

Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Galactic
 Total Time Requested: 200 Hours
 Minimum Useful Time:

Proposal Title: The Magnetic Morphology of High-Latitude Molecular Cloud MBM 40
ABSTRACT:

Little is known about the formation mechanism of high-latitude molecular clouds (HLMCs), some of the nearest molecular clouds to the Sun. One possibility is that they form in regions where the galactic magnetic field forms magnetic valleys, allowing sufficient column density of neutral gas to accumulate until the gas can begin to self-shield and form molecules. Verschuur (1989) used the 140-foot at Green Bank to detect a +5.5 uG magnetic field in high latitude molecular cloud MBM 40. Existing low resolution observations indicate the gas forms a helical structure in this cloud, which may be a result of the influence of the magnetic field. In that case, we may observe changes in the B-field direction as different sightlines are observed. We propose to map the magnetic field in MBM 40 with the intent of confirming Verschuur’s detection as well as gaining some insight as to the morphology of the magnetic field within this cloud.

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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