Technical Page

Proposal Type: Regular
General Category: Terrestrial Aeronomy
Sub-Category: Radar
Observation Category: Solar System
Total Time Requested: 72 Hours

Proposal Title: A Year Study of the Sporadic Micrometeor Flux into the Upper Atmosphere and the Distribution of Dust at 1 AU

ABSTRACT:

We propose to study the annual variations of the micrometeor flux and associated ionospheric effects utilizing the 430 MHz Arecibo radar. In addition, using the same observations, we propose to study the seasonal structure of distribution of dust at 1 AU as well as the dependence on the location of Jupiter as it progressively moves across the track of the interstellar particle (ISP) flux detected at AO [Meisel, Janches and Mathews 2001]. These observations employ the 430 MHz radar that will be operated in the ISR/Meteor mode, that is 10 sec ISR / 50 sec meteor, technique that already has provided with excellent results both in the aeronomical as well as the astronomical aspects of meteor science (Mathews et al 1997; Janches et al. 2000a,b; Janches, Meisel and Mathews 2001; Mathews et al. 2000; Meisel, Janches and Mathews 2001). These observations will allow us to better characterize the order microgram particles we have observed largely during November periods. The main goal of the proposed observations is to measure the variation of the peak of the daily sporadic meteor storm suggested by Janches et al. (2000b) and Mathews et al. (2001). This peak occurs at sunrise (near apex-crossing). As an additional result of these observations we will study the orbital properties hoping to identify sporadic micrometeor sources as well as obtain the annual influx of interstellar objects.

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<tr>
<th>Name</th>
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I do NOT want to do remote observing.

Instrument Setup

430 CH receiver  430 CH radar

Atmospheric Optical Instruments:

Lidar

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned

This proposal requires coordination with AFTWF within the band 425-435 MHz.