

Wednesday, March 14, 2007
MARS SEDIMENTS AND GEOCHEMISTRY: THE MAP VIEW
1:30 p.m. Crystal Ballroom A

Chairs: **H. E. Newsom**
T. D. Glotch

- 1:30 p.m. Rossi A. P. * Neukum G. Pondrelli M. Zegers T. Mason P. Hauber E. Ori G. G. Fueten F. Oosthoek J. Chicarro A. Foing B.
The Case for Large-Scale Spring Deposits on Mars: Light-toned Deposits in Crater Bulges, Valles Marineris and Chaos [#1549]
 We investigate and propose the possibility of a common origin as spring deposits for various materials on Mars: light-toned deposits in Valles Marineris, crater bulges and chaotic terrains.
- 1:45 p.m. Chojnacki M. * Hynek B. M.
The Geologic Context of Water-altered Minerals in Valles Marineris [#2414]
 We investigated hematite and sulfate (polyhydrated sulfates and kieserite) sites throughout the Valles Marineris complex, with a variety of remote-sensing tools, in order to better understand the correlation between different mineral types and their likely origin.
- 2:00 p.m. Sowe M. * Hauber E. Jaumann R. Gwinner K. Fueten F. Stesky R. Neukum G.
Interior Layered Deposits in the Eastern Valles Marineris and Chaotic Terrains on Mars [#1568]
 Most interior layered deposits occur as isolated light-toned mounds but they vary in appearance. We show differences in morphology, elevation, relative thickness, and surface structure. We also present measurements in layer geometry.
- 2:15 p.m. Mangold N. * Gendrin A. Quantin C. Gondet B. Bibring J. -P. Ansan V. Masson Ph. Neukum G. OMEGA Team HRSC Co-Investigator Team
Sulfate-rich Deposits in West Candor Chasma [#1643]
 West Candor Chasma exhibits thick layered deposits on which sulfates are detected by the OMEGA spectrometer. Sulfate signatures are compared to local geology, albedo, thermal inertia, and slopes to discriminate the type of material.
- 2:30 p.m. Dromart G. * Quantin C. Broucke O.
Stratigraphic Architectures in Southern Melas Basin, Valles Marineris, Mars [#1089]
 We report an identification of stratigraphic architectures (MOC images) of layered material in Melas Chasma. Strata are arranged in three depositional sequences bounded by unconformities. Insights into deposit geometries point to deep-water, possibly sub-glacial, lacustrine environments.
- 2:45 p.m. Howard A. D. * Moore J. M.
The Light-toned Sediments in and near Lower Mawrth Vallis May be a Drape Deposit [#1339]
 The light and dark layered deposits surrounding and within lower Mawrth Vallis, Mars may be a drape deposit that post-dates formation of the vallis.
- 3:00 p.m. Michalski J. R. * Noe Dobrea E. Z. Fergason R. Golombek M.
Geologic Mapping of the Mawrth Vallis Region, Mars: Clues to the Origin of Clay Mineral Deposits [#1065]
 We discuss geologic evidence that martian clay mineral deposits in the Mawrth Vallis region formed through sedimentary processes in a sustained, wet environment on early Mars.
- 3:15 p.m. Glotch T. D. * Bandfield J. L. Osterloo M.
A Spectrally Unique Unit Dispersed Through the Southern Highlands of Mars [#1820]
 Using THEMIS infrared imagery, we have identified a spectrally unique unit dispersed throughout the southern highlands of Mars. Analysis of TES data indicates that this unit may have significant components of the iron oxides minerals magnetite and maghemite.

- 3:30 p.m. Dohm J. M. * Baker V. R. Boynton W. V. Fairén A. G. Kargel J. S. Karunatillake S. Keller J. M. Schulze-Makuch D.
GRS as a Test for the MEGAOUTFLO Hypothesis [#1686]
Coupled with other lines of evidence, GRS-based data (sampling rock materials up to tens of centimeters depth) adds to the assessment of the MEGAOUTFLO hypothesis, having a significant bearing on the long-standing argument of whether lakes and oceans occupied the northern plains.
- 3:45 p.m. Pearce G. P. * Veillette D. Soare R. J.
Ground Ice in Utopia Planitia: A Late Amazonian Marine Origin [#2445]
Here we identify periglacial features consistent with two things: 1. the occurrence of near-surface ice-rich ground; and 2. the antecedent saturation of near-surface regolith by marine processes, possibly in the late Amazonian.
- 4:00 p.m. Newsom H. E. * Crumpler L. S. Reedy R. C. Nelson M. J. Petersen M. T. Evans L. G. Taylor G. J. Keller J. M. Janes D. M. Boynton W. V. Kerry K. E. Karunatillake S. GRS Team
Geochemistry of Martian Surficial Materials with Gamma Ray Data from Mars Odyssey: Initial Observations for Calcium [#1939]
The distribution of calcium on Mars observed by the Mars Odyssey GRS confirms the variable composition of surficial materials on Mars, which may reflect bedrock variations and/or chemical mobilization due to aqueous processes.
- 4:15 p.m. Stockstill K. R. * Anderson F. S. Hamilton V. E.
TES Study of Low-Albedo Intracrater Deposits Within Amazonis Planitia, Mars [#1490]
We present a TES study of 11 intracrater low-albedo deposits in the Amazonis Planitia region that indicates the mineralogy of these deposits are dominated by mafic mineralogy with a derived bulk chemistry that is ultramafic to mafic.
- 4:30 p.m. Hahn B. C. * McLennan S. M. GRS Science Team
A Comparative Analysis of Mars Odyssey GRS Element Abundances and TES Dust and Mineralogy Variations [#2120]
We perform a pixel-by-pixel comparison analyzing the relationship between GRS elemental abundances and TES mineralogy and dust abundance datasets. Trends in Fe, Si, K, Th, H, Cl, Al, and Ca are reported.