



## The Phase II Murchison Widefield Array: Current Status and Future Plans

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The Murchison Widefield Array (MWA) is a low-frequency precursor to the Square Kilometre Array (SKA). The telescope operates between 70 and 300 MHz and is located on the Murchison Radioastronomy Observatory (MRO) in Western Australia, which is a pristine environment for radio astronomy [1]. The instrument [2,3,4] is operated by Curtin University on behalf of a consortium of 21 international partner organisations spanning 6 countries. The telescope was recently upgraded with an additional 2048 dipole antennas spread out over a ~5km area [5]. I will provide an update on the capabilities of the expanded array; the Phase II MWA, and discuss some of the recent scientific highlights [6,7,8], and expected performance improvements [5].

1. A. R. Offringa, et al., “The Low-Frequency Environment of the Murchison Widefield Array: Radio-Frequency Interference Analysis and Mitigation”, *Publications of the Astronomical Society of Australia*, **32**, id.e008, March 2015, 13 pp doi:10.1017/pasa.2015.7.

2. S. Tingay et al., “The Murchison Widefield Array: The Square Kilometre Array Precursor at Low Radio Frequencies,” *Publications of the Astronomical Society of Australia*, **30**, id.e007, January 2013, 21 pp doi:10.1017/pasa.2012.007.

3. S. Ord, et al., “The Murchison Widefield Array Correlator,” *Publications of the Astronomical Society of Australia*, **32**, id.e006, March 2015, 14 pp doi:10.1017/pasa.2015.5.

4. T. Prabu, et al., “A digital-receiver for the Murchison Widefield Array,” *Experimental Astronomy*, **39**, 1, id.e006, March 2015, pp. 73-93 doi:10.1007/s10686-015-9444-3.

5. R. Wayth, et al., “The Phase II Murchison Widefield Array: Design Overview,” *Publications of the Astronomical Society of Australia*, 2018, in press

6. R. Wayth, et al., “GLEAM: The GaLactic and Extragalactic All-Sky MWA Survey” *Publications of the Astronomical Society of Australia*, **32**, id.e025, June 2015, 12 pp doi:10.1017/pasa.2015.26.

7. A. R. Offringa, et al., “Parametrizing Epoch of Reionization foregrounds: a deep survey of low-frequency point-source spectra with the Murchison Widefield Array,” *Monthly Notices of the Royal Astronomical Society*, **458**, 1, May 2016, p.1057-1070 doi:0.1093/mnras/stw30.

8. M.E. Bell, et al., “A survey for transients and variables with the Murchison Widefield Array 32-tile prototype at 154 MHz,” *Monthly Notices of the Royal Astronomical Society*, **438**, 1, February 2014, p.352-367 doi:0.1093/mnras/stt2200.

