

SKA: Italy and Australia agree to cooperate

In July 2009, Italy and Australia finalised a Memorandum of Understanding to cooperate in the implementation of a large scale radio telescope, the Square Kilometre Array (SKA). The agreement was signed in Rome, during the visit to Italy of the Australian Prime Minister Kevin Rudd, by the Italian Vice Minister for Economic Development, Hon. Adolfo Urso, and the Ambassador of Australia to Italy, H. E. Amanda Vanstone, formalising a Joint Statement of Intent signed in April during the visit of Undersecretary Urso to Australia.

The SKA is an ambitious and far reaching international project presently involving 19 countries in the construction of a large scale next generation radio telescope. The scientific aspects of this project hope to answer or provide a deep insight into some of the most fundamental questions of modern science, such as the origins and formation of our universe and whether life does indeed exist elsewhere beyond Earth. The sheer physical scale of SKA is truly impressive. When fully operational it will consist of thousands of radio antennas spread over a diameter of some thousands of kilometres. The effective collecting area of this vast array will be one square kilometre. An increase of a radio telescope's collecting area enhances its sensitivity and SKA is expected to increase the sensitivity over present day large telescopes by up to four orders of magnitude. This is the most striking attribute of the SKA telescope, apart from its very large physical dimensions.

It will be this enormous increase in sensitivity which will render SKA a truly unique astronomical instrument for the 21st century. The technological aspects of the project involve cutting edge and highly innovative developments in all aspects of electronic communications, information science as well as large and small scale engineering. As such it naturally provides a unique opportunity for close industrial participation and involvement at all levels. Competing bids for the eventual site location of SKA have been shortlisted to South Africa and Australia (which was recently joined by New Zealand), with a final decision expected on the winning bid in 2012. The projected cost of SKA is at the present time estimated at approximately \$2.5 billion.

In broad terms, the Memorandum between Italy and Australia allows for a bilateral collaboration leading up to the construction and initial operation of SKA. This collaboration builds on past strong and fruitful collaborations between Italy's INAF (Istituto Nazionale di Astrofisica-National Institute for Astrophysics) and Australia's CSIRO. One of the

first consequences is expected to be the realisation of a small scale SKA prototype whereby, on the Italian side, scientific and industrial partners such as INAF and Finmeccanica may be interested to participate in its development. The agreement also acknowledges that to implement the SKA project both parties are willing to work with all potential SKA partner countries and to address their particular scientific-industrial concerns.

Concerning Italian and Australian cooperation, the Memorandum specifically underscores that both countries seek to actively support cooperation between respective Government departments, universities, scientific and technological research centres, as well as industrial sectors deemed competent in the overall implementation of the SKA Project. On a practical level, the agreement envisages a Joint Working Group to fully implement the Memorandum.

The nomination of the Working Group is presently underway and will be composed of representatives from government, science institutions, and industries of both countries. Once the Working Group has been nominated, it can be expected to organise exchanges, briefings, visits, scientific and technical seminars, and any other such events which will actively promote bilateral collaboration in the SKA project.

The signing of this Memorandum is timely and significant. Italy and Australia already cooperate actively in science and technology and astronomy and space science are excellent examples of the core strategic priorities in the science and technology programs of both countries. The present Memorandum in the field of astronomy emphasises that links in other equally important and innovative sectors of science and technology that have not as of yet been sufficiently developed or identified for development should be fostered and appropriately nurtured.



Joining forces on SKA: Oz and NZ

Australia and New Zealand have agreed to join forces in a bid for the \$2.5 billion international **Square Kilometre Array (SKA)** project. It commits both countries to supporting SKA-related industry opportunities and promoting their industry capabilities internationally as part of this process.

Innovation Minister **Senator Kim Carr** says that New Zealand is crucial for a global collaboration through which SKA could reach its full potential. If successful, he says, SKA will significantly increase Australia's and New Zealand's scientific capabilities, with economic benefits and spinoffs in a number of areas including supercomputing, data transmission, renewable energy, and construction and manufacturing.

New Zealand's Economic Development Minister **Gerry Brownlee** says there could be two stations constructed in New Zealand with an array of radio telescopes.

Final decisions on the SKA, including the host site, are not expected until 2012, with construction likely to run for six to eight years. The project currently involves a total of 19 countries.

► **More information:** <http://minister.innovation.gov.au>

