

Technical Page

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Extragalactic
 Total Time Requested: 58 Hours
 Minimum Useful Time: 1 hour

Proposal Title: HI and Molecular Line Observations of the 2 Jy IRAS-NVSS Sample at L-Band
ABSTRACT:

We propose using the Arecibo telescope to study 85 infrared galaxies from the 2 Jy IRAS-NVSS sample. The observations will be carried out simultaneously for eight bands, namely the HI 21 cm and four ¹⁶OH 18 cm lines in emission/absorption, HCN, HCO+, and the ¹⁸OH isotope, using the full capabilities of the WAPP spectrometer. Our observations will yield better sensitivity and frequency coverage than any previous survey, and provide a complete, homogeneous set of high-sensitivity data for over half the Arecibo-accessible objects in the 2 Jy IRAS-NVSS sample. Among the scientific goals are to: 1) investigate the differences in physical characteristics (velocity width, HI mass, etc.) for sources with AGN's and those with pure starbursts; 2) study the OH gas properties, especially the occurrence of masers and activity in the OH satellite lines; 3) test the consistency of these galaxies with the Tully-Fisher relationship.

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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: WAPPs dual-board mode.

RFI Considerations

Frequency Ranges Planned

1100 - 1750

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.