

**Thursday, March 10, 2011**  
**POSTER SESSION II: IMPACT PROCESSES ON MARS:**  
**GEOLOGY, MINERALOGY, AND ALTERATION**  
**6:00 p.m. Town Center Exhibit Area**

Farrand W. H. Bell J. F. III Clark B. C. Edgar L. A. Hayes A. G. Johnson J. R. Jolliff B. L.  
[\*Color Banding Within the Inner Rims of Craters in Meridiani Planum: Observations by the Opportunity Pancam and HiRISE\*](#) [#2359]

Light-toned bands near the tops of craters in Meridiani Planum observed by Opportunity and HiRISE are described. We discuss a possible diagenetic origin for these color bands and present results from Santa Maria Crater.

Gross C. Wendt L. Combe J.-Ph. Jodlowski P. Marzo G. A. Roush T. L. McCord T.  
 Halbach P. Neukum G.

[\*Investigation on a Pylosilicate-Bearing Crater in the Northern Plains of Mars\*](#) [#1875]

We investigate a ~50 km wide, complex impact crater in the northern plains of Mars for evidence of post impact hydrothermal activity.

Carter J. A. Poulet F. Loizeau D. Bibring J.-P. Murchie S.

[\*Impact Craters as Probes to Investigate the Upper Crustal Hydrous Mineralogy on Mars\*](#) [#2619]

Impact craters on Mars studied using CRISM data yield evidence for a possible vertical structure in the upper crust hydrous mineralogy.

Rogers A. D.

[\*Spectrally Distinct Crater Ejecta Materials in Tyrhena Terra, Mars\*](#) [#1310]

Using TIR and NIR data, mineralogical compositions of spectrally distinct crater ejecta materials are compared with surrounding surface compositions. Considerations for alteration processes are discussed.

Quantin C. Flahaut J. Clenet H. Allemand P. Thomas P.

[\*Composition and Structures of the Subsurface in the Vicinity of Valles Marineris as Revealed by Central Uplifts of Impact Craters\*](#) [#2342]

The central peaks of impact craters have been analyzed on both HiRISE and CRISM data to reconstruct the subsurface structure of the vicinity of Valles Marineris.

Huang L.-C. Zhu M.-H. Ip W.-H.

[\*The Thorium Distributions of Hellas Basin, the Large Impact Crater of Mars\*](#) [#2018]

We studied the Th content of Hellas with topographic and hydrological features, and hope to resolve related questions: the shift of the topographic and Th distribution boundaries, the geological processes experienced, or the effect of water leaching.

Irving A. J. Bunch T. E. Kuehner S. M. Herd C. D. K. Gellissen M. Lapen T. J.

Rumble D. III Pitt D.

[\*Petrologic, Elemental and Isotopic Characterization of Shock-Melted, Enriched Ultramafic Poikilitic Shergottite Northwest Africa 6342\*](#) [#1612]

This highly shocked ultramafic shergottite is the first such martian specimen with “enriched” compositional characteristics.

Schrader C. M. Cohen B. A. Donovan J.

[\*Ni, S, and Cl in EETA79001 Lithology C\*](#) [#2814]

We investigate EETA79001 impact melt using S, Ni and Cl — all strong indicator elements of martian soil. If soil is a contributor to Lithology C's S budget it should also contribute Ni and Cl. Our work suggests no soil component is necessary to explain the Lithology C composition.

Farah A. E. Min K.

[\*Phosphate \(U-Th\)/He Thermochronology of Zagami and ALHA77005 Martian Meteorites\* \[#2726\]](#)

We performed multigrain (U-Th)/He dating for 248 phosphate grains from Zagami and ALHA77005 martian meteorites. The most reliable ages of  $147 \pm 38$  Ma and  $11 \pm 6$  Ma were determined for Zagami and ALHA77005, respectively.

Greshake A. Fritz J. Boettger U.

[\*Ringwoodite in the Martian Shergottite Dar al Gani 670: The Role of Shearing\* \[#1092\]](#)

Lamellar ringwoodite is found in sheared olivine from the martian shergottite Dar al Gani 670. Composition and texture indicate diffusion-controlled heterogeneous nucleation of the ringwoodite along certain shear-induced defect planes in olivine.