
What Can Curiosity’s Study of Gale Crater Tell Us About Mars’ Ancient Climate? [#2161]

Curiosity’s study of ancient fluvial and lacustrine environments within Gale Crater has placed new constraints on Mars’ ancient climate.

8:45 a.m. Lewis K. W. *   Dietrich W. E.   Edgar L. A.   Grotzinger J. P.   Gupta S.   et al.  

Physical Stratigraphy Along the Curiosity Traverse and the Transition to Mount Sharp [#2698]

Orbital and rover-based observations are combined to understand the transition between the sediments of the Gale Crater plains and the base of Mount Sharp.

9:00 a.m. Stack K. M. *   Grotzinger J. P.   Gupta S.   Kah L. C.   Lewis K. W.   et al.

Sedimentology and Stratigraphy of the Pahrump Hills Outcrop, Lower Mount Sharp, Gale Crater, Mars [#1994]

MSL Curiosity’s first analysis of the sedimentology and stratigraphy of lower Mount Sharp strata.


The Chemostratigraphy of Lower Mt. Sharp: Using Rover-Scale Observations to Test Orbital-Scale Hypotheses [#2339]

We use MSL ChemCam and APXS data to determine chemostratigraphic trends at Pahrump Hills for comparison to orbital CRISM signatures of hydrated phases.

9:30 a.m. Thompson L. M. *   Gellert R.   Spray J. G.   Kah L. C.   APXS Team   et al.

The Composition of the Basal Murray Formation at Pahrump Hills, Gale Crater, Mars [#1429]

The APXS compositions of the sedimentary strata at the base of Mount Sharp, reveal information regarding their regional context and post-depositional history.

9:45 a.m. Gellert R. *   Berger J. A.   Boyd N.   Campbell J. L.   Desouza E. D.   et al.

Chemical Evidence for an Aqueous History at Pahrump, Gale Crater, Mars, as Seen by the APXS [#1855]

Pahrump is different from previous areas in Gale. Lower Mg, Ca, Fe, higher Al, Si, P, elevated Se and Pb and MgSO₄ features indicate multiple aqueous events.

10:00 a.m. Cavanagh P. D. *   Bish D. L.   Blake D. F.   Vaniman D. T.   Morris R. V.   et al.

Confidence Hills Mineralogy and CheMin Results from Base of Mt. Sharp, Pahrump Hills, Gale Crater, Mars [#2735]

The MSL/CheMin X-ray diffractometer completed five nights of analysis on the Confidence Hills sample. Analysis and quantitative mineralogy are presented.


Diagenetic Crystal Clusters and Dendrites, Lower Mount Sharp, Gale Crater [#1901]

Crystal clusters and dendrites at Pahrump, Gale Crater, result from interparticle crystal growth of diagenetic fluids through a mudstone matrix.

10:30 a.m. Wiens R. C. *   Maurice S.   Gasnault O.   Clegg S. M.   Fabre C.   et al.

Centimeter to Decimeter Size Spherical and Cylindrical Features in Gale Crater Sediments [#1249]

Hollow, dark-toned multi-centimeter spheres and larger cylindrical features suggest gas bubbles and collapse pipes, respectively, in Gale sediments.
We discuss trends in the major volatiles observed in SAM evolved gas analyses of Gale Crater samples to date and their implications.

11:00 a.m. Franz H. B. *The Isotopic Composition of Martian Atmospheric CO₂: Measurements with the Sample Analysis at Mars (SAM) Quadrupole Mass Spectrometer [3005]*
One Mars year of observations suggests a seasonal cycle in CO₂ isotopes.

11:15 a.m. Niles P. B. * Archer P. D. Heil E. McAdam A. Sutter B. et al. *Investigating CO₂ Reservoirs at Gale Crater and Evidence for a Dense Early Atmosphere [2840]*
Based on results from the MSL rover, the total amount of CO₂ in the Gale samples is lower than expected. It is possible that CO₂ exists in a more exotic form.

11:30 a.m. Thomson B. J. * Fassett C. I. Buczkowski D. L. Seelos K. D. *How Much of the Sediment in Gale Crater’s Central Mound was Fluvially Transported? [2280]*
Water, gently flowing on the ground. Can’t move enough dirt to build a tall mound.

11:45 a.m. Parker T. J. * Dietrich W. E. Palucis M. C. Calef F. J. Newsom H. E. *Banding and Terracing in Lower Mount Sharp (Aeolis Mons), Gale Crater: Comparisons to Recently-Exposed Strandlines in Lake Mead, SW USA [3003]*
Terracing in lower Mount Sharp, generally interpreted as stratigraphy, is similar in planform and profile shape to very young terrestrial strandlines.