

## Technical Page

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.

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### Service Observing Request

- None
- All of the observing run.
- Part of the observing run.
- Queue Observing

### Remote Observing Request

- No
- Maybe
- Yes

### Instrument Setup

430 CH receiver 430 CH radar

### Atmospheric Observation Instruments:

**Special Equipment or setup:** none

### RFI Considerations

## Frequency Ranges Planned