

Technical Page

Proposal Type: Regular
 General Category: Terrestrial Aeronomy
 Sub-Category: Radar
 Observation Category: Thermosphere
 Total Time Requested: 144 Hours
 Minimum Useful Time: 24 hrs

Proposal Title: A Proposal for 430 MHz Radar Meteor Observations during January and June with two scientific goals: a) Study of the uniformity of the Interplanetary Dust Distribution on the Ecliptic Plane and b) Study of the diurnal behavior of the gyro resonance line

ABSTRACT:

We request observing time with the 430 MHz radar during June and January in high resolution meteor detection mode. These observations will be used to address two independent scientific projects with the involvement of two graduate students. The first scientific goal is to determine the uniformity of the interplanetary dust distribution on the ecliptic plane. Previous observing results have shown that the meteor rate detected during January and June are almost 40 percent higher than what it is expected from modeling if the dust distribution is uniform along the ecliptic plane. The observations proposed here will help understanding if the unusually higher detected rates are a real features of the dust distribution or simply an observational anomaly. Understanding accurately the Meteor Input Function (MIF) is required to completely account for the sources of meteoric material in the upper atmosphere which is responsible for the formation of metallic layers observed by lidars. We will also use these observations to study the gyro resonance line in the E and F1 ionospheric region. Recently Janches and Nicolls, (2007) have shown that the observing methodology applied for meteor studies provides also with unprecedented time and altitude resolution for the study of this feature of the Incoherent Scatter spectra in this atmospheric region.

Name	Institution	E-mail	Phone	Student
Diego Janches	NWRA/CoRA Div.	diego@cora.nwra.com	303-415-9701x228	no

Remote Observing Request

- 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:

Ionosonde

Special Equipment or setup: none

RFI Considerations

Frequency Ranges Planned