Technical Page

This proposal has not been submitted before.

Proposal Type: Urgent
General Category: Astronomy
Sub-Category: Spectroscopy
Observation Category: Solar System
Total Time Requested: 2.5 Hours
Minimum Useful Time: 2 hrs

Proposal Title: OH 18-cm Observations of Comet ATLAS (C/2019 Y4)

ABSTRACT:

We propose target of opportunity observations with the Arecibo radio telescope of Comet C/2019 Y4 ATLAS, discovered in December 2019. Comet ATLAS reached perihelion on May 31, 2020. During its approach toward the Sun, it underwent multiple fragmentation events, separating the nucleus into multiple components. We will use the L-Band wide receiver to search the fragmented nucleus of Comet ATLAS for the presence of Hydroxyl (OH). Detections of the OH 18-cm main and satellite OH lines allow us to investigate the physical conditions of the comet nucleus and to place valuable constraints on various physical parameters related to upcoming interplanetary scintillation observations involving this object.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>E-mail</th>
<th>Phone</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>allison smith</td>
<td>Arecibo Observatory</td>
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<td>7062808084</td>
<td>no</td>
</tr>
</tbody>
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Remote Observing Request

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

Instrument Setup

L-wide

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations
Frequency Ranges Planned

Protection from the Iridium rfi is ideal for the 1612 MHz observations we’d like to carry out, but due to the short notice we’re able to give, we prioritize being able to observe soon even if the coordination cannot be arranged. Thank you!

This proposal requires Iridium RFI protection at 1612 MHz between 10pm and 6am EST.