Geophysical Research Abstracts,
Vol. 11, EGU2009-9979, 2009
EGU General Assembly 2009

Dust Devils and vortices at the Phoenix landing site on Mars

H. P. Gunnlaugsson (1), M. D. Ellehøj (2), P. A. Taylor (3), J. Whiteway (3), M. T. Lemmon (4), L. K. Tamppari (5), L. Drube (2), C. Holstein-Rathlou (1), and M. B. Madsen (2)

(1) Institute of Physics and Astronomy, University of Aarhus, Ny Munkegade 120, DK-8000 Århus C, Denmark (hpg@phys.au.dk), (2) Niels Bohr Institute, University of Copenhagen, Denmark, Juliane Maries Vej 30, 2100 Copenhagen Ø, Denmark, (3) Centre for Research in Earth and Space Science, York University, Canada, (4) Texas A&M University, USA, (5) Jet Propulsion Laboratory, USA, (6) Lunar & Planetary Laboratory, University of Arizona, USA

Near continuous measurements of pressure and temperature by the MET instrumentation on the Phoenix Mars Lander [1] has been used to identify the passage of vertically oriented vortex structures at the Phoenix landing site (126W, 68N) on Mars. Some of these vortices reach horizontal wind speeds large enough for dust particles to be lifted off the surface and into the vortex and thus become *Dust Devils*.

From a ground based sensor, on the Phoenix Mars Lander, this signature will be a distinct pressure dip of the order of 20 seconds when the dust devil passes by. The temperature correspondingly increases during the passage of the dust devil.

In this work we characterize the convective vortices and dust devils at the Phoenix landing site from pressure signatures in the Phoenix MET pressure and temperature data, and compare the results to similar results from Mars Pathfinder pressure data [2]. Comparison of dust devil statistics with other data available allows will be discussed.

[1] P. Taylor, M. Daly, H. P. Gunnlaugsson, A-M. Harri, C. Lange, Temperature, Pressure and Wind instrumentation on Phoenix MET, J. Geophys. Res., 113 (2008) E00A10.

[2] J. R. Murphy , S. Nelli, Geophys. Res. Lett. **29** (2002) 18-1-4