Technical Page

This proposal has not been submitted before.

Proposal Type: Regular
General Category: Planetary Radar
Sub-Category: Radar
Observation Category: Solar System
Total Time Requested: 14 Hours
Minimum Useful Time:

Proposal Title: 20-m Radar Imaging of Lunar Impact Craters and Hollow Terrain

ABSTRACT:

We propose 20-m per pixel resolution, bistatic (Arecibo/GBT) S-band radar imaging of two fresh impact craters with complex ejecta blankets and two areas of enigmatic lunar hollow terrains. Observations of the oblique impact craters Messier and Proclus will be used to map the extent of the impact melt deposits, search for channels, ponds and flow features, and determine how melt emplacement was influenced by topography. Radar images of lunar hollow terrains in two areas will be used to search for possible pyroclastic deposits and to determine whether the near-surface properties of the hollow pits is the same or different than the surrounding terrain. These observations will help to determine whether the presence of volatiles was important to hollows formation. The proposed observations are needed because currently available ground-based radar images have resolutions that are too low to discern important geologic details and because they were not imaged by spacecraft radar.

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<tr>
<th>Name</th>
<th>Institution</th>
<th>E-mail</th>
<th>Phone</th>
<th>Student</th>
</tr>
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<tbody>
<tr>
<td>Lynn M Carter</td>
<td>NASA Goddard</td>
<td><a href="mailto:lynn.m.carter@nasa.gov">lynn.m.carter@nasa.gov</a></td>
<td>301-614-6026</td>
<td>no</td>
</tr>
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<td>Space Flight Center</td>
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Remote Observing Request

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

Instrument Setup

S-Band radar  S-band receiver

Atmospheric Observation Instruments:
Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

2378-2382 MHz