

## Technical Page

Proposal Type: Short  
 General Category: Astronomy  
 Sub-Category: Spectroscopy  
 Observation Category: Extragalactic  
 Total Time Requested: 3 Hours  
 Minimum Useful Time: 3 hrs

**Proposal Title:** Testing a new model of OH megamaser emission

**ABSTRACT:**

A new radiative pumping model has recently been developed that predicts the expected OH megamaser strength in merging, IR-bright galaxies. We have recently completed Spitzer observations of a large sample of such galaxies that are able to test this model through measurements of the dust opacity and temperature. This is a critical first step in uniting theories of megamasers with observations of their global properties. We have identified a single galaxy (IRAS 23498+2423) that is predicted to show a strong OHM, but which has only an upper limit on the OH emission. We plan to observe this galaxy at Arecibo to a significantly deeper limit in OH and thus help to confirm or refute this new theory.

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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

1360-1390

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

This proposal requires coordination with GPS L3 at 1381 MHz.