Technical Page

Proposal Type: Regular
General Category: Astronomy
Sub-Category: Spectroscopy
Observation Category: Galactic
Total Time Requested: 6.5 Hours
Minimum Useful Time:

Proposal Title: A search for Methanol and excited-state OH masers toward high-mass protostellar cores in the Hi-GAL survey

ABSTRACT:
Only very recently progress has been made toward the identification and study of the earliest phases of high-mass star formation (HMSF). However, the physical conditions in high-mass starless cores (HMSC) and the exact evolutionary path from HMSC to massive stars is not well constrained. Previous observational studies suggest that methanol masers are exclusively associated with early phases of massive star formation. The methanol maser thus appears as an ideal tool to detect a short-lived phase of HMSF, between the end of the the large scale accretion and the formation of massive proto-star. We have searched for methanol masers counterparts to the massive cores in selected fields of the Hi-GAL survey, and found that only a small percentage of high-mass proto-stellar object (HMPO) are indeed associated with a methanol maser. We therefore propose to use the Arecibo telescope to study the onset of the methanol maser phase and its precise emergence in the evolutionary sequence from HMS

<table>
<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>Luca Olmi</td>
<td>UPR-RP and INAF-OAA (Italy)</td>
<td><a href="mailto:olmi.luca@gmail.com">olmi.luca@gmail.com</a></td>
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Remote Observing Request

[X] Observer will travel to AO

Remote Observing

In Absentia (instructions to operator)

Instrument Setup

C-high

Atmospheric Observation Instruments:
Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

We possibly need protection from RFI currently in the range 5990 to 6020 MHz