

Wednesday, March 9, 2011
MARS SEDIMENT REVELATIONS: GENESIS, CHRONICLES,
AND LANDING SITE LAMIN(T)ATIONS
8:30 a.m. Waterway Ballroom 1

Chairs: **Matthew Golombek**
Herbert Frey

- 8:30 a.m. Golombek M. * Grant J. Vasavada A. R. Grotzinger J. Watkins M. Kipp D. Noe Dobrea E. Griffes J. Parker T.
[*Final Four Landing Sites for the Mars Science Laboratory*](#) [#1520]
 The Mars Science Laboratory will land at Mawrth Vallis, Holden, Gale, or Eberswalde Craters (locations important to the potential habitability of Mars) after four community workshops and the consideration of more than 50 candidates over the past four years.
- 8:45 a.m. Erkeling G. * Reiss D. Poulet F. Carter J. Loizeau D. Hiesinger H. Ivanov M. A. Hauber E. Jaumann R.
[*Morphology and Mineralogy of Libya Montes Layered Delta Deposits, Mars: Implications for Long-Term Aqueous Alteration*](#) [#2028]
 We present the first results of our morphologic and mineralogic investigation of layered delta-deposits in the Libya Montes, where our observations suggest long-term availability of water and aqueous alteration.
- 9:00 a.m. Irwin R. P. III *
[*Timing, Duration, and Hydrology of the Eberswalde Crater Paleolake, Mars*](#) [#2748]
 To balance input and evaporation while maintaining its water level, the post-Noachian paleolake in Eberswalde Crater appears to have received intermittent runoff of up to 1 cm/day and 10 cm/year from its watershed over 1,000 to 10,000 years.
- 9:15 a.m. McKeown N. K. * Rice M. S.
[*Detailed Mineralogy of Eberswalde Crater*](#) [#2450]
 Eberswalde Crater contains a fan-shaped deposit interpreted as a delta. Fe/Mg smectite and pyroxene have previously been identified within and near the deltaic deposit. Here we present a detailed mineralogical study of the delta and crater.
- 9:30 a.m. Warner N. H. * Gupta S. Kim J. Muller J. Le Corre L. Lin S. Morley J. McGonigle C.
[*Constraints on the Origin and Evolution of Iani Chaos, Mars*](#) [#1421]
 We present a topographic, geomorphologic, and chronologic study of the Iani Chaos system to constrain its origin and geologic evolution (including the deposition of ILDs) as they relate to catastrophic flood events in Ares Vallis.
- 9:45 a.m. Guallini L. * Gilmore M. S. Harrison T. N. Marinangeli L.
[*Ancient Martian Lakestands in Iani Chaos and Their Relationship to Ares Vallis Outflow Channels*](#) [#1433]
 For the first time fluvial features have been identified in Iani Chaos contiguous with Ares Vallis channels. The systems erode ILD and control their elevation. ILD deposition likely occurred in lakes that were the expression of recharging aquifers.

- 10:00 a.m. Kite E. S. * Manga M. Halevy I.
[*Snowmelt Model of the Formation and Distribution of Sedimentary Rocks on Mars: Thick Atmosphere Not Required?*](#) [#1117]
We are developing a snowmelt model of the formation and distribution of sedimentary rocks on Mars. Initial results show good correspondence between areas where snowmelt is predicted, and areas where sedimentary rocks are observed.
- 10:15 a.m. Cadieux S. B. * Kah L. C.
[*Intracater Layered Deposits in Arabia Terra, Mars Indicate Potential Wet, Cold, Conditions in Late Noachian-Early Hesperian*](#) [#1265]
Intracater layered deposits in Arabia Terra are interpreted in terms of depositional style and stratal packaging to have accumulated by episodic aqueous fluids within a dominantly frozen groundwater reservoir, consistent with a cold, early Mars.
- 10:30 a.m. Pondrelli M. * Rossi A. P. van Gasselt S. Le Deit L. Feuten F. Hauber E. Zegers T.
[*Equatorial Layered Deposits in Arabia Terra, Mars: Facies and Process Variability*](#) [#1825]
The Equatorial Layered Deposits in the Firsoff Crater area have been interpreted as the product of different processes and depositional environments: fluid escape and evaporite precipitation and aeolian reworking, transport, and deposition.
- 10:45 a.m. Wiseman S. M. * Andrews-Hanna J. C. Arvidson R. E. Mustard J. F. Zabusky K. J.
[*Distribution of Hydrated Sulfates Across Arabia Terra Using CRISM Data: Implications for Martian Hydrology*](#) [#2133]
The detection of sulfate deposits across Arabia Terra is consistent with widespread ground water-related processes. Mapping these exposures will allow for the reconstruction of their original extent and comparison to hydrologic model predictions.
- 11:00 a.m. Zabusky K. J. * Andrews-Hanna J. C. Wiseman S. M.
[*The Distribution and Depositional History of Sedimentary Deposits in Arabia Terra*](#) [#2558]
Sedimentary deposits throughout Arabia Terra show similar characteristics to those in the Meridiani region. We show geomorphic evidence that the sediments are related, then use crater counting to estimate formation and erosion rates for the deposits.
- 11:15 a.m. Calef F. J. III * Herrick R. R. Sharpton V. L.
[*Small Rayed Crater Ejecta Retention Age Calculated from Current Crater Production Rates on Mars*](#) [#2717]
This research generates ejecta retention ages for small rayed craters on Mars. This is accomplished by calculating a new crater production function using measured impact rates, corrections for atmospheric filtering and for secondaries in the vicinity around Zunil.
- 11:30 a.m. Frey H. V. * Shi D. Y.
[*Nothing Older than the Borealis Basin on Mars?*](#) [#1756]
There is no evidence in crater retention ages that crust older than the Borealis Basin survives on Mars. The giant impact, or the later forming very large basins, or both, may have completely reset the crater retention ages everywhere on Mars.