

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Galactic
 Total Time Requested: 63 Hours
 Minimum Useful Time: 1 hour

Proposal Title: Confirmation Study of OH 18 cm emission from Intermediate-Velocity Molecular Clouds

ABSTRACT:

Small molecular clouds exist at Galactic latitudes $> \pm 25$ deg., a subset of which have LSR velocities in the range $\pm 20-90$ km/s (known as IVMCs). Studies show the furthest IVMCs may lie at the disk-halo interface, and, given their dynamics, may represent infalling gas either from the Galactic fountain or the halo. While there are 11 known IVMCs to date, Rohser et al 2016b produced a list of 239 candidate IVMCs based on HI/Far-IR correlation. We propose to survey the X positions observable from Arecibo for the presence of OH 18cm emission to confirm the candidate IVMCs. If confirmed, this will constitute the first evidence that IVMCs are widespread in our Galaxy and underscore their importance in understanding the Milky Way's gas cycle. A follow up study will be proposed to map the IVMCs to investigate their virial properties and further probe atomic-molecular transition mechanisms.

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Allison J Smith	University of North Georgia	allison@physast.uga.edu	7062808084	no

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