



High Sensitivity Imaging with MeerKAT and uGMRT: Exploring the Deep GHz Universe

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Next generation radio telescope dish arrays in the era leading up to the SKA are being designed for high-sensitivity imaging of large areas of the sky over broad bandwidths. With sixty-four 13.5 metre antennas offering wide field-of-view, the recently completed MeerKAT in South Africa promises to be the world's most powerful imaging interferometer at GHz frequencies, ideally suited to high sensitivity exploration of the deep radio universe. During the next several years, before it is integrated in the SKA phase 1 mid-frequency array, MeerKAT will undertake deep imaging survey projects to probe the faint radio universe with unprecedented combination of sensitivity and sky area. At the same time the Giant Metrewave Radio Telescope in India has completed an upgrade program that dramatically increases its bandwidth and sensitivity, providing sensitivity and resolution below 1 GHz matched to MeerKAT. The upgraded GMRT and MeerKAT together thus create an opportunity for tremendous synergy as complementary facilities for study of the deep radio sky on the pathway to SKA key science in cosmology, evolution of galaxies and the origin and evolution of cosmic magnetism. The very broad bandwidth from 300 MHz to 3 GHz combined with full Stokes spectral imaging result in unique data sets that enable scientific investigations of the broad-band low-frequency radio properties of vast numbers of radio galaxies, Active Galactic Nuclei and star forming galaxies to microJy flux densities. I will present early results of deep imaging observations with MeerKAT and the GMRT, review some of the technical challenges, and discuss the science outcomes and directions.