Proposal Identification No.: A1960 Date Received: 2004-May-31_18:01:29

Technical Page

Proposal Type:	Regular
General Category:	Astronomy
Observation Category:	Galactic
Total Time Requested:	12 Hours

Proposal Title: OH Zeeman Observations of an Extremely Young Starless Core

ABSTRACT:

We wish to search for the Zeeman effect in 18cm OH emission lines from L1521E. Our Arecibo OH Zeeman effect survey has revealed no evidence for magnetically subcritical (i.e. magnetically dominated) cores. Yet typical field strengths inferred from the OH Zeeman effect in these cores are five times smaller than those inferred from the dispersion in linear polarization position angles. This discrepancy may result from depletion of OH in the dense regions of the cores. Recently, Tafalla and Santiago (2004) have discovered that the starless core L1521E does not exhibit C18O depletion; therefore, it likely does not have OH depletion either. These authors argue that the core is too young to have undergone significant depletion. If so, the core provides a currently unique opportunity to use the Zeeman effect to probe magnetic field strengths in dense core gas. We will also map OH emission to trace the ratio OH/C18O as a function of radius in the core.

Name	Institution	E-mail	Phone	Student
Richard M. Crutcher	University of Illinois	crutcher@astro.uiuc.edu	217 333-9581	no

Service Observing Request

- [X] None
- [ ] All of the observing run.
- [ ] Part of the observing run.
- [ ] Queue Observing

Remot e Observing Request

- [ ] No
- [ ] Maybe
- [X] Yes

Instrument Setup

L-wide

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned