Speaker: Prof. A. El Goresy
Affiliation: Bayerisches Geoinstitut, Universität Bayreuth
Title: Micro-surgical FIB-TEM study of diverse liquidus wadsleyite-ringwoodite pairs fractionally crystallized from olivine melt enclaves in shock melt veins in L6 chondrites.
Date & Time: 2009 / 10 / 13 16:20 – 17:50
Place: Chigaku-building Room 503
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Report:

（講演者の紹介）
Prof. A. El Goresy worked for Max-Planck-Institute and Carnegie Institution of Washington, and is now a member of Bayerisches Geoinstitut. His major research projects are oxygen isotopic compositions of the solar nebula and high-pressure phase transitions in meteorites and in terrestrial impact craters. Now, he is focusing on a dynamic event on Mars.

（講演内容）
Many high-pressure polymorphs of olivine, wadsleyite and ringwoodite were identified in shock-melt veins of Peace River L6 chondrite. The assemblage of wadsleyite and ringwoodite replacing original olivine is pervasive. There are clear differences on their chemical compositions between wadsleyite and ringwoodite. We studied the assemblages with FIB-TEM techniques in detail. TEM observations show that the wadsleyite-ringwoodite assemblage was formed from olivine melt through fractional crystallization.

（報告）
Previous studies proposed that phase transformation from olivine to wadsleyite and/or ringwoodite proceed in solid-solid state. However, their studies brought a new insight to the phase transformation mechanism (fractional crystallization mechanism). The phase transformation mechanism has relevance to planetesimal collisions. This will allow us to conduct much more accurate estimation of magnitude of dynamic events.