

Global Mapping of chemical abundance of lunar surface material by SELENE gamma-rayspectrometer

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Elemental composition on the surface of a planet is very important information for solving the origin and the evolution of the planet and also very necessary for understanding the origin and the evolution of solar system. Planetary gamma-ray spectroscopy is extremely powerful approach for the elemental composition measurement.

Gamma-ray spectrometer (GRS), which will be on board SELENE, advanced lunar polar orbiter, employed a Ge detector as the main detector, therefore it will enable us to observe compositions of more elements (Th, Fe, O, Si, Mg, Al, Ca, K, U, Ti, etc.) on the moon than past Apollo missions and Lunar Prospector had done. The GRS will observe the whole area of the moon including the polar region and will provide the global mapping of the elemental composition of lunar surface material for more chemical element than Lunar Prospector did, with higher sensitivity.

We will discuss the major topics of lunar science expected to be achieved by SELENE/GRS observation.