

SEMINAR ANNOUNCEMENT

Exploration of Mars

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Abstract: I will be speaking about my involvement and experiences with the Sojourner rover which was sent to Mars in 1997. The thrust of my work was electrostatic charging in the Martian environment. I predicted that the moving rover would accumulate triboelectric static charge from the Martian surface dust and could reach potentials relative to the environment that would result in gaseous discharges through the atmosphere. Such discharges could have the effect of producing spurious "commands" to the onboard computer system by causing transient voltage spikes in the chassis of the rover (also the reference ground for all on board electronics). My work got expended to predictions about naturally occurring Martian lightning by a chance discovery in the laboratory. Lightning has yet to be detected on Mars, but the appropriate conditions for it to occur can be predicted and, in fact, are present on the planet. Detection of Martian lightning has yet to be accomplished in Mars, but the die is cast. Evidence from Sojourner's operation on Mars gave good (if indirect) indication of charging similar to that observed in the laboratory on earth.

Thursday, February 11th, 2010

12:00 – 1:00 pm

Room SI 117

Pizza and refreshments will be served before the seminar.