Technical Page

This proposal has not been submitted before.

Proposal Type:	Director Discretionary Time
General Category:	Astronomy
Sub-Category:	Spectroscopy
Observation Category:	Extragalactic
Total Time Requested:	20 Hours
Minimum Useful Time:	1.5 hr

Proposal Title: A Pilot Search for Molecules in High-z Gravitationally Lensed Submillimeter (dusty, Star-forming) Galaxies.

ABSTRACT:

We propose a search for water, ammonia, formaldehyde, OH and methanimine in three gravitationally lensed, high-redshift Sub-Millimeter Galaxies (SMGs) as a pilot project for a large scale study of molecular ISM in SMGs. High-z water masers have only been discovered in lensed systems, with the highest redshift being in a source at z=2.64. Having further detections of water in early universe would constrain the evolution of the H_2O maser sources' luminosity function throughout cosmic time. Detection of other molecules in these dusty, star-forming galaxies will pave the way for detailed studies of galactic chemistry at the epoch of the highest rate of star formation.

Name	Institution	E-mail	Phone	Student
Tapasi Ghosh	Arecibo Observatory	tghosh@naic.edu	787 879 5754	no

Remote Observing Request

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

Instrument Setup

L-wide C S-low X-band

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

9000 - 10000 MHz
5000 - 6000 MHz
2000 - 3000 MHz
1100 - 1450 MHz

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

This proposal requires coordination with GPS L3 at 1381 MHz.