

Technical Page

This proposal has been submitted before.

The previous proposal number is A2900.

Proposal Type: Regular
 General Category: Astronomy
 Sub-Category: Spectroscopy
 Observation Category: Galactic
 Total Time Requested: 15 Hours
 Minimum Useful Time: 1. hour

Proposal Title: Search for Refrigerated Molecules

ABSTRACT:

It is well known that some molecules, notably formaldehyde (H₂CO) and methanol (CH₃OH), are found in absorption in cold molecular clouds, and therefore must be cooled (refrigerated) to temperatures below the Cosmic background temperature. We suggest that a class of ring molecules may be found in similar physical conditions. Because these molecules are larger, their lowest energy transitions are at lower frequencies. We propose to test the hypothesis that other ring molecules may be found via a search for both emission and absorption features of their lowest energy transitions. The Taurus Molecular Cloud (TMC-1) is known to be a prime candidate for molecule discoveries and we propose sensitive searches for select molecular candidates at the three positions.

Name	Institution	E-mail	Phone	Student
Glen I Langston	National Science Foundation	glangsto@nsf.gov	703-292-4937	no

Remote Observing Request

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

Instrument Setup

C S-low

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

1800 - 3100

4000 - 6000