

Tuesday, March 24, 2009

POSTER SESSION I: PETROLOGY AND MINERALOGY OF THE SNC METEORITES
6:30 p.m. Town Center Exhibit Area

Bunch T. E. Irving A. J. Wittke J. H. Rumble D. III Korotev R. L. Gellissen M. Palme H.

[*Petrology and Composition of Northwest Africa 2990: A New Type of Fine-grained, Enriched, Olivine-Phyric Shergottite*](#) [#2274]

We characterize a fine-grained martian magmatic rock that is different from those previously described.

Satake W. Mikouchi T. Makishima J. Miyamoto M.

[*Comparison of Redox States Between Geochemically-Intermediate and Enriched "Lherzolitic" Shergottites*](#) [#1717]

We analyzed geochemically-intermediate (ALH77005 and LEW88516) and enriched (RBT04262 and NWA4468) lherzolitic shergottites to compare their redox states. Fe-XANES analysis of ulvospinel in enriched samples showed slightly higher Fe³⁺ abundance.

Shearer C. K. Burger P. V. Papike J. J. Karner J.

[*Comparisons Between RBT 04262 and Lherzolitic Shergottites \(ALHA 77005 and LEW 88516\)*](#) [#1300]

In this poster, we compare lithology A in RBT 04262 to two other lherzolitic shergottites to gain a better understanding of the petrogenesis of RBT 04262 and the lherzolitic shergottites, and their relationship to the basalts that produced the complete suite of shergottites.

O'Sullivan K. M. Neal C. R.

[*The Crystal Stratigraphy of Shergotty*](#) [#1709]

Pyroxene crystal size distributions, residence times, and geochemical variations are presented.

Mikouchi T.

[*Petrological and Mineralogical Diversities Within the Lherzolitic Shergottites Require a New Group Name?*](#) [#2272]

"Pyroxene-oikocrystic" shergottite can be an appropriate group name of lherzolitic shergottite because recent discovery of new shergottites such as RBT 04262 and NWA 4468 has revealed petrological and mineralogical diversities of this group.

Pinet P. C. Clenet H. Heuripeau F. Chevrel S. D. Rosemberg C. Daydou Y. Toplis M. Baratoux D.

[*Mafic Mineralogy of Martian Meteorites Based on a Systematic Deconvolution Using an Improved Modified Gaussian Model \(MGM\) Approach*](#) [#1612]

An improved MGM deconvolution procedure tested on SNC reflectance spectra leads to reliable detection of complex mafic lithologies based on the band positions in the 1 and 2 μm domains, with implications for interpreting the martian spectra.

Hui H. Peslier A. Lapen T. J. Brandon A. Shafer J.

[*Northwest Africa 5298: A Basaltic Shergottite*](#) [#2087]

Martian meteorite NWA 5298 found in 2008 is a moderately-evolved "enriched" shergottite. It is mainly composed of pyroxene grains with complex composition zoning and lath-shaped maskelynite. Oxygen fugacity recorded by Fe-Ti oxides is about QFM.

Basu Sarbadhikari A. Liu Y. Day J. M. D. Taylor L. A.

[*Olivine-hosted Melt Inclusions in Olivine-Phyric Shergottite LAR 06319*](#) [#1173]

A newly-found, Antarctic, olivine-phyric shergottite, LAR 06319 which contains an enriched REE signature are studied. The results on olivine-hosted MI and their implications on the evolution of the LAR 06319 parental melt are reported.

Galenas M. G., Jones J. H., Danielson L. R.

[Experimental Crystallization of Yamato 980459](#) [#1920]

Fractional and equilibrium crystallization experiments find a correlation between major element compositions and differences in minor element compositions between Y-980459 and QUE 94201 suggesting that Y-98 is not a parental melt for QUE.

Draper D. S.

[Yamato 980459 Liquid Line of Descent at 0.5 GPa: Approaching QUE94201](#) [#1696]

Anhydrous equilibrium crystallization experiments on a synthetic Yamato 980459 composition at 0.5 GPa produce residual liquids approaching the composition of QUE 94201.

Karner J. M., Papike J. J., Shearer C. K., Burger P. V.

[Chemical Signatures in Plagioclase from Martian Meteorites](#) [#1327]

Plagioclase composition holds signatures of planetary origin and igneous history.

Channon M. B., Bonifacie M., Stolper E. M., Eiler J. M.

[Oxygen Isotope Compositions of Mineral Separates from SNC Meteorites: Constraints on the Petrogenesis of Martian Magmas](#) [#2450]

Oxygen isotope data of martian meteorites from whole rock measurements may not reflect the isotopic composition of martian magmas. This study uses mineral separates to reconstruct oxygen isotope melt values and constrain mantle characteristics.

Nagao K., Park J., Okazaki R., Imae N., Kojima H.

[Noble Gas Distribution in the Yamato 000593 Nakhilite Deciphered by Laser Ablation Analysis and Mineral Separation](#) [#1682]

Noble gases measured for olivine, plagioclase and pyroxene separates, and by laser ablation on thin plate prepared from Y-000593 nakhilite indicate that plagioclase and/or mesostasis are the main carrier of elementally fractionated martian atmosphere.

Cartwright J. A., Burgess R., Gilmour J. D.

[Xenon Isotopes in Shergottites RBT 04262, DaG 489, Shergotty and EET 79001](#) [#1907]

Xenon isotope analysis has been performed on mineral separates of shergottites EET 79001, Shergotty, DaG 489 and RBT 04262. All meteorites show similar distribution of martian components, except for clear overprinting from terrestrial contamination.