

Thursday, March 10, 2011

**ACID VS. ALKALINE: THE NOACHIAN-HESPERIAN TRANSITION ON MARS**  
**3:15 p.m. Waterway Ballroom 1**

**Chairs: John Mustard**  
**Joseph Michalski**

- 3:15 p.m. Wilson J. H. \* Mustard J. F.  
[Igneous Compositions in Ares Vallis: Timing and Importance of Volcanics and Fluvial Processes at the Noachian-Hesperian Boundary](#) [#2507]  
 Spectral detections reveal that compositional differences between Noachian plains and a Hesperian-aged lava flow on the floor of Ares Vallis may capture a compositional evolution, which may help interpret igneous materials from other regions on Mars.
- 3:30 p.m. Head J. W. III \* Wilson L.  
[The Noachian-Hesperian Transition on Mars: Geological Evidence for a Punctuated Phase of Global Volcanism as a Key Driver in Climate and Atmospheric Evolution](#) [#1214]  
 Early Hesperian peak volcanic flux caused short-term atmospheric warming and led to basal melting of the south polar cap, formation of lower latitude valley networks and open-basin lakes, and a transition to sulfur-dominated weathering.
- 3:45 p.m. Mustard J. F. \* Ehlmann B. L.  
[A Stratigraphic Section that Traverses the Noachian-Hesperian Capturing Diverse Habitable Environments](#) [#2355]  
 A critical stratigraphic section on Mars whose bedrocks record diverse aqueous environments that document the transition from an early era of phyllosilicate formation to a later sulfate formation era is presented with implications for habitability.
- 4:00 p.m. Noe Dobrea E. Z. \* Michalski J. Swayze G.  
[Aqueous Mineralogy and Stratigraphy at and Around the Proposed Mawrth Vallis Landing Site: New Insights into the Aqueous History of the Region](#) [#2153]  
 In this work, we show that the terrain within and around the proposed Mawrth Vallis landing ellipse displays a broader range of hydrous mineralogy than previously realized, including the presence of acid-leaching products, sulfates, and dehydrated Mg-smectites.
- 4:15 p.m. Michalski J. R. \* Niles P. B.  
[Formation of Jarosite in the Mawrth Vallis Region of Mars by Weathering Within Paleo-Ice Deposits](#) [#1926]  
 We present new spectral evidence for additional deposits of jarosite in the Mawrth Vallis region of Mars. We discuss an ice weathering model to explain the formation of sulfates in the region and elsewhere.
- 4:30 p.m. Massé M. \* Bourgeois O. Le Mouélic S. Verpoorter C. Le Deit L.  
[Distribution and Origin of Polar Gypsum on Mars](#) [#1737]  
 We demonstrate that gypsum is present on all the north polar superficial sediments including the dune fields and the dust veneers. These gypsum-rich sediments derive directly from the BU and the NPLD ice layers.