

Tuesday, March 21, 2017

[T252]

**FROM MUD TO MOUNTAIN:  
CURIOSITY'S GEOLOGIC TRAVERSE ACROSS GALE CRATER  
1:30 p.m. Waterway Ballroom 4**

**Chairs:** Jessica Watkins  
Elizabeth Rampe

- 1:30 p.m. Bennett K. A. \* Hill J. R. Murray K. C. Edwards C. S. Bell J. F. III et al.  
[THEMIS-VIS Color and Morphologic Investigations at Gale Crater](#) [#2153]  
THEMIS-VIS grayscale and false color mosaics were used to analyze color variations and morphology in Gale Crater and the surrounding region.
- 1:45 p.m. Fedo C. M. \* Grotzinger J. P. Gupta S. Stein N. T. Watkins J. et al.  
[Facies Analysis and Basin Architecture of the Upper Part of the Murray Formation, Gale Crater, Mars](#) [#1689]  
The Murray formation, Gale Crater, Mars presently can be divided into sedimentary facies that represent lake and lake margin environments.
- 2:00 p.m. Minitti M. E. \* Kennedy M. R. Krezoski G. M. Rowland S. K. Schieber J. et al.  
[Using MARDI Twilight Images to Assess Variations in the Murray Formation with Elevation, Gale Crater, Mars](#) [#2622]  
MARDI images provide a systematic record of Murray formation characteristics, observing variations in lamination, veins, and diagenetic textures with elevation.
- 2:15 p.m. Stein N. \* Grotzinger J. P. Schieber J. Mangold N. Newsom H. et al.  
[Candidate Desiccation Cracks in the Upper Murray Formation, Gale Crater, Mars](#) [#2387]  
The Curiosity rover team recently investigated polygonal features in the upper Murray formation. The features are interpreted to likely be desiccation cracks.
- 2:30 p.m. Cofield S. \* Stack K. M. Fraeman A. A.  
[Geologic Mapping and Stratigraphic Analysis of the "Clay Trough" of Mount Sharp, Gale Crater, Mars](#) [#2531]  
High-resolution orbital geologic map of the clay-bearing trough in lower units of Mount Sharp for MSL Curiosity rover's newly extended mission traverse.
- 2:45 p.m. Watkins J. A. \* Grotzinger J. P. Avouac J.-P.  
[Fracture Formation by Compaction-Related Burial in Gale Crater, Mars: Implications for the Origin of Aeolis Mons](#) [#3019]  
We test a mechanical model of fracture formation by compaction-related burial within Gale Crater, Mars in order to constrain the regional stress history.
- 3:00 p.m. Fox V. K. \* Arvidson R. E. Fraeman A. A.  
[Mineralogy of Mount Sharp, Gale Crater, Using Along-Track Oversampled CRISM Observations to Support Path Planning for the Curiosity Rover](#) [#1454]  
Detailed mineral maps using 12 m/pixel CRISM observations will help the Curiosity rover identify routes that reach scientifically important out-crops.
- 3:15 p.m. Rampe E. B. \* Ming D. W. Grotzinger J. P. Morris R. V. Blake D. F. et al.  
[Mineral Trends in Early Hesperian Lacustrine Mudstone at Gale Crater, Mars](#) [#2821]  
Mineralogical variations in lacustrine mudstone samples in Gale Crater suggest diverse depositional and diagenetic environments.

- 3:30 p.m. Bristow T. F. \* Blake D. F. Vaniman D. T. Chipera S. J. Rampe E. B. et al.  
[Surveying Clay Mineral Diversity in the Murray Formation, Gale Crater, Mars](#) [#2462]  
Mars Science Laboratory has documented dioctahedral smectite clay minerals in the upper part of the Murray Formation, with implications for ancient Mars conditions.
- 3:45 p.m. Thompson L. M. \* MSL APXS and Science Teams  
[Compositional Characteristics and Trends Identified by APXS Within the Murray Formation, Gale Crater, Mars: Implications for Provenance, Diagenesis and Alteration History](#) [#3020]  
APXS chemical characteristics and trends elucidate provenance, depositional environment, diagenesis, and alteration processes within martian Murray Fm mudstones.
- 4:00 p.m. Mangold N. \* Dehouck E. Forni O. Le Deit L. Rivera-Hernandez F. et al.  
[Aqueous Alteration in Mt. Sharp Mudstones Evidenced by ChemCam, Curiosity](#) [#1894]  
ChemCam analyses of the Murray mudstones show high values (55–60) of the chemical index of alteration (CIA) likely resulting of enhanced weathering conditions.
- 4:15 p.m. Thomas N. H. \* Ehlmann B. L. Anderson D. E. Rapin W. Schröder S. et al.  
[ChemCam Survey of Volatile Elements in the Murray Formation, Gale Crater, Mars](#) [#2756]  
We apply new lab LIBS results to the MSL ChemCam data to measure H, Cl, C, and S and to identify cementing salts and diagenesis in the Murray mudstone.
- 4:30 p.m. Sutter B. \* McAdam A. C. Rampe E. B. Thompson L. M. Ming D. W. et al.  
[Evolved Gas Analysis of the Murray Formation in Gale Crater, Mars: Results of the Curiosity Rover's Sample Analysis at Mars \(SAM\) Instrument](#) [#3009]  
The sulfate, nitrate, carbon, and (per)chlorate chemistry of the Murray formation will be evaluated.