

Proposal Identification No.: R2795

Date Received: 2012-Aug-31_15:40:12

Technical Page

Proposal Type: Regular
General Category: Planetary Radar
Observation Category:
Total Time Requested: 13 Hours
Minimum Useful Time: 2 hrs

Proposal Title: Radar Investigation of Five X M E-class Asteroids

ABSTRACT:

We propose to observe five X M E-class asteroids to better understand their properties. Because M-class asteroids are purportedly metal-rich, radar is the best tool with which to test this compositional hypothesis. E-class asteroids are unique in that they have extremely high radar polarization ratios, an observation that remains unexplained. These observations continue our six year survey of all the M- and E-class asteroid observable at Arecibo. Two of these objects (161 Athor, 572 Rebekka, both M-class) have never been observed by radar. 216 Kleopatra (M-class) will have SNRs high enough for delay-Doppler imaging and allow us to refine that unusual target's shape and spin properties. Our observations will help us understand the origin of metal-asteroids and aubrites (E-class analogs) in the main-asteroid belt and add to our understanding of the early solar system's formation and subsequent evolution.

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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