

# **MEDIA RELEASE**

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## Astronomical success as antennas linked

A new Australian astronomical network has allowed researchers to view a quasar more than seven and a half billion light years away in greater detail than ever before.

The University of Tasmania's 26m radio telescope at Mt Pleasant and five others around Australia and New Zealand were connected by an optical fibre link, which allowed them to transmit the data in real time to a central correlation facility at Curtin University. At Curtin the data was processed to make an image.

Associate Professor Simon Ellingsen of the UTAS School of Maths and Physics said the data was streamed between the antennas and the correlation facility at rates between 512 Mbps and 1Gbps.

"Just to put that in perspective 512 Mbps streaming is equivalent to sending a DVD worth of information every 75 seconds, which is what Hobart was doing," he said.

The radio source the astronomers targeted was PKS 0637-752.

CSIRO astronomer Dr Tasso Tzioumis said of the quasar: "It's a fascinating object, and we were able to zoom right into its core, seeing details just a few millionths of a degree in scale, equivalent to looking at a 10-cent piece from a distance of 1000 km."

During the experiment Dr Tzioumis and fellow CSIRO astronomer Dr Chris Phillips controlled all the telescopes from Sydney.

Researchers presented this network at the 2011 International SKA Forum in Banff, Canada, today to emphasise the potential for creating a future network feeding into a central Square Kilometre Array (SKA) telescope in Australia.

The SKA telescope will involve linking several thousand antennas, up to 5500 km apart, and have them working together as a single telescope, allowing researchers to see distant galaxies in more detail.

"This was a big deal for the Australia/NZ SKA bid because it demonstrated for the first real-time high-speed link up including antennas from both the Australian SKA site near Geraldton in WA and the Warkworth antenna (near Auckland) in New Zealand," Assoc Prof Ellingsen said.

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