



Global feature of HF radar reflected from lunar surface derived from Kaguya/LRS

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To obtain information on the subsurface geological features of the Moon, the Lunar Radar Sounder (LRS) experiment has been carried out onboard the Kaguya spacecraft. From the data from an early period of the middle Dec. 2007, we found clear evidence of subsurface strata extending below the near side maria regions[Ono et al., submitted]. The purpose of this study is to better understand the surface echo to provide a global survey of the geological features of the lunar surface by applying HF radar method. The echo intensity from lunar surface in the mare regions represents strong reflection. In contrast, that in the highland regions shows weak reflection. The echo intensity of LRS radar map has a good correlation with FeO weight percent map derived from Lunar Prospector in mare regions. We also investigated the region between Orientale basin and Oceanus Procellarum to propose that the LRS could extend a lower boundaries of the cryptomaria or mixed zone between mare material and highland terrain. To identify the extensive region of the cryptomaria, a context for comparison of backscatter and geochemical properties needs to be distinguished. Mapping these buried basalts using long-wavelength radar is important for understanding regional stratigraphy and the history and extent of lunar volcanism.