

## The GLEAM 4-Jy (G4Jy) Sample: the ‘brightest’ radio-sources in the southern sky

*Thursday, 15 April 2021 08:00 (15 minutes)*

Powerful radio-galaxies feature heavily in our understanding of galaxy evolution. However, when it comes to studying their properties as a function of redshift and/or environment, the most-detailed studies tend to be limited by small-number statistics. In this talk, I will present a new sample of ~2,000 of the ‘brightest’ radio-sources in the southern sky (Dec.  $< 30$  deg). These were observed at low radio-frequencies as part of the GaLactic and Extragalactic All-sky MWA (GLEAM) survey, conducted using the Murchison Widefield Array (MWA). This instrument is the precursor telescope for the low-frequency component of the Square Kilometre Array, and allows us to select radio galaxies in an orientation-independent way (i.e. minimising the bias caused by Doppler boosting, inherent in high-frequency surveys). Having an integrated flux-density  $> 4$  Jy at 151 MHz, we refer to these objects as the GLEAM 4-Jy (G4Jy) Sample (White et al., 2020a, 2020b). Thanks to the location of the MWA in a protected, radio-quiet zone, we have excellent spectral coverage for these sources, with 20 radio flux-densities spanning a frequency range of 72-231 MHz. Following repeated visual inspection and thorough checks against the literature, the G4Jy catalogue is public and includes mid-infrared identifications for 86% of the sources. With over 10 times as many sources as the best-studied, low-frequency radio-source sample that is optically complete (the revised Third Cambridge Catalogue of Radio Sources; 3CRR), the G4Jy Sample will allow models of powerful active galactic nuclei (including blazars) to be tested more robustly.

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