

Lunar Radar Sounder Observations of Subsurface Layers under the Nearside Maria of the Moon

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For the purpose of obtaining information on the subsurface geological features of the moon, the Lunar Radar Sounder (LRS) experiment has been carried out on-board the KAGUYA (SELENE) spacecraft. From the data from early period of the LRS observation from middle of December 2007, we found clear evidence of subsurface strata extending below the nearside maria regions. We checked the multi-orbit data over the Mare Serenitatis separated by 2-3 km in longitudinal direction to confirm the subsurface signal. Subsurface strata have a depth of several hundred meters from the surface boundary. The measured depth is almost consistent with previous work by DeHon and Waskom (1976). Comparison with the Apollo 17 ALSE experiment showed a significant difference in the depth of subsurface strata. We concluded that the ALSE data should be reexamined, especially in the shallow part of the imagery avoiding any effects due to over-stacking.