

## Technical Page

Proposal Type:           Urgent  
 General Category:       Astronomy  
 Sub-Category:           Spectroscopy  
 Observation Category:   Extragalactic  
 Total Time Requested:   75 Hours  
 Minimum Useful Time:   1hr

**Proposal Title:** A 720–800 MHz Line Search in Arp220 and "Arp 200-look-alike" Galaxies  
**ABSTRACT:**

We propose extending our Arecibo cm-wavelength line searches of Arp220 and "Arp220-look-alike" galaxies (Projects A2234 and A2334) using the campaign 720-820 MHz receiver. Including Arp 220 itself, we have selected a sub-sample of 6 of these starburst/Ultra Luminous Infra-Red Galaxies (ULIRGs) in which we have detected spectral lines in our C-band search (A2334). Many pre-biotic, and otherwise important, molecules have potentially-detectable transitions within the 720-820 MHz range. Examples are, *CH*, *CH<sub>3</sub>OH*, *NH<sub>2</sub>CN*, *HCOOH*, *C<sub>3</sub>H*, *C<sub>6</sub>H*, HDO, plus nine hydrogen recombination lines. Also, the ground-state methanol transition at 834 MHz (previously detected in SgrB2) will be redshifted to fall within the frequency range of the receiver for at least 3 of these objects. With 8hr per source, and allowance for DPS bandpass-calibrator observations and other overheads, we request 75hr of observing time.

Name	Institution	E-mail	Phone	Student
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### Remote Observing Request

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

### Instrument Setup

705-825

### Atmospheric Observation Instruments:

**Special Equipment or setup:** none

### RFI Considerations

## Frequency Ranges Planned

720 - 820 MHz