

Project Details

ROSES ID: NRA-01-OSS-01

Selection Year: 2002

Program Element: Independent Investigation: Solar Helio LWS

Project Title:

Sources of Solar Irradiance Variability: 200-400nm

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Summary:

The proposed research will examine the sources of solar spectral irradiance variability in the 200-400 nm wavelength range and how the variability of these sources impacts our ability to explain the observed full-disk spectrum. This will involve the analysis of high resolution (~ 0.01 nm) spectral observations made by the NRL HRTS-9 rocket and SKYLAB spectrograph. The HRTS observations have a spatial resolution of ~ 1 arc-second and the SKYLAB spectra are averaged over spectrograph slit ($\sim 60 \times 1$ arc-second²). The three main topics to be examined in this study will be: (1) Use a 3-component model with HRTS-9 plage and sunspot contrast to estimate solar spectral irradiance variability in the region near MgII (283 $\pm$ 3 nm) and compare with SUSIM and SOLTICE observations. (2) Use SKYLAB spectral observations in the 200-400 nm range to determine wavelength dependent contrast of plage and contrast variation within the quiet sun. (3) Use above model to compare predicted vs observed intensity over 200-400 nm range.

Publication References:

Summary: "

Reference: Sources of Solar Irradiance Variability: 200-400nm - Morrill, Jeff S. NRL