

Technical Page

Proposal Type: Regular
 General Category: Planetary Radar
 Observation Category: Solar System
 Total Time Requested: 25 Hours

Proposal Title: Radar Imaging of Asteroid 7 Iris

ABSTRACT:

This is a proposal to take advantage of an extraordinary opportunity for radar imaging of a 200-km main-belt asteroid, 7 Iris, during its 0.85-AU approach to Earth in Nov. 2006. This asteroid, which may be the source of some ordinary chondrites (which constitute >80% of meteorite falls), is thought to be mineralogically uniform but nonaxisymmetric and structurally heterogeneous. Iris' single-date SNR of about 530 is higher than achieved for any solar system object of similar size, and the close-approach geometry is excellent for accurate shape reconstruction. The proposed experiment can yield a shape estimate with approximately 10-km resolution. Iris' mass has been estimated with a claimed accuracy of 15%, but it is difficult to ascertain the uncertainty in the object's size. Our experiment will be very sensitive to Iris' dimensions, and a primary goal will be to constrain the object's volume and hence its density.

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Service Observing Request

- None
- All of the observing run.
- Part of the observing run.
- Queue Observing

Remote Observing Request

- No
- Maybe
- Yes

Instrument Setup

S-Band radar

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned