

## 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: 24 Hours  
 Minimum Useful Time: 4 hours (one pas of the Moon)

**Proposal Title:** Lunar Radar Mapping at 70-cm Wavelength

*ABSTRACT:*

We request 24 hours of Arecibo-GBT time to acquire targeted 70-cm wavelength, dual-polarization radar backscatter maps of the Moon. These observations will use a proven technique of a 1-us baud length and about 5 hours of integration time on each target to achieve 200-m spatial resolution with 8 looks per pixel. A 2014 study of Mare Serenitatis using such data revealed unseen details of lava flow complexes, possible channels and tubes, and early mare tectonic features. A follow-up study of Mare Imbrium delineates lava flow outlines never before evident. In 2015, we had successful runs for the Moon's north polar region and the region of Mare Humorum and Mare Nubium; work is in progress to analyze and publish these data. Our new observations will use the same techniques to study two regions that have not been favorably positioned for high-resolution imaging over the past several years: the Aristarchus Plateau/Mons Rumker region, and the southeastern lunar highlands.

Name	Institution	E-mail	Phone	Student
Bruce Campbell	Smithsonian Institution	campbellb@si.edu	202 633 2472	no

### Remote Observing Request

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

### Instrument Setup

430 CH receiver

### Atmospheric Observation Instruments:

**Special Equipment or setup:** none

**RFI Considerations**

**Frequency Ranges Planned**