

### Technical Page

Proposal Type: Regular  
 General Category: Planetary Radar  
 Observation Category: Solar System  
 Total Time Requested: 20 Hours  
 Minimum Useful Time: 4 hrs

**Proposal Title:** S-band radar mapping of Saturn’s rings.

*ABSTRACT:*

We propose to continue radar imaging of Saturn’s rings using the S-band solar system radar as the opening angle of the rings,  $B$ , decreases to  $8^\circ$  in February 2008, lower than any elevation we have previously observed. These observations are needed to test the theoretical prediction that the strong azimuthal asymmetry we have observed in the A ring will reach a maximum amplitude when  $B \simeq 12^\circ$ . We will also continue to characterize the unexpectedly steep decline in normalized radar cross-section with increasing elevation angle observed in 1999 – 2007. In 2008 we are also requesting simultaneous observations at the GBT, which will both double the overall SNR achievable as Saturn moves south and provide a robust backup option in the event of recoverable transmitter problems at Arecibo.

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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:** We would like to use both the CBR and PFS for data recording.

### RFI Considerations

## Frequency Ranges Planned

2360-2400