

## A 4x4 phased-array transmitter for bistatic radar

Phased-array antenna systems have widespread use in diverse areas such as radar, radio astronomy and 5G telecommunications.

This project will build upon existing work to design, build and commission a 4x4 phased-array transmitter for use in communications and bistatic radar experiments.

The overarching goal of this project is for the transmitter to be used as part of the Space Debris Illuminator bistatic radar system, with the low frequency radio telescopes at the Murchison Radio-astronomy Observatory to be used as the receiving elements.

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**Research Field**

Radio Astronomy/Engineering

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**Project Suitability**

Masters, Eng 4<sup>th</sup> year

Honours (as appropriate)

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**Project Supervisor**

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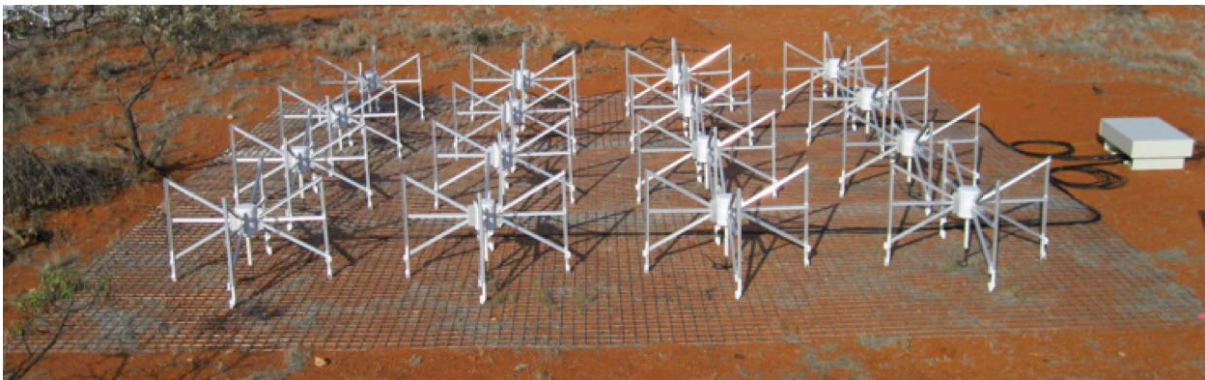
**Co-Supervisors**

Prof. John Kennewell

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### Aims of project

- (i) expand upon an existing 4x1 phased-array system to complete the design and construction of a 4x4 phased array transmitter
- (ii) design and build control software for the phased array
- (iii) deploy the system and perform performance characterisation experiments.



*Figure 1: This is an MWA tile, which is a 4x4 phased array receiver.*