



Australia and Europe Combine In World First To View The Southern Hemisphere Sky

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SYDNEY, Australia

— 9 October, 2007 — AARNET broke new ground yesterday when it provided a three gigabit per second direct network path from three Australian radio telescopes across to Europe. www.aarnet.edu.au.

Chris Hancock, CEO of AARNET said, "For the first time ever, Australian researchers were able to provide European radio astronomers with real-time access to the Southern Hemisphere sky."

As part of the EXPReS project (EXpress Production Realtime eVLBI Service) which involves AARNET, the CSIRO's Australian Telescope National Facility and JIVE in the Netherlands, astronomers in Australia and Europe have been able to view Supernova SN1987a.

Tasso Tzioumis, CSIRO Research Scientist, said, "The supernova exploded 20 years ago in the Magellanic clouds which are 167,000 light years away. This is the first time we have been able to image this supernova in radio waves at such high resolution and sensitivity."

Running from midnight on Sunday, 7 October to midday on Monday 8 October, the network connectivity operated flawlessly for 12 hours. The high resolution and sensitivity of these observations allowed detailed imaging of the supernova by scientific communities on both continents. The scientists are also using the data to explore the possibility of a pulsar at the heart of the supernova.

The data was transported from the telescopes at Parkes, Narrabri and Coonabarabran in NSW at 512Mb per second in real-time to JIVE's super computer using the three AARNET lightpaths. The JIVE correlator combined the signal from the three Australian telescopes to create an image of the supernova.

To get from Australia to the Netherlands, the data travelled across three continents via the Southern Cross Cable Network, across the Pacific Ocean via CENIC to Seattle, across Canada on the CANARIE network to Chicago, then across the Atlantic via SURFNet to the Netherlands onto JIVE.

Chris Hancock said, "This takes the data on a journey of over 25,000km. This is a first for Europe and Australia in being able to demonstrate a high-speed international connection that allows true observations and analysis over an extended period of time. This demonstrates the true power of the internet for science and research. To simplify how much data this project processed in a short amount of time, the data transfer rate from each telescope would fill the hard drive of an average household PC every 15 minutes."

Tasso Tzioumis said, "It is an exciting and valuable breakthrough for scientific communities in Australia and around the world to be able to connect over vast distances at such high speed. This is yet another example of how AARNET's infrastructure has enabled our researchers to contribute on the global stage."

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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:

Media contact:

Rachel York

Max Australia

02 9954 3492

rachel.york@maxaustralia.com.au