The Antarctic, Boulder, and Mauna Loa Ultraviolet (UV) Monitoring Program Update

P. Disterhoft[1], E. Dutton[2] and S. Stierle[1]

[1]Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, CO 80309; 303-497-6355, E-mail: patrick.disterhoft@noaa.gov
[2]NOAA Earth System Research Laboratory, Boulder, CO 80305

The Radiation group of NOAA's Global Monitoring Division operates five UV monitoring stations. Three in Antarctica, one in Boulder, Colorado and one at the Mauna Loa Observatory, Hawaii. The Biospherical Instruments Inc-built spectroradiometers at the three stations in Antarctica have recorded more than 23 years of spectral UV and visible data. The NIWA-built spectroradiometers at the stations in Boulder and Mauna Loa have both acquired more than 12 years of data. Data from all five stations are used to advance radiative transfer studies and effects on plants and animals. Here we present some recent preliminary results on a study to validate recent work published on unexpected spectral variability found in the Solar Irradiance Monitor's data on the SOURCE satellite experiment in the waning years of solar cycle 23, 2004 to 2007. Data from both the Mauna Loa and south pole spectroradiometers was chosen due to low aerosols found at these sites. Data were chosen to duplicate the time periods chosen in the published studies. Additional data were chosen during maximum and minimal sunspot activity to determine their effects on the possible spectral changes in solar output.

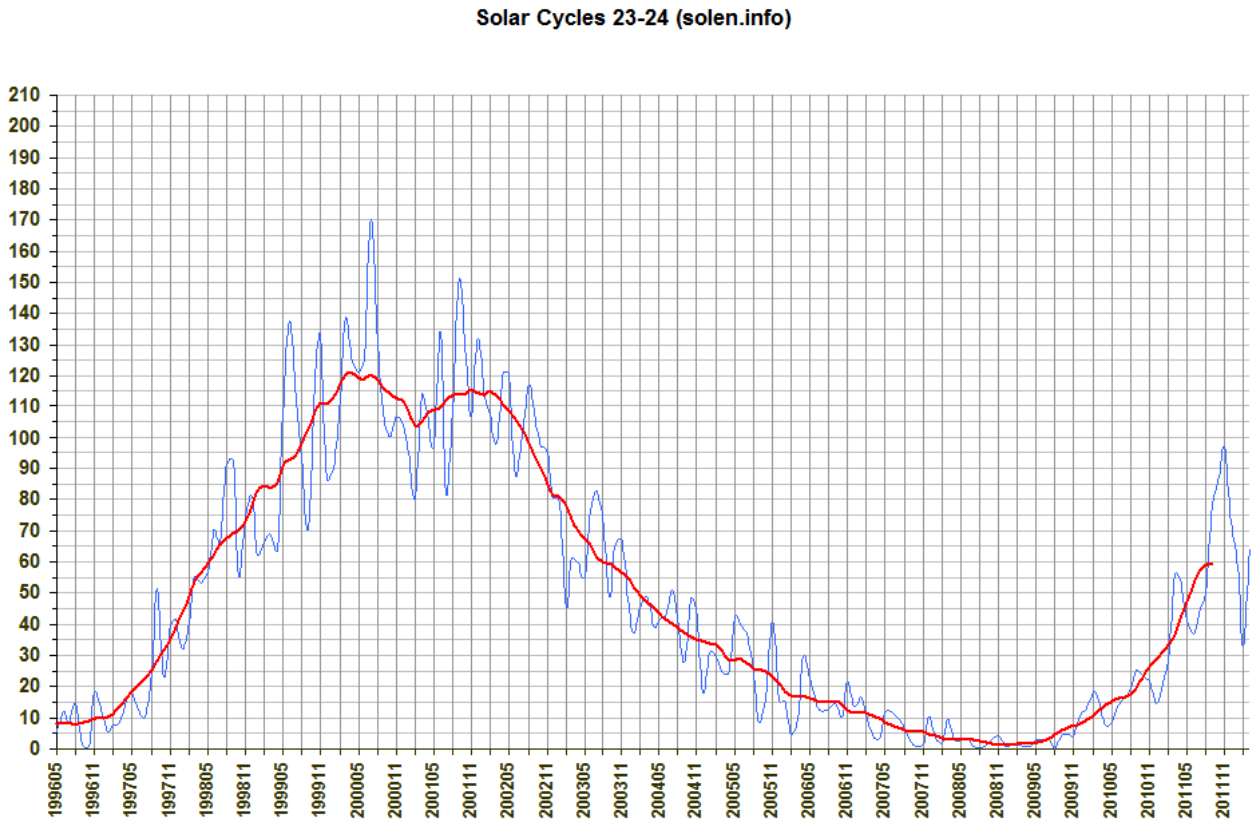

Figure 1. Sunspot activity during solar cycle number 23-24 (graph from http://www.solen.info/solar/solcycle.html).