

**Space Science Seminar
Tuesday, 2023 March 7
10:30 a.m.
NASA/MSFC TEAMS**

From Sun to Martian Mud
Dr. Robert Loper / NASA/MSFC

Host: Dr. Alphonse Sterling (Sponsored by ST13)

“From Sun to Mud” is an expression that indicates the great domain of space weather including solar physics and the influence of the Sun on the plasma conditions in interplanetary space, the magnetosphere, and as far planetside as the ionosphere, which in turn influences the neutral atmosphere below. The Moon to Mars Space Weather Analysis Office (M2M) provides real-time space weather analysis, communications, and Research to Operations and Operations to Research (R2O2R) support for human spaceflight to the Moon and Mars. Dr. Robert Loper talks about several space weather events on his watch with M2M, including the first X-class flare of Solar Cycle 25, the October 2021 solar energetic particle (SEP) event, and the February 2022 geomagnetic storm that led to the Starlink mishap.

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