Further Analysis of Carbonates in Basanitic/Basaltic and Xenolithic Samples from Svalbard, Norway: An Earth Analog for Martian Meteorite Allan Hills 84001

Samples from Spitsbergen Norway containing zoned carbonates are compared to those in ALH 84001. Similarities are noted, implying a similarity in origin.

Carbonates in Lafayette: Preparation for Mars 2020

Ca-siderite comprises up to 4% of Lafayette; TEM and XANES analyses inform us of its formation, dissolution, and use as an analogue for Mars 2020 landing sites.

Antarctic Martian Meteorites at Johnson Space Center

The ANSMET program has collected 15 martian meteorites that are housed at JSC. The collection consists of shergottites, nakhlites, and one orthopyroxenite.

Mineral Surface and Fluid Chemistry in Nakhlite Analog Water-Rock Reactions

Experimental and geochemical modeling investigations were conducted to study mineral surface-fluid chemistry under circumneutral martian analog conditions.

Alteration Mineralogy in Martian Regolith Breccia Northwest Africa 7034 Using Raman Spectroscopy

We identified the alteration phases in NWA 7034 using Raman spectroscopy and SEM. The alteration assemblage are different from Nakhlites.

PIXE Analysis of Hawaiian Volcanics: An Analogue for APXS in Gale Crater

We evaluate PIXE as an APXS analogue method and compare Gale Crater geochemical trends to those found in altered Hawaiian volcanics.

The Badwater Gabbro as an Analogue for the Weathering of Martian Basalts

Whole rock geochemistry used as the main tool to assess the weathering in the Badwater Gabbro as an analogue site for the weathering of martian basalts.

XRD Characterization of Antarctic Glacial Drift Deposits: Implications for Quantifying Weathering Products on Earth and Mars

We evaluated the effects of sample preparation and software tools on XRD-based mineral characterization using Antarctic glacial sediments.

Characterization of the Alteration of Antarctic Ash: The Products of a Cold and Icy Environment

Preliminary analogue work on Antarctic ash samples implies the possibility of hydrous surface alteration on early Mars under a cold and icy background climate.
Burton Z. F. M.  Bishop J. L.  Englert P.  Koeberl C.  Gibson E. K.  
POSTER LOCATION #494
Chemically Active Horizon in a Soil Pit from an Intermittent Pond Site in the Dry Valleys Region, Antarctica and Implications for Soil Processes on Mars [1086]
We examine spectra and chemistry of samples collected at an intermittent salt pond in Antarctica’s Dry Valleys region as analogues for martian surface processes.

POSTER LOCATION #495
High Sanidine with a Hydrothermal Origin on Manua Kea Volcano (Hawaii) as a Process Analogue for High Sanidine Detected at Gale Crater (Mars) by CheMin XRD [2183]
High sanidine detected at Gale Crater (Mars) by CheMin XRD may be a product of hydrothermal, not igneous, activity.

Ruiz-Galende P.  Torre-Fdez I.  Arana G.  Aramendia J.  Gómez-Nubla L.  et al.  
POSTER LOCATION #496
Geochemical Characterization of a Terrestrial Martian Analogue: The Submarine Volcano of Meñakoz (Biscay, Spain) [2842]
A terrestrial martian analogue is described in a submarine volcano located in Biscay (North of Spain) where phyllosilicates similar to those from Mars were found.

Ostwald A. M.  Sutter B.  Peretyazhko T. S.  
POSTER LOCATION #497
Open Hydrologic Assessment of Phyllosilicate Formation on Early Mars [2447]
This study subjects Mars-analogue basalt to acidic conditions in an open-hydrologic setting in an effort to prompt smectite formation.

Rudolph A. N.  Craig P. I.  Rampe E. B.  Hogancamp J. V.  
POSTER LOCATION #498
Aqueous Alteration of Smectite in Acid-Sulfate Fluids: Implications for Clay Mineralogy at Gale Crater [3001]
We investigate the factors contributing to the collapse of nontronite to help elucidate the nature of the collapsed smectite identified in Gale Crater, Mars.

POSTER LOCATION #499
NH₄-Smectite, a Potential Source of N Compounds (NO) in SAM Analyses [1998]
Laboratory EGA of NH₄-smectite with Mg perchlorate suggests that interlayer NH₄⁺ can contribute to m/z 30 (NO) observed in SAM EGA analyses of martian samples.

Mitchell J. L.  Christensen P. R.  
POSTER LOCATION #500
The Mid- and Far-Infrared Emission Spectra of Chloride Minerals [1023]
Chloride salts on Mars / Have distinct spectral features / Let’s go visit them!

POSTER LOCATION #501
Spectral and Optical Properties of Oxidized Fe-Mg-Al Smectites [1725]
Initial characterization of synthetic smectites as remote sensing standards.

Cutts E. M.  Ehmann B. L.  Greenberger R. N.  Beckett J. R.  Stolper E. M.  
POSTER LOCATION #502
Visible and Shortwave Infrared Imaging Spectroscopy of Martian Meteorites [2749]
Microimaging spectroscopy of >60 martian meteorites reveals considerable diversity and allows comparison to remote sensing data.

Makarewicz J. S.  Makarewicz H. D.  Bishop J. L.  
POSTER LOCATION #503
Spectral Mixture Modeling Using Principle Component Analysis Applied to Nontronite-Ferrihydrite and Kaolinite-Montmorillonite Mixtures [1378]
A new mixture modeling technique using PCA and linear regressions was applied to nontronite-ferrihydrite and kaolinite-montmorillonite mixture datasets.