

Abstract Submitted
for the APR13 Meeting of
The American Physical Society

Search for Giant Relic Radio Lobes Straddling Classical Double Radio Galaxies PAUL WIITA, The College of New Jersey, S.K. SIROTHIA, - GOPAL-KRISHNA, National Centre for Radio Astrophysics, TIFR, India — The Giant Metrewave Radio Telescope (GMRT) in India is extremely sensitive and has excellent resolution at low frequencies down to 150 MHz. We are reprocessing archival GMRT data using AIPS++ to make new high dynamic range maps of known radio galaxies, primarily at 325 MHz. The goal is to search for extended synchrotron radiation often only detectable at lower frequencies. Such radiation is emitted by lower energy relativistic electrons that had been accelerated by the radio galaxy at hot-spots at the ends of jets during an earlier phase of activity. Any such discoveries would add to the fewer than 20 known Double-Double Radio Galaxies (DDRGs), which are the best tracers of recurrent activity in galactic nuclei and are one of the few ways for us to understand the duty cycle of such activity, associated with the feeding of supermassive black holes. Good maps of these sources could distinguish between the competing hot-spot and bow-shock models for the inner lobes of DDRGs. Discoveries of such relic lobes would also caution against the currently widespread use of classical double radio sources for testing cosmological models and unification schemes for active galactic nuclei since their ages and sizes would need to be reconsidered. We report our discoveries to date.

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Date submitted: 07 Jan 2013

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