

Project Details

ROSES ID: NRA-00-OSS-01

Selection Year: 2001

Program Element: Independent Investigation: LWS

Project Title:

Studies of Solar-Terrestrial Influences Using a Whole Atmosphere Community Circulation Model

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Summary:

The NCAR Whole Atmosphere Community Climate Model (WACCM) is a global model of the entire atmosphere from the ground to lower thermosphere (140 km) that has been designed to investigate solar-terrestrial coupling and climate issues. The model will eventually extend to 500 km. The model is an integration of three proven and well tested models, 1. The NCAR Climate Systems Model (CSM), 2. the NCAR Thermosphere - Ionosphere - Mesosphere - Electrodynamics General Circulation Model (TIME-GCM) and 3. The Model for Ozone and Related Chemical Tracers (MOZART). The WACCM has now been successfully run for over a year. We propose to use this coupled chemical/dynamic model to investigate solar-terrestrial couplings throughout the entire atmosphere. It will use measured solar UV fluxes and variable auroral inputs to drive the model and the results will be compared with UARS, TIMED and other satellite and ground-based data. It will be used to investigate how deep into the highly variable Earth's atmosphere do solar-terrestrial effects penetrate and determine whether they influence climate and global change processes.

Publication References:

no references