Proposal Title: A survey of CH line emission toward HI and OH line forming regions

ABSTRACT:
We propose to undertake a comprehensive study of the 3.3 GHz CH line emission toward a set of sight lines sampling the outer layer of molecular cloud with the aim to establish that this transition forms another tracer of the “CO-dark gas” in the Galaxy. The survey data set will be used to (a) determine the excitation temperature and column density of CH molecules; (b) test chemical models of the molecular cloud; (c) constrain cosmic ray ionization rate in “CO-dark gas” and (d) study the dependence of CH abundance on magnetic field strength.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<th>Phone</th>
<th>Student</th>
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<tbody>
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</tbody>
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Remote Observing Request

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

Instrument Setup

S-high

Atmospheric Observation Instruments:

Special Equipment or setup:

RFI Considerations
Frequency Ranges Planned