

Instrumental performance and present status of development of Active X-ray Spectrometer for future lunar landing mission

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Recent Chinese lunar landing mission (Chang'E 3) was successful in landing on the surface of the Moon after their twice successful remote observations. The landing mission investigated the elemental compositions of landing sites in more detail, and obtained new "ground truth" by using alpha particle X-ray spectrometer, which could have not been provided by any returned samples. The compositions of major elements as Mg, Al, Si, K, Ca, Ti, Fe of landing site help us to understand its petrogenesis and evolution. In Japan, the global investigation of Kaguya promoted our knowledge and understanding of the origin and evolution of the Moon. The landing and/or sample-returned missions in the future will be followed in order to investigate the geology in more details, in the next.

We have been developing the active X-ray spectrometer (AXS) as elemental analyzer on site, in order to prepare for future lunar landing mission. Present AXS consists of active X-ray generators with pyroelectric crystal (LiTaO_3), and a silicon drift detector (SDD). Here, the present status of development is reported, and the instrumental performance of AXS and the observation targets of AXS will be discussed.

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