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# Collaborative Research: Synergistic Merging of Traditional Aeronomy with Targeted High-Frequency (HF) Heating Diagnostics

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## Data Management Plan

Please briefly describe (what, where, when) the data that will be produced by this project.

Digital incoherent scatter radar data will be acquired at Arecibo Observatory, Puerto Rico during the first 15 months of this project. In addition CCD optical imaging data and Fabry-Perot data will be acquired with the Arecibo on-site optics during the same observing period as that of the radar. Finally special purpose high-frequency (HF) receiver systems will be deployed at Arecibo Observatory and used to detect backscatter signals generated by the Arecibo High-Power HF facility. The HF measurements will be made during months 8 through 15 of this project.

Are the data (check all that apply)?

New observational data       Other (physical samples, software, curriculum materials, etc)

New results from model(s)

generated from previous observations or models

Approximately how much data will be produced each year?

The incoherent scatter radar will generate approximately 20 TB of raw data per year. The optical/HF receiver diagnostics combined will produce ~ 200 GB of data per year. Data will be acquired for 1.25 years.

What meta-data will be part of the data sets produced?

None

How will data be made available to other researchers? To the general public?

	Other researchers?	Public?
Plots from web site	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Digital data from web site	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ftp download	<input checked="" type="checkbox"/>	<input type="checkbox"/>
email requests	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Other (please explain)

If digital data will be made available what file format(s) will be used (ex: HDF5, NetCDF)

File formats?

The raw radar data are IEEE 16 bit complex integer data. The processed data will become part of the Madrigal database in simple column ascii and will also be available as MATLAB MAT files at Geospace Research, Inc. The optical data will also be placed in the Madrigal database as simple column ascii data and gif image files. The HF receiver data are 16 bit integer "real" data that are processed into MAT files at Geospace Research, Inc.

## Data Management Plan - pg 2

How long do you expect to keep the data private before making it available? If applicable, provide description of policies for the protection of proprietary data, privacy and confidentiality, and intellectual property. Please explain if different data products will become available on different schedules (ex: raw data vs processed data, observations vs models, etc.)

By policy, all Arecibo Observatory raw data and processed data becomes available to other potential users 18 months after the data are acquired. The raw and processed data acquired with the special purpose HF receivers will also become available to outside users 18 months after the data is recorded.

Describe policies (if any) for re-use, re-distribution and production of derivatives

Published data figures are subject to journal copyright rules, and the corresponding publications will be accessible on the web site. Beyond that, there are no restrictions on data usage.

How long do you expect the data be available after the funding for the project has ended? Will it be archived somewhere for long term archiving and curation?

Geospace Research, Inc. has successfully archived its past data for more than 20 years at its office building in El Segundo, California. Ten GB of data from 1998 have recently been processed with no read errors. Similarly, we expect to archive the data from the proposed work for greater than 20 years. The modern hard drives used for data acquisition do not require the transfer of data to other media in the Geospace Research, Inc. storage environment. The data are documented and indexed and can readily be retrieved. Our practice is to acquire and archive data on 2 TB external drives. Data copies are used for the web site.

Additional comments

There are no additional costs in implementing this data management plan.