

## Technical Page

Proposal Type: Regular  
 General Category: Astronomy  
 Sub-Category: Spectroscopy  
 Observation Category: Extragalactic  
 Total Time Requested: 40 Hours  
 Minimum Useful Time: 2 hr

**Proposal Title:** The Molecular ISM of Two Arp220-like Galaxies via Transitions across 3 – 10 GHz Frequency Range

*ABSTRACT:*

In a recent 4450 – 5300 MHz spectral line survey of 21 "Arp220-like" galaxies (A2334), two objects showed remarkably similar ISM (in composition and physical states derived from their C-band molecular spectra) to that of Arp220 despite their much lower FIR luminosities. Here, we propose to extend that survey to cover the frequency ranges, 3 – 4.4 and 5.3 – 10 GHz for those two objects, IC860 and Zw049.057. This will make the databases comparable to what we have obtained for Arp220 previously (A2234). Among the many interesting molecular transitions expected in this range are several transitions of  $H_2CO$ ,  $HNCO$ , and  $l-H_2C_3$  that would help determining, kinetic temperature, starburst stage and molecular age in these systems.

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### Remote Observing Request

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

### Instrument Setup

C      X-high   S-high   C-high

### Atmospheric Observation Instruments:

**Special Equipment or setup:** none

### RFI Considerations

## Frequency Ranges Planned

3 – 10 GHz