

Technical Page

Proposal Type: Urgent
 General Category: Planetary Radar
 Observation Category:
 Total Time Requested: 24 Hours
 Minimum Useful Time: 45 minutes

Proposal Title: Urgent proposal for S-band radar imaging of Near-Earth Asteroid 2011 LC19
ABSTRACT:

This is an urgent proposal requesting $\tilde{24}$ hours of observing time during October and November 2011 for newly discovered potentially hazardous asteroid (PHA) 2011 LC19. The physical characteristics of this object are unknown, except that it has an absolute magnitude of 18.4 and an orbit that closely resembles those of the Jupiter-family comets, raising the question of whether this object might be an inactive comet nucleus. In our radar sample of 273 radar-detected NEAs, there are only ten with $T < 3.0$, the classical threshold to distinguish asteroids from comets. 2011 LC19 has the second lowest Tisserand parameter of any NEA we have ever tried to observe with radar. We assumed that 2011 LC19 has an optical albedo of 5%, which, given its absolute magnitude, corresponds to a diameter of $\tilde{1.2}$ km. We estimate that delay-Doppler images with 7.5 m resolution will put more than 1000 pixels on this object. The resulting dataset will be used to reconstruct the asteroid's 3D shape.

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Remote Observing Request

- Observer will travel to AO
- Remote Observing
- In Absentia (instructions to operator)

Instrument Setup

S-Band radar

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned