

Special session at the upcoming March Meeting of the American Physical Society, March 5-9, 2007, Denver, Colorado, USA

Focus Topic 19.3.1 Earth and Planetary Materials

American Physical Society March Meeting

(<http://www.aps.org/meetings/march/index.cfm>)

March 5-9, 2007, Denver, Colorado, USA

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Abstract Deadline: November 20, 2006

This focus topic on Earth and Planetary Materials will highlight new experimental, computational, and theoretical approaches for understanding a variety of naturally occurring materials, from the core to the surface of solar and extra-solar planets. The main interest lies in the exploration of ices, fluids, minerals, and liquids and related complex and/or imperfect materials over the wide range of relevant thermodynamics conditions. Recent advances in theoretical and experimental techniques have led to breakthroughs in our understanding of the physical and chemical properties of Earth and planetary materials that were deemed inconceivable only a few years ago. For example, progress in laser-based spectroscopy, the second- and third-generation synchrotron sources, static and dynamic compression techniques, and advanced theoretical methods combined with rapidly increasing computer power has fundamentally altered how we investigate these materials and their interaction with the environment. This focus topic also encompasses advances in shock-wave techniques, diagnostics, and computation on all classes of materials. Of particular importance is that we now have in situ methods capable of determining the properties and behavior of materials under conditions ranging from the pressures and temperature of giant planetary interiors to ambient conditions. The goal of these sessions will be to explore the science and the technological advances that inspire research in this area.

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