Technical Page

Proposal Type: Regular
General Category: Planetary Radar
Observation Category: Solar System
Total Time Requested: 10 Hours
Minimum Useful Time: 6

Proposal Title: Radar-VLBI Observations of Near-Earth Asteroids 4179 Toutatis and 2008 EV5

ABSTRACT:

Radar observations of near-Earth objects provide uniquely valuable information about their shapes, spin states, and trajectories. Conventional radar observations use a single receive station, and resolve the target in Doppler velocity and in time delay. By observing radar targets with very-long baseline interferometry, we can unambiguously determine shapes and spin states with relatively few observations and look for variations in the radar scattering properties of the surface. We propose radar-VLBI observations of the near-Earth asteroids 4179 Toutatis and 2008 EV5 during November and December 2008, using Arecibo as the transmitter and the VLBA and Green Bank Telescope as receive stations.

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>E-mail</th>
<th>Phone</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael W Busch</td>
<td>California Institute of Technology</td>
<td><a href="mailto:busch@caltech.edu">busch@caltech.edu</a></td>
<td>1-612-269-9998</td>
<td>G</td>
</tr>
</tbody>
</table>

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

2330 - 2430