



Rt Hon Helen Clark
Prime Minister of New Zealand



Hon Kevin Rudd
Prime Minister of Australia

Media Statement

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Support for Australasian science initiative

New Zealand will offer strong support for Australia's bid to host the world's largest radio telescope, the Square Kilometre Array (SKA), the Prime Minister Helen Clark announced today.

Prime Minister Rudd warmly welcomed New Zealand support in formal bilateral talks held in Auckland.

"This 21st century project would use our region's intellectual and data infrastructure resources to push the boundaries of scientific enquiry and exploration", Helen Clark said.

"Hosting the SKA would be a hugely exciting development for Australasia.

"Kevin Rudd and I agreed today to establish a joint officials group to look at how New Zealand can best participate in the design and establishment of a SKA hosted by Australia.

"This group will investigate the costs and benefits of New Zealand engaging in the SKA project. There are significant commercial and technology spin-offs from world-leading science projects. We need to investigate fully what opportunities the SKA could present for New Zealand infrastructure and high technology businesses so that we can take informed decisions on New Zealand's role," Helen Clark said.

The Square Kilometre Array or SKA is a "next generation" radio telescope, and would be more than 50 times more sensitive than any radio telescope currently built.

If Australasia wins the global bid to host the SKA, its centre would be in Western Australia. Observatory sites thousands of kilometres from the centre (the outer spirals), including potentially in New Zealand, would be linked by high speed data connectivity.

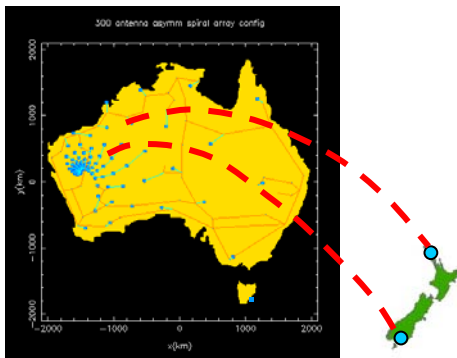
The hosting site for the SKA will be decided in 2011/12 by global scientists. Australasia's competitor to host the SKA is a coalition of six Southern African countries.

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MEDIA BACKGROUND

What is the SKA?

The Square Kilometre Array, commonly known as the SKA, is a global radio astronomy project being developed on an unprecedented scale. While a radio telescope usually consists of a single dish, the completed SKA will be a single radio telescope consisting of several thousand individual dishes, all linked together as a single instrument. This is possible by building several hundred clusters, each consisting of 50 to 100 individual dishes, spaced out over hundreds of kilometres. Each cluster will be linked together with cables enabling the high-speed sharing of data. The clusters of dishes will be arranged as a concentric spiral spreading outward, as in the diagram below. The completed SKA will have a collection area equivalent to one square kilometre.



What is Radio Astronomy?

Radio astronomy is a form of astronomy carried out with telescopes that examine the low-frequency radio waves emitted by distant objects, as opposed to optical telescopes, which examine visible light waves. A radio telescope usually consists of a large dish structure, which captures the incoming radio waves, which are then interpreted as computer data. A crucial advantage of radio astronomy over optical astronomy is that radio waves cannot be obscured by dust, unlike light waves.

Why will the SKA be spread over such a large area?

Increasing the collection area covered by a radio telescope greatly increases the sensitivity of the instrument, allowing very faint radio waves from distant objects to be received. Spreading the SKA over thousands of kilometres will allow the most distant of cosmic objects to be examined. Extending the telescope to include New Zealand would thus increase the capability of a SKA based in Australia.

What can the SKA do?

When completed, the SKA will be more than 50 times more sensitive than any other radio telescope currently available. The SKA will be able to investigate key questions in physics and cosmology. For example, the SKA will enable scientists to examine

the formation and evolution of stars and galaxies, including examining the early origins of the universe.

Who is building the SKA, and where?

The SKA is being developed by an international consortium of researchers, from 19 different countries around the world. The SKA is an initiative led by scientists, with increasing involvement from various national governments. The international consortium is currently considering two possible sites short-listed to host the SKA; the first bid is from Australia, the second is from a group of 6 southern African countries. A decision on where the SKA will be constructed is expected from the international consortium by 2011.

When will the SKA be built?

The SKA will be built in stages, starting from 2012, with construction expected to be completed by 2020.

How much will the SKA cost, and who will pay?

The current estimated cost of the SKA is AU\$2 billion. Funding for the SKA will come from a large range of international sources, including both science institutions and interested national governments. The United States and the European Union are expected to provide a large proportion of the funding for the project.

What other large radio telescopes are already in existence?

There are currently radio telescopes in 25 countries around the world, some of which consist of multiple dishes, linked together as a single instrument. For example, the Very Large Array (VLA) radio telescope in the United States consists of 27 individual dishes spread over 36 kilometres.

What are the benefits for New Zealand?

Participation in the SKA with Australia could offer New Zealand benefits in science, economic development, and in the information and communications technology (ICT) area. The SKA could significantly boost New Zealand's radio astronomy capability. Economic development opportunities could include civil engineering, construction and technology development. The SKA could offer significant ICT opportunities, in the construction of ICT infrastructure, and the development of SKA-related ICT technology.

What is the role played by Australia so far?

As part of the technology development process and to support its bid to host the SKA, Australia is funding (A\$101 million) the Australian Square Kilometre Array Pathfinder (ASKAP). The ASKAP will be a powerful radio telescope in its own right, and will act as an important test-bed for SKA technology.

Where can I find more information on the SKA?

www.skatelescope.org (International SKA consortium website)

www.ska.gov.au (Official Australia SKA website)