

Technical Page

Proposal Type: Urgent
 General Category: Planetary Radar
 Observation Category: Solar System
 Total Time Requested: 6.5 Hours

Proposal Title: Faraday Rotation of the Cassini S-Band transponder from Solar Corona
ABSTRACT:

Coordinate observations using the UltraViolet Coronagraph Spectrometer (UVCS) instrument on SOHO and Faraday rotation observations using Cassini’s S-band radio frequency carrier can provide valuable measurements of solar coronal plasma. The UVCS instrument is capable of measuring velocity, electron density, and temperature of the coronal plasma while the Cassini radio frequency data can measure the change in electron density and magnetic field. This study is very important because my results from previous Faraday rotation observations suggests the thermal and magnetic forces in the solar wind are balancing each other; however, without the temperature measurement, I cannot calculate the thermal pressure. This is an exciting opportunity for coronal physics research. We have received support to enable the S-band on Cassini to be operational during the conjunction and secured time on the SOHO/UVCS instrument. If possible, we would like to schedule a viewing opportunity on August 6 from 1515 to 1758 UTC, August 7 1511 to 1755 UTC, and/or August 8 from 1508 to 1751 UTC.

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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 receiver S-low

Atmospheric Observation Instruments:

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned