Technical Page

Proposal Identification No.: R2022
Date Received: 2004-Sep-28 07:22:59

Proposal Type: Regular
General Category: Planetary Radar
Sub-Category: Radar
Observation Category: Solar System
Total Time Requested: 80 Hours

Proposal Title: Radar Mapping of the Moon at 70-cm Wavelength Using Arecibo and the GBT

ABSTRACT:
We request 80 hours of observing time at Arecibo and the GBT to complete a 70-cm wavelength, dual circular polarization, radar image mosaic of the near side of the Moon. This map will have a spatial resolution of 450-900 m/pixel, representing a 10-fold improvement over existing maps at this wavelength and the highest resolution synoptic radar coverage of the Moon. Techniques for data reduction and calibration have been demonstrated using data from 2003-2004, including a focusing approach that prevents image smearing. The great advantage of 70-cm data for lunar geology is their 3-6 m penetration depth and sensitivity to the depth-integrated rock abundance and chemical properties of the Moon’s ubiquitous surface layer of mixed dust and rock.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<th>Phone</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bruce A Campbell</td>
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<td>202 633 2472</td>
<td>no</td>
</tr>
</tbody>
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Service Observing Request

| X | None
| X | No
|   | All of the observing run.
|   | Maybe
|   | Part of the observing run.
|   | Yes
|   | Queue Observing

Instrument Setup

430 CH receiver  430 CH radar

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations