

Project Details

ROSES ID: NRA-01-OSS-01

Selection Year: 2002

Program Element: Independent Investigation: Geospace LWS

Project Title:

Integrated Numerical Simulation of the Solar-Terrestrial Environment for the Living with a Star Program

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Summary:

We propose to develop a general purpose software framework capable of linking the diverse simulation codes needed to model the solar-terrestrial environment from the base of the solar corona to the atmosphere of the earth. We will test and prototype use of this framework with a complete set of the leading codes in solar-terrestrial research through simulation of several data driven events. Such a computational infrastructure, in concert with new observational platforms and instruments, will be essential for the success of the Living with a Star program. A joint team of simulation modelers and computer scientists with experience in large-scale code coupling will work together on this project. This is a major undertaking that will produce major advances. The benefits to the LWS program will include: Development and testing of a robust software framework capable of linking the simulation codes selected for LWS Integrated simulations from the corona to the upper atmosphere for several CME/magnetic storms and other geoeffective events. Understanding of the observations needed to run and validate the integrated codes. Understanding of the data system requirements to supply input to the codes and store their output.

Publication References:

Summary: "

Reference: Integrated Simulation of the S-T Environment - Goodrich, Charles C. Bos U