

## Performance characterization of the Space Debris Illuminator

The “Space Debris Illuminator” is a dedicated steerable radio transmitter array intended for “illuminating” the low earth orbit are above the MWA radio telescope. The system transmits at 144 MHz.

The Space Debris Illuminator forms the transmitter part of a bistatic radar system with telescopes at the Murchison Radio-Astronomy Observatory forming the receiving part.

This project will finalise the signal chain and undertake a detailed characterisation of the performance of the system, in particular comparing against passive radar techniques that have been used with the MWA radio telescope.

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**Research Field**

Radio Astronomy/Engineering

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**Project Suitability**

Masters

Honours (as appropriate)

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**Project Supervisor**

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**Co-Supervisors**

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### Aims of project

- (i) Complete the commissioning of the signal chain
- (ii) perform test observations in conjunction with receiving arrays at the MRO
- (iii) characterise the sensitivity and performance of the telescope.

This project will uniquely exploit the frequency coverage of many Australian radio telescopes such as the Curtin-operated telescopes MWA and EDA at the MRO.

The image on the right shows the dedicated antennas for the Space Debris Illuminator, which transmits at 144 MHz.

