

Technical Page

Proposal Type: Regular
 General Category: Terrestrial Aeronomy
 Sub-Category: Radar
 Observation Category: Plasmasphere
 Total Time Requested: 120 Hours
 Minimum Useful Time: 8 hours (beginning at 16 UTC)

Proposal Title: Comprehensive Ionospheric Characterization Within Storm Enhanced Density Source Regions

ABSTRACT:

The initial phases of geomagnetic disturbances often cause pronounced enhancements of electron density and total electron content (TEC) at mid and low latitudes. The location of the Arecibo incoherent scatter radar at 30 deg geomagnetic latitude puts it in a prime position to observe the development of enhanced equatorial anomalies and electric fields in the source region for mid-latitude storm enhanced density. These mechanisms and structures are of great significance to magnetosphere/ionosphere coupling studies and the equatorial/mid/high latitude storm time system. Arecibo radar measurements as part of a coordinated multi-instrument observation strategy would quantify the ion composition, plasma parameters, and inner plasmasphere electric field drivers / plasma transport as disturbance events progress.

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Remote Observing Request

- Observer will travel to AO
- Remote Observing
- In Absentia (instructions to operator)

Instrument Setup

430 G 430 CH radar

Atmospheric Observation Instruments:

Fabry-Perot Ionosonde

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned