makes a number of suggestions for changes.

The work of the Visiting Committee has been extremely useful and this type of survey of ESO will from now on become a permanent feature to be repeated every two years. I moreover intend to stay in contact with the members of the Visiting Committee and to ask for their advice on important matters, for instance in connection with appointments of new staff in senior positions. It is very obvious that ESO needs the best astronomers and that we must take immediate steps to work towards better interaction between our geographically separate locations: in the future, ESO should become *one observatory with two observing sites*. I will mention other actions in response to this report later in this talk.

2. Chile

You are all aware that the future relations between the Republic of Chile and ESO are being discussed at this moment, most notably during the negotiations that will eventually lead to an Interpretative, Supplementary and Amending Agreement between the two.

The main points are concerned with the granting of guaranteed observing time to scientifically meritorious observing programmes proposed by Chilean astronomers, many of which will be in collaboration with astronomers from the ESO member countries, as well as incorporation of elements of Chilean labour legislation into ESO Rules and Regulations for Local Staff.

There is no doubt that both ESO and Chile will gain from this new Agreement, once it has been ratified by the Chilean Parliament and the ESO Council.

3. Council Meeting

The ESO Council met during its regular winter meeting on November 30 and December 1, 1994. It took a number of decisions of importance for the organization and its staff.

In particular, it confirmed a 1995 budget for ESO at the level of 138 million DM and approved a planning budget for 1996–98 at 141 million DM (at 1995 cost). I note that this represents a 12 per cent increase in the ESO budget at a time when most research programmes in the member countries have difficulties; this ensures that steady progress will continue for the all-important VLT project. Still, Council also requested a 3 million DM reduction on the expenditure side for 1995 as compared to the already very tight proposal of the ESO Executive and it is now up to us to carry this out in the most efficient way. It will not be easy, but I am confident that with the active and positive involvement of all of you, it can be done in an efficient and sensible way.

Council also approved our proposal for staff salaries next year, as well as the current ESO plans for Rules on Transfer of Staff to Chile for the VLT Commissioning.

4. VLT Highlights

The VLT project has been progressing well during the past year. As a very visible demonstration of this, most of you have probably seen the two enormous scale models of the primary mirror cell, now on display in the tent outside the Headquarters building. They provide us with a dramatic impression of the real size of this enormous telescope.

We are at this moment proceeding with negotiations of the contract for this cell, and it appears that, despite some delays with the contract for the secondary mirror, first light of the first unit VLT telescope will only be delayed by a few months. It is now expected to happen at the end of 1997, possibly at the beginning of 1998.

The civil engineering work at Paranal is proceeding at very high speed. There are now twice as many people on the mountain as originally foreseen, working shifts around the clock.

The importance we attach to keeping open the interferometric option for the VLT is underlined by the recent appointment of F. Paresce as VLTI project scientist. There will be a VLTI Symposium in the spring of 1995 and the continued drive towards membership of Australia will have a major impact on this area of the VLT project.

A VLT System Group headed by T. Andersen is being created and we have produced an end-to-end VLT model.

The VLT instrumentation is on schedule and a new Instrumentation Division has been created with G. Monnet as Head. J. Beletic has been appointed Head of a new CCD Group which will help ESO to catch up in this very important field.

We will get an overview of the future needs for VLT instrumentation when the Vigroux Committee delivers its report at the extraordinary STC Meeting in February 1995. Another Working Group has been set up that will take a close look at which telescopes and instruments will be needed at La Silla in the year 2000. I expect that in close conformity with the main goals of ESO, this organization will then only be responsible for some major instruments there which could not easily be run by individual countries.

One of the major issues now facing us is the elaboration of a Chile Operations Plan which ensures that ESO's future facilities in that country can be optimally exploited in the new century. A provisional document was prepared by D. Baade and J. Crocker. It was presented at the recent meetings of STC and Council, both of which expressed agreement to the general ideas. The plan shows that it will in principle be possible to bring down the costs of operating the VLT, as compared to earlier estimates. The important aspect is that by building all the right features into the operation from the very beginning, there will be no need to make expensive adjustments afterwards.

It is the overall aim to ensure that the best possible science will be done with the VLT. The plan therefore foresees that ESO will become responsible for the scientific quality of the observations, that is, by putting a lot of emphasis on calibration and monitoring and improvement of instrumental performance. This can be done with less staff than originally foreseen and with a significant amount of service observing as the central feature.

I take great personal interest in these matters and look forward to learn the experience with the NTT during the next years when parts of the concepts for the VLT will be tried out.

Also in this connection, we are now taking the necessary steps to set up a VLT Assembly-Verification-Integration (AVI) group.

5. Scientific Activities

J. Bergeron was appointed Associate Director for Science. Regular Faculty Meetings are now taking place with the participation of ESO senior scientific staff. At the same time, the new internal Scientific Policy Committee (SPC) has worked very successfully.

