Proposal Identification No.: R2380 Date Received: 2007-Dec-27_13:48:17

Technical Page

Proposal Type:	Urgent
General Category:	Planetary Radar
Observation Category:	Solar System
Total Time Requested:	24 Hours
Minimum Useful Time:	Transmit window plus one hour.

Proposal Title: Radar Imaging of the Very Closely Approaching Asteroid 2007 TU24

ABSTRACT:

We propose radar imaging of the newly discovered asteroid 2007 TU24 on Jan 27 and 28 and Feb. 1-4, 2008. This object's 1.4-lunar-distance approach on Jan. 29 is the closest for any known Potentially Hazardous Asteroid until 2027. Apart from its absolute visual magnitude (H = 20.1, implying a diameter ∼0.3 km if it has a typical S-class albedo), nothing is known about TU24's physical properties, but the expected echo signal-to-noise ratios (SNRs) almost certainly will suffice for 7.5-m-resolution imaging on our requested dates. Our objective is to obtain images with as much orientational coverage as possible and then to use them to construct a detailed physical model. On Jan 29, this object will be closer than any object observed at Arecibo to date. We will propose for bistatic observations receiving either at GBT or Goldstone on Jan 27 and 28, but they are not required for a successful experiment.

Name	Institution	E-mail	Phone	Student
Steven J Ostro	Jet Propulsion Laboratory	ostro@reason.jpl.nasa.gov	818-354-3173	no

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

2380 MHz