

## Technical Page

Proposal Type: Regular  
 General Category: Astronomy  
 Sub-Category: Spectroscopy  
 Observation Category: Extragalactic  
 Total Time Requested: 60 Hours  
 Minimum Useful Time: 45 minutes

**Proposal Title:** HI and Molecular Line Observations of the 2 Jy IRAS-NVSS Sample at L-Band: Part III, Survey Completion

*ABSTRACT:*

We propose using the Arecibo telescope to study 140 infrared galaxies from the 2 Jy IRAS-NVSS sample for which there are no HI measurements. These observations will provide a complete, homogeneous set of high-sensitivity data for all Arecibo-accessible objects and complement our previous studies (a1908 and a2361) covering the other 12 hours in right ascension for which we have obtained observations of 155 galaxies. The observations will be carried out simultaneously for eight bands, namely the HI 21 cm and four <sup>16</sup>OH 18 cm lines, HCN, HCO<sup>+</sup>, and the <sup>18</sup>OH isotope, using the full capabilities of the WAPP spectrometer. Among the scientific goals are to: 1) investigate the differences in physical characteristics for sources with AGNs and those with pure starbursts; 2) search for statistical trends with increasing infrared luminosity; 3) study OH gas properties, especially the occurrence of masers and activity in the OH satellite lines.

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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**

1200 - 1730 MHz. Exact frequency will depend on redshift of each object.

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.