Technical Page

Proposal Type: Regular
General Category: Planetary Radar
Observation Category: Solar System
Total Time Requested: 66 Hours
Minimum Useful Time: 2 hr

Proposal Title: Continuation of a Long-Term Radar Survey of Main-Belt M and E class Asteroids

ABSTRACT:
We propose to observe five M-class asteroids (77 Frigga, 337 Devosa, 441 Bathilde, 504 Cora, and 758 Mancunia) and one E-class object (44 Nysa) that have never been observed with radar. We will also re-observe 97 Klotho to obtain the first delay-Doppler images of that target. These encounters are the best available for radar study for the next 5-25 years. These new observations will bring the total number of M-class main-belt asteroids observed with radar to 17, the number of E-class to two, and the number of imaged main-belt M-class asteroids to four (16 Psyche, 21 Lutetia, 97 Klotho, and 216 Kleopatra). These M-class observations will allow us to test the hypothesis that only about one-third of the spectral M population appears metallic, test the hypothesis that a 3 um spectral (hydration) feature is incompatible with metallic compositions, and to exploit the high SNR available for the M-asteroid 97 Klotho to do delay-Doppler imaging which should allow a three-dimensional shape model. 44 Nysa will be only the second E-class main-belt asteroid observed.

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<tr>
<th>Name</th>
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<tbody>
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Remote Observing Request

[X] 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