Technical Page

Proposal Type: Regular
General Category: Planetary Radar
Sub-Category: Radar
Observation Category: Solar System
Total Time Requested: 16 Hours

Proposal Title: 70-cm Wavelength Radar Observations of Mars

ABSTRACT:
While Mars has been studied during a number of favorable oppositions using X- and S-band radar systems, there has been no effort to characterize the surface using P-band frequencies since 1973. None of these 70-cm observations survive in digital form. We request 16 hours of observing time to measure the 70-cm backscattering properties of Mars, to (1) determine the variability in apparent Fresnel reflectivity and rms slope as a guide to the design of a future Mars-orbital imaging radar system, (2) compare these derived parameters to the properties of the surface in visible, IR, and thermal IR data, and (3) search for correlations between these properties and changes in near-surface hydrogen abundance mapped by the Odyssey spacecraft [Feldman et al., 2002].

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>E-mail</th>
<th>Phone</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bruce A Campbell</td>
<td>Smithsonian</td>
<td><a href="mailto:campbellb@si.edu">campbellb@si.edu</a></td>
<td>202 633 2472</td>
<td>no</td>
</tr>
</tbody>
</table>

Service Observing Request

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

Remote Observing Request

- X No
- □ Maybe
- □ Yes

Instrument Setup

430 CH receiver 430 CH radar

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned