

**Thursday, March 22, 2012**  
**POSTER SESSION II: DIFFERENTIATION AND COOLING HISTORIES**  
**OF PLANETARY MAGMAS: FROM ISOTOPES TO TEXTURES**  
**6:00 p.m. Town Center Exhibit Area**

Dauphas N. Roskosz M. Alp E. E. Sio C. K. Tissot F. L. H. Neuville D. Hu M. Zhao J.  
Tissandier L. Medard E.

[\*Controls on Iron Isotope Variations in Planetary Magmas\*](#) [#1525]

Using a synchrotron technique, we have measured the equilibrium Fe-isotope fractionation factors of geological materials. This study reveals the potency of Fe isotopes to trace redox variations and magmatic differentiation in planets.

Holness M. B. Richardson C. Anand M.

[\*A New Proxy for Dolerite Crystallisation Times in Planetary Samples\*](#) [#1589]

In this contribution we introduce a new parameter for constraining solidification times in mafic rocks: the median clinopyroxene-plagioclase-plagioclase dihedral angle.

Mills R. D. Glazner A. F.

[\*Coarsening of Crystals During Temperature Cycling in Magmas and Icy Materials\*](#) [#1819]

Temperature cycling during crystal growth produces large crystals and coarse texture in magmas and ices by dissolution-crystallization. This has implications for crystal growth and texture development on the Moon, Mars, and comets.

Jacob D. Palatinus L. Cuvillier P. Leroux H. Domeneghetti C. Camara F.

[\*Fe-Mg Ordering in Orthopyroxene Studied at a Microscopic Scale Using Precession Electron Diffraction\*](#) [#1337]

The ordering state of orthopyroxene is determined at a microscopic scale in a transmission electron microscope. The method allows distinguishing between a natural ordered sample from a disordered one annealed at high temperature and quenched.

McCutcheon W. A. King P. L. Lee R. J. Ramsey M. S.

[\*Understanding the Composition and Thermal History of Silicic Glasses Through Thermal Infrared Spectroscopy\*](#) [#2543]

Thermal infrared spectroscopy of glasses, common on planetary surfaces, is complicated by the effects of composition and temperature. This contribution examines these effects in a range of natural and synthetic silicic glass compositions.