



The EUV Variability Experiment (EVE) on the NASA Solar Dynamics Observatory (SDO): The Next Generation of Solar EUV Spectral Irradiance Measurements

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The solar extreme ultraviolet (EUV) irradiance is a primary energy input for the thermosphere and ionosphere, so variability in the solar EUV can drive variability in space weather. The EUV Variability Experiment (EVE) on the upcoming NASA Solar Dynamics Observatory (SDO) mission will provide measurements of the solar EUV irradiance starting in 2009 and extending through its nominal five year mission. EVE will make nearly continuous measurements of the solar irradiance from 0.1 to 105 nm, plus the hydrogen Lyman-alpha at 121.6 nm at a time cadence of 10 seconds, with a resolution of 0.1 nm for 5-105 nm and 1 nm elsewhere, and with an accuracy of better than 25% throughout the duration of the mission. SDO will be in a geosynchronous orbit, allowing for nearly continuous measurements of the Sun. This presentation will provide an overview of the EVE instrument and measurements and detail the planned data products that will be made publicly available to the space weather community. Results from an April 2008 solar minimum sounding rocket flight of the prototype EVE instrument will also be shown.