Geodynamics Seminar

第373回ジオダイナミクスセミナー

HP-HT phase relation of lunar highland regoliths: an analog for the subducted primordial crust in the Earth ?

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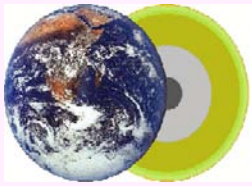
主催：愛媛大学地球深部ダイナミクス研究センター
日時：12/20（金）午後 4時30分～
場所：総合研究棟Ⅰ 4F 共通会議室



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Abstract

Geological studies of the lunar surface showed that the Moon is covered by a 50 km thick anorthositic crust. Studies of the isotopic composition of lunar rocks demonstrated that the bulk silicate Earth and the Moon show a high degree of similarity. Indeed, there is nowadays no evidence for an anorthositic crust on the Earth neither on the surface nor in its shallower layers. Thus, one possible whereabouts of anorthositic crust is that it was completely subducted into the Earth's deep interior where it could form chemical and/or density heterogeneities. In order to verify this assumption, it is essential to well establish the phase relation of lunar basalts at the high pressures and high temperatures of the deep lower mantle.

Here we investigated the phase relation of two compositions representative of the lunar crust from 12 to 50 GPa and T ~2000 K. The results are presented for (1) lunar highland regolith and (2) KREEP basalt, which is a composition enriched in potassium (K), phosphorus (P) and rare Earth elements (REE). The mineralogical composition and density estimates are discussed relative to the presence of anorthositic layers in the Earth's deep interior.

詳細は当センターホームページ： http://www.ehime-u.ac.jp/~grc/をご覧ください
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