Tuesday, February 27, 2018
HELIOPHYSICS: DUSTY PLASMAS — SMALL PARTICLES
3:50 p.m. Douglas Fir Meeting Room

Chair: Mihaly Horanyi

3:50 p.m. Malaspina D. M. * Horanyi M. Sternovsky Z.
Revolutionizing Our Understanding of Heliospheric Dust Dynamics from the Deep Space Gateway [#3010]
The Deep Space Gateway provides an opportunity for novel measurements of heliospheric nanometer dust grains, quantifying their interaction with the solar wind and leading to new advances in both dust physics and dust impact predictive capability.

4:00 p.m. Horanyi M. * Kempf S. Malaspina D. Poppe A. Srama R. Sternovsky Z. Szalay J.
Dust Measurements Onboard the Deep Space Gateway [#3169]
A dust instrument onboard the Deep Space Gateway will revolutionize our understanding of the dust environment at 1 AU, help our understanding of the evolution of the solar system, and improve dust hazard models for the safety of crewed and robotic missions.

4:10 p.m. Farrell W. M. * Orlando T. M. Dyar M. D. Hurley D. M. Hibbits C. A.
Jones B. M. McLain J. L.
Long Duration Exposure Platform (LDEP) [#3132]
We describe a facility to analyze material samples exposed externally to the harsh space plasma and meteoroid environment. We especially focus on examining any hydroxylation occurring within the top layers of the plasma-activated samples.

4:20 p.m. Wiens R. C. * Burnett D. S. Jurewicz A. Rieck K. Reisenfeld D. Kasper J. Clark B.
Solar Wind Sample Collection at the Deep Space Gateway [#3151]
A simple, long-term collection of solar wind at the Deep Space Gateway would provide new, higher-fluence samples to address a number of science objectives relating to solar abundances, solar physics, and heliophysics.

4:30 p.m. BREAK

4:40 p.m. Fries M. * Fisher K.
Direct Characterization of Comets and Asteroids via Cosmic Dust Analysis from the Deep Space Gateway [#3120]
The Deep Space Gateway can allow direct analysis of dust from over a dozen comets, using an instrument similar to the successful Cassini Dust Analyzer (CDA). Long-term measurements are preferred. Compositions of over a dozen asteroids and comets can be obtained.

DISC: Deep-Space Interstellar Dust Collector [#3037]
Deep Space Gateway presents an unprecedented opportunity to carry out an interstellar dust sample return mission with a collecting power sufficient to collect and return hundreds of tiny interstellar rocks to terrestrial laboratories.

5:00 p.m. Hu Z. W. *
What Could Be Learned from Phase Contrast X-Ray Nanotomography Analysis of Cosmic Dust Potentially Collected in Deep Space? [#3099]
Collecting cosmic dust in deep space would provide unbiased samples of primitive solar system materials for study. Nanotomography analysis of the most primitive dust particles would reveal direct new information on formation of our solar system.

5:10 p.m. DISCUSSION