

Life Sciences as Related to Space (F)

Space Radiation - Dosimetric Measurements and Related Models, Radiation Detector Developments and Ground-based Characterisation (F2.3)

## **IMPLICATIONS OF THE SEPTEMBER 2017 SOLAR PARTICLE EVENT FOR HUMAN EXPLORATION OF MARS**

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Although the Sun is approaching solar minimum, a series of large solar particle events (SPEs) occurred in September 2017 that impacted both Earth and Mars. In particular, the event of 10 September 2017 was the largest event that RAD has seen on the surface of Mars since it landed in 2012. Due to the modulating effect of the Martian atmosphere, the shape and intensity of these SEP spectra will differ significantly between interplanetary space and the Martian surface. Understanding how these SEP events influence the surface radiation field is crucial to assessing associated health risks for potential human missions to Mars. We will discuss in this talk the dosimetric quantities measured by MSL RAD before, during and after the Sept. 10 event, and their implications for potential human missions to Mars.

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