

Solar Spectral Irradiance Measurements from the TSIS-1 SIM: Data continuity and comparisons to other records

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The Total and Spectral Solar Irradiance Sensor (TSIS-1) launched on December 15th, 2017 and was integrated on the International Space Station (ISS). The TSIS-1 SSI observations began in March 2018 with an improved version of the LASP Spectral Irradiance Monitor (SIM). Extensive advances in both instrument design and new spectral irradiance calibration techniques have resulted in the TSIS-1 SIM being the most accurate space-borne SSI radiometer to date (continuous 200 – 2400 nm *SI*-traceable spectral absolute uncertainties < 0.5%). We now have nearly two years of continuous operations during a time period of solar minimum conditions. This has provided a unique opportunity to compare to the SORCE SIM end-of-mission SSI data as well as other SSI data records, including the European SOLAR SSI data and new Compact Spectral Irradiance Monitor (CSIM) CubeSat mission record. With the improvements in the long-term stability corrections of TSIS SIM over the previous SORCE SIM we have an SSI data record that will improve solar spectral irradiance models.