Multi-Waveband Studies of the Molonglo 1-JY Sample of Radio Galaxies

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The current status of the project to identify and study radio galaxies in a complete sample of over 500 radio sources from the Molonglo Reference Catalogue with $S \geqslant 0{\cdot}95$ Jy at 408 MHz is described. Radio maps of the entire sample have been made with resolutions between 1 and 5 arcsec at 5 GHz using the Very Large Array. The maps are being used to make optical identifications from deep R-band CCD imaging using the 2.5 m Du Pont telescope at Las Campanas. Spectroscopic observations of identified objects are being made with the 4 m telescope at Cerro Tololo. The project has already led to the identification of about 50 galaxies at $z > 1$. About 20 of these have $z > 2$, including two at $z = 3.13$ and 3.04 respectively, which are the most distant galaxies known in the southern hemisphere. Our results confirm the correlation between radio spectral index and redshift, as most of the high redshift galaxies have rather steep radio spectra.

Many of the galaxies are also being imaged in the g, I, J, H and K wavebands in order to determine the spectral energy distributions. The results are discussed in the context of the observed alignment between the radio, optical and IR emission.

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