

## Current status and initial results of the X-ray spectrometer onboard SELENE (Kaguya)

# Tatsuaki Okada[1]; Hiroaki Shiraishi[1]; Kei Shirai[2]; Yukio Yamamoto[1]; Takehiko Arai[1]; Kazunori Ogawa[3]; Masatsuna Iwasaki[4]; Taichi Kawamura[5]; Manabu Kato[6]; Okada Tatsuaki XRS Team[7]

[1] ISAS/JAXA; [2] ISAS; [3] Dept. of Earth and Planetary Sci., Titech.; [4] Earth and Planetary , titech; [5] Earth and Planetary Sci., Tokyo Univ.; [6] JAXA; [7] -

<http://planeta.sci.isas.jaxa.jp>

We present here the initial results and status of observation by the X-ray spectrometer XRS onboard SELENE (Kaguya). The XRS has its objective to determine major elemental composition of lunar surface and its regional distribution. The results are fundamental information on the study of lunar origin and evolution. The XRS observes the fluorescent X-rays excited by solar X-rays, characteristic of major elements in the upper most surface layer of the Moon.

The XRS consists of XRF-A (the main sensor observing the X-rays off the lunar surface), SOL-B (the direct solar X-ray monitor), SOL-C (the X-ray fluorescence calibration with a standard sample plate), and XRS-E (electronics). SOL-B and SOL-C is mounted on the same unit called SOL-BC.

The XRS is a CCD-based X-ray fluorescence spectrometer with appropriate energy resolution to discriminate each X-ray fluorescence line spectrum. CCD is the most suitable detector for our purpose that has both of a sufficiently good energy resolution when cooled and a large detection area. A great large area (100 cm<sup>2</sup>) is easily available when arrayed.

After insertion of lunar orbit of the SELENE orbiter, the XRS has finished its initial checkout and started observation. It is the period in solar minimum and in quiescent solar activity. But the activity is much fainter than forecasted in 2004 by NOAA, and it still remains too low to conduct the observation as planned. However, the instrument checkout and adjustments of parameters have been done in orbit to show good performance, waiting for the good opportunity such as solar flare or increase of solar activities.

We will present the status and initial results including the latest ones.