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Composition of the extremely plagioclase-rich lunar upper crust: Results of the SELENE spectral data

Makiko Ohtake[1*], Yasuhiro Yokota[1], Junichi Haruyama[1], Tomokatsu Morota[1],
Tsuneo Matsunaga[2], Satoru Yamamoto[2], Ryosuke Nakamura[3], Takahiro Hiroi[4],
Hiroshi Takeda[5], Yoshiko Ogawa[6]

[1]JAXA/ISAS, [2]NIES, [3]AIST, [4]Brown University, [5]Chiba Institute of Technology, [6]The University of Aizu

We reported presence of the extremely feldspathic rocks with nearly 100% crystalline Fe-bearing plagioclase (Purest anorthosite; PAN) throughout the lunar highland by conducting spatial and spectral analyses of 70 locations using multiband imager (MI) data for the SELENE (KAGUYA) mission. In this study, we further surveyed the distribution of the purest anorthosite over the entire lunar surface by using continuous reflectance spectra derived by the SELENE Spectral Profiler (SP) and MI data. About 400 data sets were recognized as PAN rocks. The PAN rocks are distributed globally and relatively homogeneously within the highland region. The PAN rocks were found both on the near side and the far side, but on the near side the presence appears to be limited to locations around rims of large basins compared to the more randomly distributed far side distribution which is consistent to the previous study.

Keywords: moon, Kaguya, SELENE, Multiband Imager, anorthosite