The Australia Telescope National Facility

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Abstract

The Australia Telescope National Facility (ATNF) is operated by CSIRO Astronomy and Space Science, a division of CSIRO – Australia's national science agency. The facility supports research in radio astronomy and can be used by researchers from institutions all over the world.

The ATNF currently offers the Australia Telescope Compact Array, Parkes Telescope, Mopra Telescope, and the Long Baseline Array to users. Users also have access to NASA's 70 m antenna in Tidbinbilla, near Canberra. Telescope time allocation is based on scientific merit. More information on the ATNF, including instrument capabilities and how to request observing time, may be found at http://www.atnf.csiro.au.

A substantial receiver upgrade of the Australian Telescope Compact Array (ATCA) has recently been completed. System temperatures ~20K are now achieved over most of the range 1–11 GHz. Instantaneous bandwidths of 4 GHz (with full Stokes polarimetry) are now available. At the Parkes Telescope, infrastructure upgrades to enable remote observing are now complete. Most Parkes observing is now performed from the ATNF Headquarters in Sydney, or further afield.

The Australian Square Kilometre Array Pathfinder (ASKAP) will be part of the ATNF. ASKAP is a unique survey interferometer consisting of 36 antennas that will provide a field of view of 30 square degrees and resolution 10 arcsec (1.4 GHz) using Phased Array Feeds (PAFs). It will operate with 0.3 GHz bandwidth in the range 0.7–1.8 GHz. Most site infrastructure and all the ASKAP antennas are now complete. Six novel phased-array feeds (PAFs) are providing the first scientific images from PAFs on an interferometer. The next generation of PAFs, with system temperatures of order 40 K, are entering production and will be installed beginning in late 2014. Early science with ASKAP is scheduled to begin in 2015.

ASKAP is located at the Murchison Radio-astronomy Observatory (MRO) in remote Western Australia, a location chosen for its radio quietness, and where the SKA infrastructure in Australia will be centred. CSIRO also hosts the Murchison Widefield Array (MWA) at the MRO.