



The Ultraviolet Sensor on REMS/MSL as a detector of high solar activity events

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The Ultraviolet sensor (UVS) on the Rover Environmental and Meteorological Station (REMS) in the Curiosity rover is monitoring, daily, the down-welling UV irradiance reaching the surface of Mars. The UVS consists of one SiC photodiode measuring the UV spectrum from 200 to 400 nm. Obviously these photodiode detections are at LMST daytime in Gale, the site where Curiosity is operating, providing valuable measurements with implications for habitability, and atmospheric and surface photochemistry modelling. Nevertheless after carefully analysis of nighttime UVS measurements, where “zero” values should be expected, we have found an interesting application of them: the detection of solar events. Actually we present sporadic UV total dose non-zero values measured by REMS that are correlated with high solar activity events. A correlation between these measurements and Sounding of the Atmosphere using Broadband Radiometry (SABER) and the Solar EUV Experiment (SEE) measurements on the NASA’s TIMED platform is presented.