



## Call for Expressions of Interest to purchase time on the Australia Telescope

*November 2016*

### Summary

CSIRO is seeking Expressions of Interest (EoI) from Australian and international research institutes or from other organisations that see genuine potential in the purchase of time on one or more of the Australia Telescope National Facility's (ATNF) radio-telescopes.

This document describes the background, scope, and anticipated service offering from CSIRO, and provides contact details for questions, as well as instructions for submission of EoI responses.

This EoI will open on 17 November 2016, and close on 18 December 2016.

### Background

CSIRO, Australia's national science agency, operates a number of world-class radio astronomy observatories that are collectively known as the Australia Telescope National Facility or ATNF. These Southern Hemisphere facilities support world-leading research by Australian and international astronomers. CSIRO Astronomy and Space Science (CASS) also manages the Murchison Radio-astronomy Observatory, hosting the ASKAP and MWA telescopes, and the site of the Australian Square Kilometre Array telescope.

CSIRO's radio astronomy facilities are world class in productivity and impact and are unique in the Southern Hemisphere. The Australia Telescope Compact Array (ATCA) at Narrabri excels in having frequency coverage spanning 1-105GHz and is a reconfigurable array with short spacings down to 30m. A further 22-metre antenna, known as Mopra, is located at nearby Coonabarabran. The Parkes 64-m telescope ("The Dish") is easily the largest dedicated single dish instrument in the Southern Hemisphere and has frequency coverage from 0.7 to 26GHz. In Western Australia, a new-technology telescope ASKAP is currently being commissioned as a fast survey instrument with high dynamic range. ASKAP is an interferometer array with new-technology Phased Array Feed (PAF) receivers giving a wide field of view (30 square degrees), and with a total collecting area of approximately 4,000 square metres from 36 antennas each 12 metres in diameter. The frequency range is 700 MHz to 1.8 GHz with a 300 MHz instantaneous bandwidth.

CSIRO has a long history of providing innovative technical solutions to meet our users' specific requirements for conducting great science, both within traditional radio astronomy research disciplines and beyond, such as SETI searches and spacecraft tracking. Moreover, CASS's team of highly skilled engineers, astronomers and support staff able to provide value-adding services and tailored data products. Most recently, Parkes has successfully commenced observations for the Breakthrough Listen project, as part of a global SETI program for the Breakthrough Foundation.

### Scope of Offer

Expressions of Interest are sought from any institutions or facilities engaged in large projects that would benefit from significant amounts of guaranteed time over a sustained period on ATNF facilities. An example would be an astronomical research institute seeking guaranteed time as an adjunct or follow-up study to their own astronomy projects. The offering extends to arrangements beyond the obvious radio-astronomy agencies and could include organisations operating large optical astronomy facilities, or to any other organisations capable of exploiting the unique capabilities of ATNF, for example in satellite or spacecraft tracking applications.

The opportunity to purchase time on our facilities, rather than through competitive written proposals may be of particular interest to astronomers or other researchers whose interests are, for any number of reasons, not well suited to the current competitive proposal process.

The following offers a guide to the service package by telescope:

**ATCA** – exclusive access to up to 50% of observing time from April 2017, with any array configuration and any standard receivers. Standard observer training, observing support, and access to post-processing facilities included. Support over and above standard levels negotiable. Installation, commissioning and support of user-supplied or instrumentation negotiable.

**Parkes** – exclusive access of up to 25% of available observing time from April 2017, with any supported receivers. Standard observer training, observing support, and access to post-processing and data archiving facilities included. Support over and above standard levels negotiable. Installation, commissioning and support of user-supplied or user-specified instrumentation welcomed as part of a negotiated package.

**ASKAP** – up to 25% of observing time from 2018. Installation, commissioning and support of user-supplied instrumentation or non-standard observing modes negotiable.

**Mopra**- exclusive access to a large fraction of observing time from October 2017 with any supported receiver, with time available in minimum blocks of 4 weeks. Standard observer training, observing support, and access to post-processing and data archiving facilities included. Installation, commissioning and support of user-supplied instrumentation welcomed as part of a negotiated package.

**Long Baseline Array (LBA)** – up to 30 days per year of available observing time from April 2017 for array observations with ATCA and/or Parkes and/or Mopra at any standard frequencies. Assistance with schedule preparation, observing support, standard correlation and calibration provided. Additional support or special requirements negotiable. Additional time beyond 30d/y, and the inclusion of additional non-CSIRO radio telescopes to the array may be negotiable.

### **Expressions of Interest**

Expressions of Interest for the purchase of ATNF telescope time should be submitted by email by 16 December 2016. Following this date, CSIRO will begin discussions with potential users/customers that indicate genuine interest.

Expressions of Interest should include (at least) a broad indication of the research area or commercial application of purchased telescope time, potential amount of time or funding, remarks on pricing model, and whether a particular operating model is preferred at this stage.

Preliminary enquiries are encouraged. For further information, or to submit an expression of interest, please contact Dr John Reynolds ([john.Reynolds@csiro.au](mailto:john.Reynolds@csiro.au); +61 2 9372 4165).

All Expressions of Interest will be held in confidence.