Technical Page

Proposal Type: Regular
General Category: Astronomy
Sub-Category: Spectroscopy
Observation Category: Galactic
Total Time Requested: 30 Hours

Proposal Title: Mapping OH Emission near OH Zeeman Positions

ABSTRACT:

We were granted approximately 500 hours for Zeeman effect observations of 1665 and 1667 MHz OH emission lines from molecular cloud cores (project a1457). These observations have been completed recently. We now request 30 hours to map OH emission in the vicinities of our Zeeman effect positions. The map data will allow us to estimate total masses, column densities, radii, and volume densities for the regions sampled in our OH Zeeman survey. From this information, we will estimate in a consistent fashion the mass-to-flux ratios (or lower limits), virial properties and Alfvénic mach numbers (or lower limits) for the cores in the Zeeman study. Estimates of these parameters are essential in order to integrate the data from the a1457 study into the larger body of Zeeman effect observations in self-gravitating regions. This larger body of data will provide important constraints upon models describing the evolution of low-mass molecular cores.

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<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>E-mail</th>
<th>Phone</th>
<th>Student</th>
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<tbody>
<tr>
<td>T. H. Troland</td>
<td>University of Kentucky</td>
<td><a href="mailto:troland@pa.uky.edu">troland@pa.uky.edu</a></td>
<td>859 257-8620</td>
<td>no</td>
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Service Observing Request

X None
☐ All of the observing run.
☐ Part of the observing run.
☐ Queue Observing

Remote Observing Request

☐ No
X Maybe
☐ Yes

Instrument Setup

L-wide

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations
Frequency Ranges Planned

1665 - 1667 MHz