Monday, March 23, 2009
PHOENIX: SOIL, CHEMISTRY, AND HABITABILITY
2:30 p.m. Waterway Ballroom 1

Chairs: **Suzanne Young**
Aaron Zent

2:30 p.m. Keller H. U. * El Maarry M. R. Goetz W. Hviid S. F. Markiewicz W. J. Hecht M. Madson M. Mellon M. Ming D. Pike W. T. Smith P. Staufer U. Zent A.
Physical Properties of the Icy Soil at the Phoenix Landing Site **[#1671]**
The physical properties of the icy martian soil documented by the robotic arm camera of the Phoenix lander are discussed. The soil is friable and porous. Its cohesiveness changes when separated from the ground, most probable due to sublimation of its spurious water content.

2:45 p.m. Zent A. P. * Hudson T. L. Hecht M. H. Cobos D. Wood S. E.
Mars Regolith Thermal and Electrical Properties: Initial Results of the Phoenix Thermal and Electrical Conductivity Probe (TECP) **[#1125]**
Initial results from the Phoenix Thermal and Electrical Conductivity Probe suggest the landing event disturbed the thermal properties of the regolith surface. H_2O is exchanged between the atmosphere and regolith, and observed both in RH and dielectric measurements.

3:00 p.m. Renno N. O. * Bos B. J. Catling D. Clark B. C. Drube L. Fisher D. Goetz W. Hviid S. F. Keller H. U. Kok J. F. Kounaves S. P. Leer K. Lemmon M. Madsen M. B. Markiewicz W. Marshall J. McKay C. Mehta M. Smith M. Smith P. H. Stoker C. Young S. M. M. Zent A.
Physical and Thermodynamical Evidence for Liquid Water on Mars **[#1440]**
We show independent physical and thermodynamical evidence that liquid saline-water exists in areas disturbed by the Phoenix lander and that the thermodynamics of freeze-thaw cycles leads to the formation brine layers. Thus, liquid saline-water might be common on Mars.

3:15 p.m. Kounaves S. P. * Catling D. Clark B. C. DeFlores L. Gospodinova K. Hecht M. H. Kapit J. Ming D. W. Quinn R. C. Phoenix Science Team
Aqueous Carbonate Chemistry of the Martian Soil at the Phoenix Landing Site **[#2489]**
The Wet Chemistry Labs on Phoenix gave pH, conductivity, ions, and evidence that the salts have previously interacted with water and contain high levels of carbonates. Carbonate results show the need for more extensive laboratory work and equilibrium modeling.

3:30 p.m. Hanley J. * Chevrier V. F. Altheide T. S.
Low Temperature Aqueous Perchlorate Solutions on the Surface of Mars **[#1380]**
Perchlorates may hold the key to finding liquid water on Mars. We demonstrate that Mg- and Na-perchlorate solutions can have low evaporation rates and high stability on the martian polar surface.

3:45 p.m. Davis B. L. * Chevrier V. F. Altheide T. S. Swaffar C.
Reflectance Spectra of Low-Temperature Chloride and Perchlorate Hydrates and their Relevance to the Martian Surface **[#1387]**
Reflectance spectra of chloride and perchlorate hydrates were measured, since they are thermodynamically more stable than their anhydrous counterpart under Mars low-temperatures. Results show that these hydrates show specific spectral features.

4:00 p.m. Archer P. D. Jr.* Imanaka H. Smith M. A. Ming D. W. Boynton W. V. Smith P. H.
UV Photolysis of Mellitic Acid — A Possible Organic at the Mars Phoenix Landing Site **[#2077]**
The Phoenix lander is the first mission since Viking that could detect organics. Mellitic acid is a possible decay product of meteoritic organics. We irradiate mellitic acid with UV, producing a residue to analyze and compare to Phoenix results.

4:15 p.m. Young S. M. M. * Stoker C. R. Hecht M. H.
Polar Mars Biohabitability Assessment of the Wet Chemistry Analysis on the 2007 Phoenix Mars Scout Mission **[#1178]**
The Phoenix Mars mission included ions analysis by the Wet Chemistry Lab. One mission objective was to address biohabitability through water, energy sources, and subsurface bio-hostility. WCL experiments contribute much to these discussions.

4:30 p.m. Stoker C. R. * Archer P. D. Jr. Catling D. Clark B. Marshall J. Smith P. Young S. Phoenix Science Team
The Habitability of the Phoenix Landing Site: A Comparative Assessment **[#2082]**
We evaluate the habitability north polar region of Mars based on the results of the Phoenix mission and show that the region has greater habitability and potential for detecting life than other sites visited by Mars landers.