

**Tuesday, March 24, 2009**  
**POSTER SESSION I: MARTIAN METEORITES**  
**6:30 p.m. Town Center Exhibit Area**

Albarede F. Bouvier A. Blichert-Toft J.  
[More Old News from Martian Meteorites](#) [#1914]

We report new Pb isotopic data on whole-rocks and minerals from RBT 04262 (shergottite), MIL 03346 (nakhlite), and ALH 84001. ALH 84001 carbonates and silicates give ages of ca. 4.1 Ga. All SNC formed in three episodes dated at 4.3, 4.1, and 1.3 Ga.

Jagoutz E. Bowring S. Jotter R. Dreibus G.  
[New U-Th-Pb Data on SNC Meteorite ALHA 84001](#) [#1662]

We report new Th-U-Pb data on ALHA 84001. A  $^{206}\text{Pb}$ - $^{207}\text{Pb}$  age of  $4135 \pm 12$  Ga and U – Pb of  $41173 \pm 2,3$  are found. However,  $^{208}\text{Pb}$  systematic is not consistent with U – Pb evolution, Th-Pb system shows a much younger age of  $2926 \pm 410$  Ma.

Righter M. Lapen T. J. Brandon A. D. Beard B. L. Shafer J. T. Peslier A. H.  
[Lu-Hf Age and Isotope Systematics of ALH 84001](#) [#2256]

Lu-Hf age and isotope data of ALH 84001 yields crystallization age of  $4086 \pm 30$  Ma and an initial  $\epsilon_{\text{Hf}}$  of  $-4.76 \pm 1.04$ , indicating this meteorite is derived from ancient enriched reservoir on Mars.

Shafer J. T. Brandon A. D. Lapen T. J. Righter M. Beard B. Peslier A. H.  
[Lu-Hf Age of Martian Meteorite Larkman Nunatak 06319](#) [#1803]

The Lu-Hf age of martian meteorite LAR 06319 is  $197 \pm 29$  Ma. An initial  $\epsilon^{176}\text{Hf}$  of  $-18.0$  is similar to other enriched shergottites (Shergotty, Zagami, RBT 04262, and Los Angeles) and extend the existing data set for the enriched shergottite group.

Park J. Ming D. W. Garrison D. H. Jones J. H. Bogard D. D. Nagao K.  
[Noble Gas Analysis for Mars Robotic Missions: Evaluating K-Ar Age Dating for Mars Rock Analogs and Martian Shergottites](#) [#2186]

Noble gas investigation was organized for the possibility of measuring noble gases in martian rocks and air by future robotic missions such as MSL. We suggest the possibility of K-Ar age dating by lab simulation experiments on MORB and martian meteorites.

Greshake A. Fritz J.  
[Discovery of Ringwoodite, Wadsleyite, and  \$\gamma\text{-Ca}\_3\(\text{PO}\_4\)\_2\$  in Chassigny: Constraints on Shock Conditions](#) [#1586]

The olivine high-pressure polymorphs ringwoodite and wadsleyite as well as the high-pressure phosphate  $\gamma\text{-Ca}_3(\text{PO}_4)_2$  were discovered in melt pockets of the martian dunite Chassigny attesting a minimum prevailing shock pressure of  $\sim 20$  GPa.

Walton E. L. Irving A. J. Bunch T. E. Kuehner S. M. Herd C. D. K.  
[Extreme Shock Effects in Relatively Enriched Shergottite Northwest Africa 4797](#) [#1464]

NWA 4797 is distinguished by its strong degree of shock damage, representing a growing group of martian meteorites shocked to pressures  $>55$  GPa, previously represented only by Dhofar 378.

Fritz J. Greshake A.  
[Petrographic Constraints on Shock Induced P/T Conditions in Shergottites](#) [#1581]

Quantitative shock pressure barometry and post shock temperature calculations of rock forming minerals are presented. The two independent data sets are in good agreement with the petrographic observations in shergottites.

Kurihara T. Mikouchi T. Saruwatari K. Kameda J. Miyamoto M.

[Fe-Ni Metal and Magnetite Nano-Particles in "Brown" Color Olivines from Martian Meteorites](#) [#1049]

Our TEM study revealed that brown olivines in Dhofar 019, LAR 06319 and NWA 1950 contained magnetite nano-particles instead of Fe-Ni metal nano-particles. These results indicate that magnetite nano-particles are widely present in martian meteorites.

Hoffmann V. H. Mikouchi T. Kurihara T. Funaki M. Torii M.

[Magnetic Signature of Experimentally Shocked San Carlos Olivines: Simulation of the Neof ormation Processes of Nano-sized Fe-Ni and Magnetite Particles in Brown Colored Olivines of Some Martian Meteorites \(SNC\)](#) [#2194]

The magnetic signature and phase composition of experimentally shocked San Carlos olivines is investigated. The basic idea is to simulate the likely neof ormation processes of nano-sized Fe-Ni/Magnetite particles in brown colored olivines of some martian meteorites.

Niihara T. Kaiden H. Misawa K. Sekine T.

[U-Pb Isotopic Systematics of Experimentally Shocked Baddeleyite](#) [#1562]

We performed shock recovery experiments on baddeleyite at the shock pressures of 24, 34, and 47 GPa. The data on U-Pb isotope and corresponding ages for experimentally shocked baddeleyite are indistinguishable from those of unshocked baddeleyite.