Soft X-ray Irradiance Measured by the Solar Aspect Monitor on the Extreme Ultraviolet Variability Experiment

Lin, Cissi Y. (1), incen@vt.edu, Scott Bailey (2); Andrew Jones (3); Don Woodraska (3); Thomas N. Woods (3); Frank G. Eparvier (3); and Amir Caspi (3).
(1) University of Texas at Arlington, TX, USA.
(2) Virginia Tech, Blacksburg, VA, USA
(3) LASP, University of Colorado, Boulder, CO, USA

The Solar Aspect Monitor (SAM) is a pinhole camera on the Solar Dynamics Observatory (SDO) Extreme-ultraviolet Variability Experiment (EVE). SAM projects the solar disk onto the CCD through a metallic filter designed to allow only solar photons shortward of 7 nm to pass. Contamination from energetic particles and out-of-band irradiance is, however, present. We present a technique for isolating the 0.1 to 7 nm integrated irradiance from the SAM signal to produce broadband irradiance for the time period of the SAM observations. The results of this analysis agree with the zeroth-order product from the EUV SpectroPhotometer (ESP) – a separate instrument on EVE and has a photodiode measuring the same bandwidth – within 25%. We also present the photon event detection algorithm and its application toward spectral irradiance and feature studies.