

**Thursday, July 12, 2007**  
**MARS ASTROBIOLOGY AND UPCOMING MISSIONS**  
**2:00 p.m. Beckman Auditorium**

**Chairs: D. J. Des Marais**  
**P. Christensen**

- 2:00 p.m. INTRODUCTORY THEMES – FRAMING THE SESSION
- 2:05 p.m. Des Marais D. J. \* Cabrol N. Athena Science Team  
*Assessing the Potential for Ancient Habitable Environments in Gusev Crater, Mars* [#3363]  
 Observations by Spirit indicate that liquid water, nutrients and sources of chemical energy might have been simultaneously available to sustain habitable conditions in subsurface Columbia Hills materials some time in the distant (Noachian?) past.
- 2:20 p.m. Eigenbrode J. \* Dworkin J. P. Fogel M. Glavin D. P. Mahaffy P. Steele A. Summons R. E.  
*Recognizing Life from a Distance: Organic Biosignatures of Modern and Ancient Life* [#3380]  
 Compositional diversity of amino acids and lipid-like hydrocarbons, patterns within compound classes and organic relation to geological parameters will, together, provide a package of unambiguous chemical information to assess the origin(s) of organics on Mars on future missions.
- 2:35 p.m. Thomas-Keprta K. L. \* Clemett S. J. McKay D. S. Gibson E. K.  
 Wentworth S. J. FEI Corporation  
*Reassessment of the "Life on Mars" Hypothesis: Origin of Carbonate-Magnetite Assemblages in Martian Meteorite ALH84001* [#3333]  
 We present here the most detailed and comprehensive TEM analyses of the ALH84001 carbonate disks yet obtained. The results indicate that the disks show a subtle complexity that is incompatible with current "simple purely inorganic processes."
- 2:50 p.m. Gibson E. K. \* McKay D. S. Thomas-Keprta K. L. Clemett S. J. Wentworth S. J.  
*Conditions on Early Mars Might Have Fostered Rapid and Early Development of Life* [#3071]  
 The conditions on Mars during its first 600 Gy were suitable for biogenic activity to have occurred. Abundances of water, carbon, energy along with the operating geological processes fostered development of early life forms on Mars and they may be found beneath the surface today.
- 3:05 p.m. McKay C. P. \* Stoker C. R. Hecht M. H.  
*Astrobiology on Mars: Where to Go? What to Do?: Subsurface Sampling in the Polar Regions for Evidence of Past Life* [#3290]  
 The next important step for Astrobiology on Mars is subsurface access in the polar regions.
- 3:20 p.m. BREAK
- 3:40 p.m. Clegg S. M. \* Sklute E. C. Dyar M. D. Barefield J. E. Wiens R. C.  
*Quantitative Analysis of Samples with Variable Composition by Remote Laser-induced Breakdown Spectroscopy* [#3216]  
 The ChemCam instrument selected for the Mars Science Laboratory (MSL) rover includes a remote Laser Induced Breakdown Spectrometer (LIBS). This study discusses novel analysis techniques that compensate for the observed chemical matrix effects.
- 3:55 p.m. Conley C. \* Race M. S.  
*The Need for Integrating Planetary Protection Science into Mars and Lunar Human Exploration Planning* [#3172]  
 Recent Planetary Protection (PP) workshops have identified science, life support and environmental areas that have critical implications for robotic and human missions to Mars. Future mission planning must incorporate PP considerations from the earliest design stages to ensure mission success.

- 4:10 p.m. Smith P. H. \* Phoenix Science Team  
*The Phoenix Mission* [#3180]  
An overview of the next Mars mission lays out the strategy for exploring the mineralogy and chemistry of the northern plains near 70° latitude to understand the history of water in all its phases.
- 4:25 p.m. Arvidson R. E. \* Adams D. Bandfield J. Barge L. Barnes J. Boynton W. Christensen P. Friedson J. Gillespie A. Golombek M. P. Guinn J. Guinness E. Kass D. M. Kirk R. Knudson A. Malin M. McEwen A. Mellon M. Michaels T. Mushkin A. Mustard J. F. Paige D. Parker T. J. Pelkey S. M. Poulet F. Rafkin S. Rice J. Seelos K. Seelos F. Smith M. D. Smith P. H. Spencer D. Stein T. Tamppari L. Tyler D.  
*Overview of Mars Exploration Program 2007 Phoenix Mission Landing Site Selection* [#3204]  
This abstract focuses on site selection work for the 2007 Phoenix mission, including EDL-based requirements, analyses of candidate sites, and a summary of what has been accomplished to date.
- 4:40 p.m. Tamppari L. K. \* Cantor B. A. Friedson A. J. Ghosh A. Grover M. R. Hale A. S. Kass D. Martin T. Z. Mellon M. Michaels T. Murphy J. Rafkin S. Smith M. D. Smith P. H. Tsuyuki G. Tyler D. Wolff M.  
*Atmospheric Characteristics Expected at the Phoenix Landing Season and Location* [#3147]  
Both modeling and data analysis work to understand the atmospheric environment in the Phoenix landing region (65°–72°N) and season ( $L_s \sim 76$ –125) have been done to support the mission. These atmospheric characteristics will be reported at the meeting.
- 4:55 p.m. Golombek M. \* Grant J. Vasavada A. R. Watkins M. Lorenzoni L. Griffes J.  
*Preliminary Constraints, Plans and Proposed Landing Sites for the Mars Science Laboratory Mission* [#3037]  
Mars Science Laboratory science objectives (habitability), preliminary constraints (planetary protection and engineering), proposed and prioritized landing sites, imaging by orbiters, and plans for selection of the landing site are discussed.
- 5:10 p.m. MODERATED DISCUSSION
- 6:00 p.m. BANQUET AT THE ATHENAEUM