This proposal has not been submitted before.

Proposal Type: Regular
General Category: Pulsars
Observation Category: Extragalactic
Total Time Requested: 12 Hours
Minimum Useful Time: 3 hours

Proposal Title: L-Band Survey of M87 for Fast Radio Bursts

ABSTRACT:
The two leading models proposed to explain the observed physical properties (flux density and rotation measure) of the repeating fast radio burst, FRB 121102, invoke the presence of a young magnetar located either in close proximity to an AGN, or in a highly magnetized plasma. In the Milky Way, such plasma is typically found close to the supermassive black hole (SMBH) at the Galactic center. These models then imply an increased FRB detection probability in the vicinity of SMBHs. Here, we request observing time to survey for FRBs in the dense regions around the \( \sim 10^9 \) solar mass SMBH of the elliptical galaxy M87. While successful FRB detections will inform us of the physical properties of the magneto-ionic medium near the SMBH in M87, the proximity of M87 shall additionally permit us to strongly constrain the shape of the FRB luminosity distribution function at low luminosities.

<table>
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<tr>
<th>Name</th>
<th>Institution</th>
<th>E-mail</th>
<th>Phone</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akshay Suresh</td>
<td>Cornell University</td>
<td><a href="mailto:as3655@cornell.edu">as3655@cornell.edu</a></td>
<td>16073793659</td>
<td>G</td>
</tr>
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Remote Observing Request

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

Instrument Setup
L-wide

Atmospheric Observation Instruments:

Special Equipment or setup: We will use the PUPPI backend for our observations.

RFI Considerations
Frequency Ranges Planned

1150 - 1730