



CHEMISTRY SEMINAR SERIES

SPRING 2015



TIME: **12:30-2:00 PM**

PLACE: **SCIENCE HALL WEST 301**

WHEN: **THURSDAY, January 22ND, 2015**



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X-Ray microtomography in meteoritics and planetary science: methods and applications

Chondritic meteorites are among the most primitive materials in the solar system available for laboratory examination and they comprise about 85% of known meteorites. The study of chondrites provides invaluable insights into the early history of the solar system and the later evolution of small solar system bodies such as asteroids. The traditional means of optical and instrumental examination of chondrites is with two-dimensional (2D) petrographic thin sections. These traditional 2D thin section studies are the preeminent means of studying the chemical and physical relationships between spatially associated mineral phases. Although the majority of thin section-derived (2D) information such as chemical makeup or exactly precise mineralogical composition cannot rigorously be extended to three dimensional (3D) analytical methods of analysis, X-ray tomography (μ CT) does allow for an approximate 3D compositional and textural examination of chondritic meteorites. I will provide a brief introduction to primitive chondritic meteorites and what they can tell us about the evolution of small solar system bodies. I will discuss the use of the 3D imaging technique μ CT and subsequent digital data analysis to quantitatively examine the textures of asteroidal material. I will focus on investigations of impact-related processes and impact histories of asteroidal surfaces as inferred from chondrites.

For additional information please contact:

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