There have been a number of scientific meetings during the past year, including the very successful Workshops on the Use of the VLT in June and Quasar Absorption Lines in November. The comet impact on Jupiter in July provided ESO with an opportunity to interact in a very

positive way with the media and the public. Educational issues were discussed during the joint EU/ESO Workshop on Teaching of Astronomy in Europe's Secondary Schools.

In Chile, the ESO staff astronomers were re-located to the Vitacura office in Santiago. From now on they will work here when they are not at La Silla. This will probably also result in better contacts with their Chilean colleagues.

6. Administrative Matters

Mr. W. Buschmeier took over as Head of Administration and among many other tasks is responsible for the implementation of the Work Package Structure (WPS); the Management Information System (MIS) is still to come. These changes must be accompanied by a very careful scrutiny of the way ESO spends its money. Although the budget of our organization may seem large, we also have many tasks to carry out. We must set strict priorities and avoid all unnecessary expenses.

7. Basic Themes for 1995

Finally, I state here some of the basic themes for 1995:

- Excellence in science
- Scientific priorities in VLTI, VLT and La Silla operations
- Scientific methodology
- VLT Execution
- VLTI Design and Planning
- La Silla reduction in quantity and improvement in quality
- Shift from development to operations
- Improvement in efficiency
- Better fiscal and management control

We want ESO to be one of the best observatories in the world, if possible the best one. This can be done, but it will not be easy! Let us work together towards this common goal!

Science on La Silla in the VLT Era

J. ANDERSEN, Chairman, ESO-STC

Over the next 6–8 years, the VLT will enter full operation on Paranal. Construction is going ahead full blast on all telescopes and the instruments for UT1 and 2, while instrumentation plans for UT 3–4 are in the definition phase. The recent ESO Workshop on "Science with the VLT" was one of the ways in which ESO is involving its user community in the process of defining the final VLT instrumentation programme.

In the VLT era, the functions and boundary conditions of the La Silla observatory will no doubt see drastic changes, for two main reasons:

1. Many of the highest priority scientific programmes will move to the VLT. Experience shows that new tasks for medium-size telescopes will also appear.

2. In making large investments in our unique new research tool in times of financial hardship, our governments expect, in return, that we trim all ESO operations and optimize the scientific output of our resources.

The VLT project is proceeding vigorously on a credible schedule. Modern management tools are going into place which will allow rational cost/benefit analyses. Thus the time is ripe to prepare specific plans for the long-term future of La Silla.

A New Working Group

The Director General has appointed a small Working Group to address the title subject of this article. Its task is to propose a long-term plan for the equipment and operation of La Silla, consistent with the scientific priorities of the community and with the available resources.

Members of the Working Group are, from ESO: Jacqueline Bergeron, Associate Director for Science; Jim Crocker, Head of Programme Office; and Jorge Melnick, Head of Operations, La Silla; from the Users Committee: Michel Dennefeld and Hans Schild; and from the STC: Johannes Andersen (Chair) and Sergio Ortolani. The Working Group may co-opt additional members later, but stresses from the outset that one of its most important tasks is to organize the widest possible consultation with the ESO user community.

The first full-day formal meeting was held on October 27. The Working Group set up a schedule for its work, defined its strategy for consulting the community, and identified and structured the main questions to address. Some first recommendations will be needed for the 1996 budget proposal.

A Call to the Community

Clearly, no credible planning can start before the scientific plans and priorities of the user community are known. Hence, the first action of the Working Group is to issue a call to the community for advice, direction and help in our further work, through this article and accompanying questionnaire (also distributed directly by mail).

To avoid misunderstanding we emphasize that, at this time, there is no a priori limit on the number, size or instrumentation of ESO telescopes to be operated on La Silla in the future, nor on the operational costs.

Clearly, the final plan must conform to the realities of our limited resources, but no idea or suggestion should be withheld at this time because rumours suggest that some specific cut has *de facto* been decided already: it has not.

The Key Questions

In order to facilitate a structured discussion, the Working Group has defined a few main programme categories within which needs can be assessed:

Stand-alone programmes for La Silla

Which programmes will continue to be done best (only?) from La Silla?

Preparations for VLT programmes

Which (new) programmes will be needed to prepare VLT projects?

Follow-up of VLT programmes

Which (new) programmes for La Silla will be generated by the VLT?

VLT programme off-loading

Which (new) programmes can be done most efficiently in tandem between the VLT and La Silla?

In all of these types of programme, your scientific needs will translate into requirements for La Silla and its instrumentation. Some of these derived questions are listed below; please consider them, but by no means feel limited to these topics:

- Scientific goals and requirements: Field, limiting magnitude, wavelength range. Are your needs met by present instruments? If not, what are the highest-priority future needs, taking into account facilities elsewhere?
- Wavelength coverage: Are there serious (if perhaps temporary) gaps in