

Technical Page

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Galactic
 Total Time Requested: 72 Hours

Proposal Title: The CO-H2 Conversion Factor in Two Translucent Clouds

ABSTRACT:

The determination of the CO-H2 conversion factor for molecular clouds is one of the most important steps in deriving the physical properties of these objects. The class of translucent molecular clouds has a variation in the CO-H2 conversion factor of about an order of magnitude from cloud to cloud and, sometimes, even over a given cloud. The reasons for this variation are not yet known, but need to be uncovered in order to understand fully the role these objects play in the ISM. Observations of the main-line, hyperfine, ground state transition of CH at 3335 MHz provide a straightforward way to calibrate this conversion factor in translucent clouds. We propose to observe this line in two translucent clouds, MBM16 and MBM40, in order to understand why the conversion factor fluctuates from point to point in these objects.

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Service Observing Request

- None
- All of the observing run.
- Part of the observing run.
- Queue Observing

Remote Observing Request

- No
- Maybe
- Yes

Instrument Setup

Atmospheric Observation Instruments:

Description of Observer Equipment: I would like to use the Upper S-band receiver at 3335 MHz with the correlator split into 4 sbcs with 2 on each polarization of the 3335 MHz line, 1 on the 3349 MHz line and the other on the 3264 MHz line.

Special Equipment or setup: Nothing special required.

RFI Considerations

Frequency Ranges Planned