



Trans-continental radio astronomy demonstration highlights national network co-ordination to strengthen Australias bid for the Square Kilometre Array

Perth, AUSTRALIA 12 March 2009 The International Centre for Radio Astronomy Research (ICRAR) last night hosted a landmark event to strengthen Australias bid for the Square Kilometre Array (SKA). The purpose of the event was to demonstrate the national network co-ordination possible and prove Australias capability to conduct transcontinental radio astronomy.

The demonstration included the high-speed transfer of data to Perth, from CSIRO and University of Tasmania radio telescopes on Australias east coast, via an AARNET trans-continental 10 Gbps connection. The data transfer was processed in real-time on a Perth-based computer cluster located at ICRARs Curtin University of Technology node, using state-of-the-art software.

This demonstration was the first time such high data-transfer speeds have been reached when transporting astronomic information from the east coast of Australia to the west. This event was designed to be a first step toward demonstrating the capabilities required for Australia to build the next generation radio telescope, the SKA, over a 3,000 kilometre continental area.

The SKA is one of the most ambitious international science projects ever devised. It is planned to be a radio telescope with 10,000 times greater discovery potential than any of the worlds existing telescopes. The goal for the SKA is to be ready for initial observations by 2016 and fully built by 2020. The observations from the telescope will help to answer fundamental questions about the evolution of the universe.

Australia and Southern Africa have been identified by the international astronomy community as suitable sites for the SKA.

The demonstration included a video presentation from Senator the Hon Kim Carr, Federal Minister for Innovation, Industry, Science and Research and was attended by senior representatives from organisations involved in the Australian SKA project.

Professor Steven Tingay, ICRAR Deputy Director said, The transfer speeds achieved during last nights demonstration were close to 500 times faster than consumer broadband speeds. The SKA will require an improvement multiplied by a factor of several hundred on this data transfer speed, to support the science goals of the SKA.

Professor Brian Boyle, CSIRO SKA Director said, "Western Australia is an excellent location for future large scale radio astronomy infrastructure because of its remoteness and the clear, noise-free view of the rich Southern Hemisphere skies it offers astronomers. The extensive national collaboration that has wrought this technical advance, not only highlights our capabilities in this domain, but also points the way towards SKA readiness for Australia."

Western Australian Minister for Science and Innovation Troy Buswell said the SKA was an exciting, once-in-a-lifetime opportunity to collaborate globally on a project that would not only revolutionise radio astronomy, but many other fields of discovery and endeavour.

The Western Australian Government has committed \$20 million to help establish ICRAR as one of the key institutions that will support these collaborations and contribute to the development of technologies necessary to advance this fantastic project, Minister Buswell said.

Mr Chris Hancock, CEO AARNET, said, This demonstration was an important step in progressing Australias bid to host the SKA. The demonstration brought the speed, image quality and functionality of Australias Eastern-based telescopes to the West via AARNets 10-gigabit eVLBI connection.

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About ICRAR

The International Centre for Radio Astronomy Research (ICRAR) is a joint venture between The University of Western Australia (UWA) and Curtin University of Technology. The vision for ICRAR is of a collaborative centre that is international in scope, which achieves and sustains research excellence in astronomical science and technologies and which, as a coherent and unified part of Australia's national effort, makes a fundamental contribution to the realization and scientific success of the SKA. The administrative office of ICRAR is located at UWA with research conducted at both universities campuses. ICRAR is funded by the Western Australian Government and headed by leading WA-based scientists focused on the development of the science and engineering necessary for the international Square Kilometre Array project.

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About CSIRO

CSIRO, the Commonwealth Scientific and Industrial Research Organisation, is Australia's national science agency and one of the largest and most diverse research agencies in the world. For further information, please visit: www.csiro.au.

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About AARNet

AARNet Pty Ltd (APL) is the company that operates Australia's Academic and Research Network (AARNet). It is a not-for-profit company limited by shares. The shareholders are 37 Australian universities and the CSIRO. AARNet provides high-capacity leading edge Internet services for the tertiary education and research sector communities and their research partners. AARNet serves more than one million end users who access the network through local area networks at member institutions. For further information, please visit: www.aarnet.edu.au.

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