Chairs: Ryan Mills
Jennifer Rapp

8:30 a.m. Symes S. J. K. * Borg L. E. Brennecka G. A.
A Young Differentiation Age for Mars Deduced from High-Precision \(^{142}\)Nd Analyses of Martian Meteorites [2063]
We present Sm- and Nd-isotopic data combined with a new mathematical approach to define the age of silicate differentiation on Mars.

8:45 a.m. Righter M. * Andreasen R. Lapen T. J. Irving A. J.
The Age and Source Composition for Depleted Shergottite Northwest Africa 7635: A 2.3 Ga Magmatic Rock from Early Amazonian Mars [2550]
NWA 7635 depleted shergottite has an Sm-Nd age of 2.3 Ga. Calculated source compositions show that it derived from a source that is more depleted than any other shergottites.

Lead-Lead Isotope Systematics and Terrestrial and Ejection Ages of Early Amazonian Depleted Shergottite Northwest Africa 7635 [2865]
Depleted shergottite NWA 7635 has an ejection age of 1 m.y. and a 2.8-k.y. terrestrial. Lead-lead isotopes are the least radiogenic measured for martian meteorites.

9:15 a.m. Bellucci J. J. * Nemchin A. A. Whitehouse M. J.
A Unique Differentiation History of Mars Preserved in Martian Meteorite NWA 7533 [1327]
A Pb isotopic study of martian regolith breccia NWA 7533.

9:30 a.m. Sharp Z. D. * Shearer C. K. Burger P. V. Agee C. McKeegan K.
The Unique Chlorine Isotope Composition of Mars: Implications for Planetary Formation and Differentiation [1617]
The Cl-isotope composition of Mars differs from Earth, the Moon, and chondrites. Mantle samples are light; crustal materials are heavy. Mantle samples are unique.

9:45 a.m. Shearer C. K. * Sharp Z. D. McKeegan K. D. Burger P. V. McCubbin F. M.
Chlorine Isotopic Composition of Martian Meteorites. Implications for the Composition of the Martian Crust and Mantle, Their Interactions, and Magmatic Processes [1502]
We examine the Cl-isotopic compositions of a variety of martian rocks to better understand the composition of the martian crust and mantle and their interactions.

10:00 a.m. Balta J. B. * McSween H. Y. Jr.
Application of the MELTS Algorithm to the Composition and Crystallization of Martian (and Other Extraterrestrial) Magmas [1365]
The MELTS algorithm is commonly used to model crystallization of planetary magmas. We apply it to martian compositions and explore its strengths and weaknesses.

10:15 a.m. Collinet M. * Charlier B. Medard E. Vander Auwera J. Grove T. L.
New Experimental Constraints on the Origin of Shergottites: Super-Chondritic Ca/Al in Melts from a Garnet-Free Martian Mantle [2776]
Melts with CaO/Al\(_2\)O\(_3\) ratios identical to shergottites were produced from a primitive martian mantle at a lower pressure than the spinel to garnet transition.

*Tracking the Martian Mantle Signature in Olivine-Hosted Melt Inclusions of Basaltic Shergottites Yamato 980459 and Tissint* [#2405]

We present here our in situ SIMS analysis of trace elements in olivine hosted melt inclusions for the basaltic shergottites Yamato 980459 and Tissint.

10:45 a.m. Williams K. B. Sonzogni Y. Treiman A. H.

*Amphibole in the Tissint Martian Meteorite: Composition and Implication for Volatile Content of Parental Magma* [#1435]

Our chemical analyses of kaersutite in the new Tissint shergottite provide volatile contents that, in turn, constrain the volatile content of the parent magma.

11:00 a.m. Bell A. S. Burger P. V. Le L. Papike J. J. Jones J. et al.

*Chromium Oxidation State in Planetary Basalts: Oxygen Fugacity Indicator and Critical Variable for Cr-Spinel Stability* [#2198]

The ratio of trivalent to divalent Cr in magmas has consequences for the stability of phase spinel and the Cr concentration of clinopyroxene and olivine.


*Discovery of a New Martian Meteorite Type: Augite Basalt — Northwest Africa 8159* [#2036]

We report here the discovery of a new type of martian meteorite, NWA 8159 augite basalt, that has characteristics distinct from other martian meteorite types.

11:30 a.m. Herd C. D. K. Agee C. B. Muttik N. Walton E. L.

*The NWA 8159 Martian Augite Basalt: Possible Eruptive from the Nakhlite Suite* [#2423]

A new Mars basalt / Defies being classified / Nakhlite related?