Proposal Identification No.: T1890 Date Received: 2004-Oct-01_13:03:10

Technical Page

Proposal Type:	Regular
General Category:	Terrestrial Aeronomy
Sub-Category:	Radar
Observation Category:	Exosphere
Total Time Requested:	288 Hours

Proposal Title: Coupled Ionosphere/Thermosphere/Exosphere/Plasmasphere neutral density measurement initiative: altitude slice

ABSTRACT:

This project continues an initiative to characterize the composition and dynamics of the upper thermosphere, exosphere, and topside ionosphere at mid-latitude. By utilizing optical, infrared (IR), and radar frequency remote sensing techniques, in close association with radiative transport, photoelectron, neutral atmosphere, and ionospheric modeling, this project intends to produce a comprehensive description of an altitude slice from the upper thermosphere to the lower exosphere. Because the ground-based capability demands reconciliation of known coupling mechanisms between the thermosphere, exosphere, ionosphere, and plasmasphere, a particular focus of the research is to improve our understanding of ion-neutral coupling in the topside F-region. Specific project goals include evaluating the statistical accuracy of contemporary models of thermosphere ionosphere coupling, constraining the O-O+ collision frequency, and investigating energy balance in the region.

Name	Institution	E-mail	Phone	Student
Lara S Waldrop	Arecibo Observatory	lara@bu.edu	217-390-0797	no

Service Observing Request

- [X] None
- [ ] All of the observing run.
- [ ] Part of the observing run.
- [ ] Queue Observing

Remot e Observing Request

- [X] No
- [ ] Maybe
- [ ] Yes

Instrument Setup

430 CH receiver 430 CH radar

Atmospheric Observation Instruments:

Tilt-Photometer Fabry-Perot

Special Equipment or setup: I request that at least 25% of the ISR topside observations be conducted in the dual beam mode.

RFI Considerations

Frequency Ranges Planned