Thursday, March 10, 2011
POSTER SESSION II: IGNEOUS GEOCHEMISTRY OF THE MARTIAN SURFACE
6:00 p.m. Town Center Exhibit Area

Byrnes J. M. Byrnes J. J.
Thermal Infrared Reflectance and Emission for Remote Analysis of Planetary Surfaces **[#2384]**
Establishing the utility and limitations of using thermal infrared reflectance and emission data together will allow leveraging of the beneficial aspects of each technique for studying the surfaces of Earth, Mars, and other rocky planetary bodies.

Jones E. Mills F. Doran B. Caprarelli G. Clarke J.
New Unsupervised Classification of the Martian Surface Into TES Thermal-Inertia Albedo Units **[#1093]**
We have utilized unsupervised classification algorithms to identify new features in martian surface materials through TES thermal inertia and albedo data.

Gasnault O. Newsom H. Pinet P. Mars Odyssey GRS Science Team
Update on Elemental Martian Provinces **[#2685]**
The Odyssey GRS maps were recently reprocessed. We check the implications on the definition of uniform provinces. Their compositions imply the presence of diverse igneous rocks, and suggest both local and regional sources for the surficial materials.

Teodoro L. F. A. Elphic R. C. Eke V. R. Roush T. L. Marzo G. A. Brown A. J.
Feldman W. C. Maurice S.
Characterizing the 3-D Water Distribution on the Mars Surface **[#2187]**
We present the most recent results of applying a Pixon image reconstruction approach to the Mars Odyssey epithermal neutron data coupled with information regarding the distribution of water and hydroxyls, including hydrous minerals, as identified by MRO-CRISM samples.

Francis D.
Columbia Hills — An Exhumed Layered Igneous Intrusion? **[#1085]**
The compositional variation exhibited by the analyzed rocks and outcrops of the Columbia Hills are better explained if they are intrusive cumulate rocks, whose compositions are controlled by magmatic crystal sorting, rather than volcanic pyroclastic rocks.

Cole S. B. Watters W. A. Squyres S. W.
Stratigraphic Relationships on Husband Hill, Mars **[#1159]**
We measure bedding plane orientations of outcrops on Cumberland Ridge in the Columbia Hills. Our measurements are consistent with the hypotheses that the outcrops (1) form a stratigraphic section, and (2) drape the Husband Hill edifice.

Weitz C. M. Bishop J. L. Thollot P. Mangold N. Roach L. H.
Diverse Mineralogies in Two Troughs of Noctis Labyrinthus, Mars **[#1724]**
We have used data from the Mars Reconnaissance Orbiter to map out hydrated units and infer the geologic history of two troughs in Noctis Labyrinthus that display a diversity of mineral assemblages.

Clenet H. Flahaut J. Quantin C. Pinet P. C. Daydou Y. Allemand P.
Compositional Diversity of Mafic Rocks in the Vicinity of Valles Marineris, Mars, Using Modified Gaussian Model **[#1674]**
We use adapted Modified Gaussian Model to extract information on the chemical composition of mafic minerals in the vicinity of Valles Marineris, Mars. First results on CRISM data on the northern wall of Coprates Chasma show complex mineralogies.

Flahaut J. Mustard J. F. Quantin C. Clenet H. Allemand P. Wilson J. H.
Evidence for Compositional Dikes Intruding the Emplaced and Preserved Noachian Crust in Valles Marineris, Mars **[#1830]**
We report here the occurrence of dikes in a remarkably preserved crustal outcrop in the walls of Valles Marineris. Dikes are analyzed for the first time with both HiRISE and CRISM, providing crucial information on magmatic processes in this area.

Brandenburg J. E.
Evidence for a Large, Natural, Paleo-Nuclear, Reactor on Mars **[#1097]**
On Mars, the ingredients for natural nuclear reactors were present. A large natural paleo-nuclear reactor may have operated on Mars in the N. Mare Acidalium and explosively disassembled, releasing ^{129}Xe and ^{40}Ar and a surface layer of Th and K .