

UK Announces Intention to Join ESO

(Taken from ESO Press Release 23/00 – 22 November 2000)

Summary

On November 22, the Particle Physics and Astronomy Research Council (PPARC), the UK's strategic science investment agency, announced that the government of the United Kingdom is making funds available that provide a baseline for this country to join the European Southern Observatory (ESO).

The ESO Director General, Dr. Catherine Cesarsky, and the ESO Community warmly welcome this move towards fuller integration in European astronomy. "With the UK as a potential member country of ESO, our joint opportunities for front-line research and technology will grow significantly", she said. "This announcement is a clear sign of confidence in ESO's abilities, most recently demonstrated with the construction and operation of the unique Very Large Telescope (VLT) on Paranal. Together we will look forward with confidence towards new, exciting projects in ground-based astronomy."

It was decided earlier this year to place the 4-m UK Visible and Infrared Survey Telescope (VISTA) at Paranal.

Following negotiations between ESO and PPARC, a detailed proposal for the associated UK/ESO Agreement with the various entry modalities will now be presented to the ESO Council for approval. Before this Agreement can enter into force, the ESO Convention and associated protocols must also be ratified by the UK Parliament.

Research and Key Technologies

According to the PPARC press release, increased funding for science,

announced by the UK government today, will enable UK astronomers to prepare for the next generation of telescopes and expand their current telescope portfolio through membership of the European Southern Observatory (ESO).

The uplift to its baseline budget will enable PPARC to enter into final negotiations for UK membership of ESO. This will ensure that UK astronomers, together with their colleagues in the ESO member states, are actively involved in global scale preparations for the next generation of astronomy facilities. Among these are ALMA (Atacama Large Millimeter Array) in Chile and the very large optical/infrared telescopes now undergoing conceptual studies.

ESO membership will give UK astronomers access to the suite of four world-class 8.2-metre VLT Unit Telescopes at the Paranal Observatory, as well as other state-of-the-art facilities at ESO's other observatory at La Silla. Through PPARC the UK already participates in joint collaborative European science programmes such as CERN and the European Space Agency (ESA), which have already proved their value on the world scale. Joining ESO will consolidate this policy, strengthen ESO and enhance the future vigour of European astronomy.

Statements

Commenting on the funding announcement, Prof. Ian Halliday, PPARC's Chief Executive Officer, said that "this new funding will ensure our physicists and astronomers remain at the forefront of international research – leading

in discoveries that push back the frontiers of knowledge – and the UK economy will also benefit through the provision of highly trained people and the resulting advances in IT and commercial spin-offs".

Prof. Mike Edmunds, UCW Cardiff, and Chairman of the UK Astronomy Review Panel which recently set out a programme of opportunities and priorities for the next 10 to 20 years added that "this is excellent news for UK science and lays the foundation for cutting-edge research over the next ten years. British astronomers will be delighted by the Government's rapid and positive response to their case".

Speaking on behalf of the ESO Organisation and the community of more than 2500 astronomers in the ESO member states, the ESO Director General, Dr. Catherine Cesarsky, declared: "When ESO was created in 1962, the UK decided not to join, because of access to other facilities in the Southern Hemisphere. But now ESO has developed into one of the world's main astronomical organisations, with top technology and operating the VLT at Paranal, the largest and most efficient optical/infrared telescope facility in the world. We look forward to receiving our UK colleagues in our midst and work together on the realization of future cutting-edge projects."

Joining ESO was considered a top priority for UK astronomy following a community report to the UK Long Term Science Review, which set out a programme of opportunities and priorities for PPARC science over the next 10 to 20 years. The report is available on the web at URL: www.pparc.ac.uk/ltsr.

The VLT Weighs the Invisible Matter in the Universe

SHAPES AND ORIENTATIONS OF 76,000 DISTANT GALAXIES

(Taken from ESO Press Release 24/00 – 1 December 2000)

Summary

An international team of astronomers¹ has succeeded in mapping the

"dark" (invisible) matter in the Universe, as seen in 50 different directions from the Earth. They find that, within the uncertainty, it is unlikely that mass alone

would stop the current expansion of the Universe.

This fundamental result is based on the powerful, but challenging method of "cosmic shear". It depends on very accurate measurements of the apparent, weak distortion and preferential orientation of images of distant galaxies. This effect is caused by deflection of the light from those galaxies by the

¹ The team consists of Yannick Mellier (Principal Investigator [PI], Institut d'Astrophysique de Paris [IAP] and Observatoire de Paris/DEMIRM [OP-DEMIRM], France); Ludovic van Waerbeke (co-PI, IAP); Roberto Maoli (IAP, OP-DEMIRM and University La Sapienza, Rome, Italy); Peter Schneider

(University of Bonn, Germany); Bhuvnesh Jain (John Hopkins University, Baltimore, USA); Francis Bernardeau (Service de Physique Theorique, C.E. de Saclay, France); Thomas Erben (Max-Planck-Institut für Astrophysik, Garching, Germany, IAP and OP-DEMIRM), and Bernard Fort (IAP).