

Monday, March 18, 2013
SPECIAL SESSION: MARS SCIENCE LABORATORY I:
GEOLOGY AND ENVIRONMENT
8:30 a.m. Waterway Ballroom 4

[M102]

Chairs: Ashwin Vasavada
 Lauren Edgar

- 8:30 a.m. Grotzinger J. P. * Blake D. F. Crisp J. Edgett K. S. Gellert R. et al.
[*Mars Science Laboratory: First 100 Sols of Geologic and Geochemical Exploration from Bradbury Landing to Glenelg*](#) [#1259]
 The Mars Science Laboratory rover, Curiosity, touched down on the surface of Mars on August 5, 2012. Numerous geologic and geochemical studies were performed.
- 8:45 a.m. Palucis M. C. * Dietrich W. E. Hayes A. G. Williams R. M. E. Calef F. et al.
[*Origin and Evolution of the Peace Vallis Fan System that Drains into the Curiosity Landing Area, Gale Crater*](#) [#1607]
 Gale Crater contains a large alluvial fan near Curiosity's landing site. We present an analysis of imaging and topographic data to constrain the fan's origin.
- 9:00 a.m. Williams R. M. E. * Dietrich W. E. Grotzinger J. P. Gupta S. Malin M. C. et al.
[*Curiosity's Mastcam Images Reveal Conglomerate Outcrops with Water-Transported Pebbles*](#) [#1617]
 Curiosity Mastcam images of outcrops with rounded pebbles provide the first evidence of sedimentary conglomerate on another planet.
- 9:15 a.m. Mangold N. * Forni O. Ollila A. Anderson R. Berger G. et al.
[*Chemcam Analysis of Conglomerates at Bradbury Site, Mars*](#) [#1267]
 This paper discusses the ChemCam imaging and chemical analyses of conglomerate clasts and cement at the Bradbury site.
- 9:30 a.m. Edgar L. A. * Rubin D. M. Grotzinger J. P. Bell J. F. III Calef F. J. III et al.
[*Sedimentary Facies and Bedform Analysis Observed from the Rocknest Outcrop \(Sols 59-100\), Gale Crater, Mars*](#) [#1628]
 Recent results from MSL enable the recognition of distinct cross-bedded facies. Cross-bedding geometries provide insight into the depositional environment.
- 9:45 a.m. Stack K. M. * Grotzinger J. P. Sumner D. Y. Ehlmann B. L. Milliken R. E. et al.
[*Using Outcrop Exposures on the Road to Yellowknife Bay to Build a Stratigraphic Column, Gale Crater, Mars*](#) [#1431]
 We use outcrop observations from the MSL Curiosity rover to construct stratigraphic models consistent with orbital data and first principles of stratigraphy.
- 10:00 a.m. Kah L. C. Rubin D. M. Gupta S. Lewis K. W. Kocurek G. A. et al.
[*Origin of the Low-Albedo Mound Skirting Unit in the Region of the MSL Landing Ellipse, and Implications for the Relative Age of Glenelg Strata*](#) [#1121]
 Heavily cratered, low-albedo strata within Gale Crater are used to provide information on stratal relationships between the MSL landing ellipse and Mt. Sharp.
- 10:15 a.m. Milliken R. E. * Ewing R. Fischer W. Hurowitz J. A.
[*Clay and Sulfate-Cemented Sandstones in Gale Crater: Evidence from Orbital Data*](#) [#1243]
 Morphologic features in Gale Crater are consistent with preserved bedforms cemented by sulfate and clay minerals, indicating intermittent wet conditions.

- 10:30 a.m. Vasavada A. R. * Blake D. F. Crisp J. Edgett K. S. Gellert R. et al.
[*Mars Science Laboratory: First 100 Sols Monitoring the Atmosphere and Environment Within Gale Crater*](#) [#1191]
The MSL mission places atmospheric and environmental sensors within an equatorial setting –4.5 km elevation and between the crater rim and a 5-km-high mountain.
- 10:45 a.m. Haberle R. M. * Gómez-Elvira J. de la Torre Juárez M. Harri A.-M. Hollingsworth J. L. et al.
[*A Preliminary Interpretation of the First Results from the REMS Surface Pressure Measurements of the MSL Mission*](#) [#1625]
We present the MSL REMS surface pressure measurements from the first 90 sols of operations and provide a preliminary interpretation.
- 11:00 a.m. Moores J. E. Haberle R. Lemmon M. Bean K. M. Mischna M. et al.
[*Constraints on Atmospheric Water Vapor and Circulation at Gale Crater from the MSL Atmospheric Monitoring Campaign*](#) [#1548]
A synthesis of atmospheric measurements suggests that conditions at Gale may be particularly dry near the surface during the first 90 sols ($L_s = 151^\circ$ to 203°).
- 11:15 a.m. Webster C. R. * Mahaffy P. R. Leshin L. A. Atreya S. K. Flesch G. J. et al.
[*Mars Atmospheric Escape Recorded by H, C and O Isotope Ratios in Carbon Dioxide and Water Measured by the SAM Tunable Laser Spectrometer on the Curiosity Rover*](#) [#1365]
Mars in situ measurements of the isotopic ratios of D/H in water, and $^{13}\text{C}/^{12}\text{C}$, $^{18}\text{O}/^{16}\text{O}$, $^{17}\text{O}/^{16}\text{O}$, and $^{13}\text{C}^{18}\text{O}/^{12}\text{C}^{16}\text{O}$ in carbon dioxide are reported.
- 11:30 a.m. Jones J. H. * Niles P. B. Webster C. R. Mahaffy P. R. Felsch G. J. et al.
[*Preliminary Interpretations of Atmospheric Stable Isotopes and Argon from Mars Science Laboratory \(SAM\)*](#) [#2781]
Preliminary isotopic measurements of the martian atmosphere from SAM indicate enrichments in the heavy stable isotopes of C, O, and H.