

### Technical Page

Proposal Type: Regular  
General Category: Planetary Radar  
Observation Category: Solar System  
Total Time Requested: 36 Hours

**Proposal Title:** S-Band Radar Observations of Iapetus

*ABSTRACT:*

We are requesting eight days of S-band radar observations of Saturn's moon Iapetus to measure the bulk radar scattering properties of its leading and trailing hemispheres. The optical albedo of these regions varies by more than a factor of 10, with the latter composed of bright water ice and the former covered with a very dark, unknown material. Comparison of the radar properties of these two hemispheres will provide new clues toward the identification of the dark material and its origin. This work is the logical follow-up to our initial detection of the bright hemisphere during last Saturn opposition, which indicated that Iapetus' scattering properties are unlike those of the icy satellites of the Jupiter system. The proposed eight days are divided into two sessions separated by 40 days, or half Iapetus' orbital period.

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#### Service Observing Request

#### Remote Observing Request

None

All of the observing run.

Part of the observing run.

Queue Observing

No

Maybe

Yes

#### Instrument Setup

S-Band radar

S-band receiver

#### Atmospheric Observation Instruments:

**Special Equipment or setup:** none

#### RFI Considerations

#### Frequency Ranges Planned