Application of Scientific Data obtained by Kaguya and lunar materials for Promotion of Scientific Education.

Hiroshi Takeda[1]; Akira Yamaguchi[2]; Tomoko Arai[2]; Makiko Ohtake[3]

[1] Chiba Inst. of Tech.; [2] NIPR; [3] ISAS/JAXA

http://wm.it-chiba.ac.jp

In order to promote regional science education, we have performed a class room on sciences at local school by retired university professors such as one of the coauthors. We have shown preliminary photographs acquired by Kaguya combined with our mineralogical and geological findings of the lunar meteorites from the far side in conjunction with a new model of the lunar crust formation. Magnesian anorthosites from the far side moon was selected as a representative stone of the far side moon , because we have just found such a lunar meteorite from the hot desert of Oman. Remote sensing data indicate that the nearside and the farside of the Moon are substantially different in terms of inferred chemical compositions and rock lithologies [1]. Our discovery of granulitic clasts and magnesian anorthosites in Dhofar 489, 309 [2] and 307 [3] from the lunar farside, produces some problems to support an idea that the major rock type of the northern farside is magnesian anorthosite, because Korotev et al.[4] thought that highly magnasian compositions are characteristic features of the farside anorthosites. More magnesian olivine in these lithologies in Dhofar 489 group, discussed here may be another important component representing the the farside crust or mantle, but they were now converted into some granulites, impact melt crystalline rocks as were found in Dhofar 307 and 309. We may have to find a method to identify such lithologies by remote sensing methods.

The granulitic and troctoritic clasts include possible original spinel toctorite, impact melts and metamorphosed granulitic material. These clasts may have been produced in the same impact event of a large crater and excavated by another impact and incooperated into the Dhofar 489 site. It is important to find distribution of magnesian olivines around a large crater and to distinguish true magnesian anorthosites (Fo 76-79) of the magma ocean origin from the modified troctoritic ones (Fo 83-86) by the Kaguya mission.

References:

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