



The dust environment of the Moon as seen by the Lunar Dust Environment Explorer (LDEX)

Mihaly Horanyi (1), Jamey Szalay (1), Sascha Kempf (1), Juergen Schmidt (2), Eberhard Gruen (1), Ralf Srama (3), and Zoltan Sternovsky (1)

(1) U. of Colorado, Boulder, United States (horanyi@colorado.edu), (2) U. of Oulu, FI-90014 Oulu, Finland, (3) U. at Stuttgart, 70569 Stuttgart, Germany

The Lunar Dust Experiment (LDEX) onboard the Lunar Atmosphere and Dust Environment Explorer (LADEE) mission (9/2013 - 4/2014) discovered a permanently present dust cloud engulfing the Moon. The cloud is non-spherical, showing higher densities in a direction canted towards the Sun from the lunar orbital motion. The size, velocity, and density distributions of the dust particles are consistent with ejecta clouds generated from the continual bombardment of the lunar surface by sporadic interplanetary dust particles. Intermittent density enhancements were observed during several of the annual meteoroid streams, especially during the Geminids. LDEX found no evidence of the expected density enhancements over the terminators where electrostatic processes were predicted to efficiently loft small grains