

Technical Page

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Galactic
 Total Time Requested: 130 Hours
 Minimum Useful Time:

Proposal Title: Magnetic Fields towards High-Latitude Molecular Clouds

ABSTRACT:

More than 100 molecular clouds detected in CO(1–0) emission are at high Galactic latitudes. We have searched the latest GALFA data cubes to find HI envelopes coincident with 6 of these molecular clouds. We propose to use 130 hours of Arecibo time in an attempt to detect Zeeman splitting of the 21-cm line in the HI envelopes around these 6 high-latitude molecular clouds. While this is a significant investment of time, detections of fields around these molecular clouds would be a major observational step in constraining our understanding of the role magnetic fields play in the transition from atomic to molecular clouds. A reliable upper limit would also be extremely important in restricting the role of magnetic support in cloud evolution.

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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

1420-1720