Proposal Identification No.: T2291 Date Received: 2006-Oct-02_03:49:12

Technical Page

Proposal Type:	Regular
General Category:	Terrestrial Aeronomy
Sub-Category:	Radar
Observation Category:	Thermosphere
Total Time Requested:	72 Hours
Minimum Useful Time:	12 hours

Proposal Title: Detailed Study of Thermospheric Gravity Waves at Arecibo with Extended Latitude Coverage

ABSTRACT:

The proposed study follows up on previous thermospheric gravity wave observations made at Arecibo Observatory under quiet geomagnetic conditions. The past work entailed a collaboration among scientists at Penn State University, Arecibo Observatory, Geospace Research, Inc. and other institutions. The proposed project is aimed at expanding our optical database at Arecibo and including additional facilities that will simultaneously operate during the Arecibo measurements. These are the Millstone Hill Radar, the associated CCD imaging facility operated by Boston University, and the SuperDARN radar to be used for polar measurements. The objective is to determine whether gravity-wave induced traveling ionospheric disturbances (TIDs) consistently observed at high geomagnetic latitudes under quiet geomagnetic conditions are at all related to the continuum of thermospheric waves observed at Arecibo. The source of the Arecibo waves remains unsettled despite the fact that we have been able to better quantify the nature of the neutral perturbations. The omnipresence of nominally the same thermospheric waves at Arecibo appears to defy theoretical explanation.

Name	Institution	E-mail	Phone	Student
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Remote Observing Request

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

Instrument Setup

430 G 430 CH receiver 430 CH radar

Atmospheric Observation Instruments:

Fabry-Perot Ionosonde

Special Equipment or setup: No special hardware, software, or recording media is needed.

RFI Considerations

Frequency Ranges Planned

429.5 MHz - 430.5 MHz