Introduction to the ESO Annual Report 1998 by Prof. Riccardo Giacconi, Director General of ESO

1998 has been a banner year for ESO. Success has crowned the dedicated effort of the entire staff in a number of endeavours of the highest significance for European astronomy.

The First Light obtained on May 25 at UT1 (the first of the VLT 8-metre telescopes on Paranal to be completed) represents the culmination and validation of years of engineering and technical development of the active thin meniscus telescope mirrors pioneered by ESO. The stunning results obtained in the very first few weeks of commissioning show that the essential technical issues have been mastered and this fact has allowed us to proceed quickly to science verification and scientific use of the telescope by the community. This is a great achievement for European research and European industry.

1998 also saw the commissioning of the first two focal plane VLT instruments intended for scientific use. FORS and ISAAC made a very successful debut. The first is an imager and multi-object spectrometer provided by a consortium of German Astronomical Institutes (Heidelberg State Observatory and the University Observatories of Göttingen and Munich), the second an infrared imager spectrometer built at ESO, the only instrument of its kind in service at any large telescope in the world. The co-operation with the European research community, which has taken primary responsibility for 9 out of 11 VLT instruments, is proving to be an important element in fully utilising the best instrumentation talents in Europe. The combination of academic creativity and ESO quality control seems to provide a good assurance of success of frontline instruments built at reasonable costs.

The development at ESO of advanced detectors for the optical and the infrared has succeeded in producing systems that are world class. These systems are incorporated in almost all ESO's instruments. The instrumentation programme for second-generation instruments on the VLT is getting under way.

It is worth noting that the VLT programme has proceeded on schedule and within anticipated costs. We fully expect to complete it as planned.

The VLTI programme also saw very significant progress during the year. The construction of the delay lines, auxiliary telescopes and instruments for interferometry is well under way with first fringes expected in 2001.

Equally important for the European astronomical community are the achievements of the La Silla Observatory where the refurbishment and upgrading of all the telescopes is essentially complete. First Light was obtained with SOFI (an infrared imaging spectrometer similar to ISAAC) at the NTT, with FEROS (a broad-band spectrometer) at the 1.5-metre telescope and with the $8k \times 8k$ wide field camera at the 2.2-metre MPG/ESO telescope. La Silla has, in the past few years, increased substantially its effectiveness, modernised its facilities and become the most scientifically productive observatory in the world in terms of publications in refereed journals.

Using observations of distant supernovae obtained with La Silla telescopes, as well as other telescopes available to their colleagues at other institutions, ESO astronomers have actively contributed to the work of the international team that obtained the most startling discovery of 1998, namely that the expansion of the Universe is accelerating.

The ESO methodology for providing facilities to the astronomical community has shifted more and more toward an end-to-end science approach. Software tools are furnished for proposal preparation, observations planning, calibration, pipeline data processing and archiving for essentially all major ESO facilities. An important achievement of 1998 has been the realisation of the unified HST/VLT archive. Carried out as a collaboration between ESO and the ESA-ESO ECF, this development has resulted in a powerful and unique tool for astronomical research.

Finally the ESO Council and Executive have taken important steps in assuring the future of ESO contributions to European Astronomy. The Council unanimously endorsed the vision of ESO embodied in the Document "ESO's role in European Astronomy", which was published in *The Messenger* No. 91 of March 1998. The Council also approved the Executive's proposal for ESO involvement in the first phase of development of the LSA/MMA [now called ALMA, the editor] sub-millimetre wave array jointly with the USA. The LSA/MMA array will be the largest and most powerful submillimetre/millimetre-wave interferometer in the world, with the potential of unique and crucial contributions to the study of some of the astrophysical problems of greatest current interest.

A Memorandum of Understanding between ESO, PPARC, CNRS, MPG, NFRA/NOVA was signed on December 17, 1998. A European Co-ordinating Committee and a European Negotiating Team were created following the provision of this MoU enabling the European partnership to initiate detailed technical discussions and negotiations with NRAO, AUI and NSF. Joint discussions with Japanese astronomers are underway to extend this partnership to a worldwide project.

For a more distant future, the ESO-STC has endorsed the proposal for a study phase of the feasibility of a new 100-metre-diameter filled-aperture telescope that will represent the next step in ground-based optical astronomy. Technical and industrial studies are getting underway at the beginning of 1999.

These achievements are a matter of considerable pride for all of us at ESO. We recognise with gratitude the constant support of the ESO member state nations which made this possible.

Inauguration Ceremony of Paranal Observatory – 5 March 1999

Discourse of Prof. Riccardo Giacconi, Director General of ESO

President Frei, Minister Arellano, Ambassadors, Ministers, President of the ESO Council, Council members, Intendente of the II Region, Civilian and Military Authorities, Distinguished Guests, Ladies and Gentlemen,

It is a great joy for all of us at ESO to welcome you here for this ceremony which represents the culmination of years of effort to build what will be the largest array of optical telescopes in the world.

April 1st will see the start of the science operations with the first 8-metre telescope. During this last week, astronomers from all over the world have been discussing in Antofagasta the optimum scientific use of the very large telescope.

Tonight you will hear President Frei, and the President of the ESO Council, Mr. Grage, discuss the meaning they associate to this event, Prof. Carlo Rubbia will speak later of its meaning for science.

I will limit my remarks to the perspective of all of us at ESO, who have been