

Maintaining the Solar UV Database in the 21st Century

Matthew T. DeLand [matthew_deland@ssaihq.com] and Richard P. Cebula, Science Systems and Applications, Inc. (SSAI), Lanham, MD; Linton E. Floyd, Interferometrics, Inc., Herndon, VA; Thomas N. Woods, LASP, University of Colorado.

Measurements of solar ultraviolet irradiance are currently plentiful. Observations from the UARS SUSIM and SOLSTICE instruments have ended after providing more than 13 years of calibrated irradiance data. Measurements from the SORCE SOLSTICE and SIM instruments overlap the UARS data record, and are expected to yield significant improvements in long-term accuracy. The SEE instrument on the TIMED satellite provides daily spectral measurements in the EUV wavelength region. The Mg II index product derived from SBUV/2 solar data is used operationally by NOAA to improve space weather forecasts. The TSIS instrument package on the NPOESS satellites will continue the heritage of SORCE SIM measurements when it launches in 2011. However, it is uncertain whether the SORCE satellite will operate until TSIS is launched. SBUV/2 spectral irradiance measurements are expected to continue beyond 2010, but these instruments do not directly track their long-term instrument sensitivity changes. We will discuss options for continuing the 27-year spectral UV irradiance data record. We will also discuss whether synthetic irradiances generated from solar activity proxies such as the Mg II index and sunspot area would be sufficient to fill a gap between SORCE and NPOESS data.