

Project Details

ROSES ID: NRA-01-OSS-01

Selection Year: 2002

Program Element: Independent Investigation: Solar Helio LWS

Project Title:

An Investigation of the effect of solar variability and particle ionization on the Earth's middle atmosphere

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Summary:

Upper atmospheric (upper stratosphere, mesosphere, thermosphere) variability is caused by processes related to the Sun and the magnetosphere from above, and natural and anthropogenic forcing from below. Changes in mesospheric composition, including NO_x, ozone and temperature result from the complicated interactions of these forcings. We will use two and three-dimensional models to explore the known history of upper atmosphere changes with the goal of separating the natural from the anthropogenic. . We propose a model study of atmospheric properties, as influenced by known forces, including the 11-year solar variability, and a rigorous comparison with the available satellite and ground-based data sets. This study is made possible by the availability of data sets on atmospheric composition and structure extending back in time.

Publication References:

no references