Technical Page

Proposal Type:	Regular
General Category:	Astronomy
Sub-Category:	Spectroscopy
Observation Category:	Extragalactic
Total Time Requested:	6 Hours
Minimum Useful Time:	2 hr

Proposal Title: HI and OH Observations of Two Nearby Compact Radio Sources

ABSTRACT:

From a GMRT study of HI absorption towards 18 nearby Compact Steep-Spectrum (CSS) and Giga-Hertz Peaked Spectrum (GPS) radio sources, the CORALZ sample, we have made 7 new detections. We now propose observing two of these which lie within the Arecibo sky to, (i) examine the global properties of their cold HI gas, and (ii) attempt detection of ^{16}OH (and other molecules) to understand the physical conditions in their central regions. If these young radio sources are triggered by gas-rich galaxy mergers and interactions, HI observations are critical towards understanding the global gas properties and revealing signs of interactions. While we here propose extending the observations of these two CORALZ sources in the Arecibo sky, the GMRT will be used to do the same for the other detections. However, for these two objects, the sensitivity of the Arecibo telescope is invaluable for our scientific objectives.

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Remote Observing Request

☐	Observer will travel to AO
☒	Remote Observing
☐	In Absentia (instructions to operator)

Instrument Setup

L-wide

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

1106 - 1645 MHz

This proposal requires Iridium RFI protection at 1612 MHz between 10pm and 6am EST.

This proposal requires coordination with Punta Salinas radar within the band 1222-1381 MHz..

This proposal requires coordination with GPS L3 at 1381 MHz.