Technical Page

Proposal Type: Long-term
General Category: Planetary Radar
Sub-Category: Radar
Observation Category: Solar System
Total Time Requested: 131 Hours

Proposal Title: Radar and Visible/Near-Infrared Investigation of Primitive Main-Belt Asteroids

ABSTRACT:

We propose to carry out continuous-wave radar observations of 25 main-belt asteroids in the highly primitive P and D taxonomic classes. Such targets have been underrepresented in earlier radar surveys due to their relatively large heliocentric distances. Observations will be carried out in four blocks during October 2004, January 2005, October 2005, and November-December 2005. We propose to coordinate the radar observations with nearly simultaneous visible and near-infrared spectral observations in order to compare radar features with spectral features, with particular emphasis on correlated or anticorrelated rotational variations in these features. The combined dataset will constrain the near-surface roughness, composition, porosity, and hydration state of these dark, primitive, potentially organic-rich objects, and could also reveal any spatial variations in these properties across the targets’ surfaces.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<th>Phone</th>
<th>Student</th>
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<tbody>
<tr>
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</tbody>
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Service Observing Request

Remot e Observing Request

X None
☐ All of the observing run.
☐ Part of the observing run.
☐ Queue Observing

Instrument Setup

S-Band radar S-band receiver

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations
Frequency Ranges Planned

2380