[EE] Evening Poster | P (Space and Planetary Sciences) | P-PS Planetary Sciences

# [P-PS03]Small Bodies in the Solar System: Current Understanding and Future Prospects

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Wed. May 23, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)
In this session, we welcome presentations regarding small bodies in the Solar System from a variety of approaches (i.e., laboratory experiments, observations, explorations, theoretical modeling, and sample analyses). Especially this year, the Hayabusa2 spacecraft is about to rendezvous with its mission target (Ryugu, C-type asteroid), and ready to make remote-sensing observations for acquiring detailed information of the primordial body. Taking account of the situation, we aim to organize our current understanding of these primordial bodies and further discussing future prospects in this research field.

# [PPS03-P09]Sensitivity measurement of visible spectroscopy camera onboard the Hayabusa2 spacecraft

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Hayabusa2 is a sample-return mission to the C-type asteroid Ryugu. Organic matter and hydrous materials that might have been brought to the primitive Earth may be present in C-type asteroids. Previous ground-based observations of asteroid Ryugu [Vilas, 2008] suggest the presence of the 700 nm absorption band, which indicates the presence of hydrous materials, but detection of the 700 nm absorption band does not occur for every observation. Therefore, it is inferred that hydrous materials are distributed in only limited areas. We need to identify these areas and return samples from one of them. The Hayabusa2 spacecraft has three optical navigation cameras (ONC), two wide-angle cameras (ONC-W1, W2) and a telescopic camera (ONC-T). The Hayabusa2 spacecraft performs multi-band spectral observations using ONC-T, which can reveal the distribution of matter on asteroid Ryugu. Thus, it is important to confirm the detectability of the 700 nm absorption from multi-band spectral observation.
The sensitivity of the charged coupled device (CCD) image sensor of the ONC-T changes with temperature change. The CCD sensitivity at room temperature was measured during a preflight test [Kameda et al., 2017], but the CCD temperature at the asteroid observation at home position (HP; altitude 20 km) is −30 °C. Thus, in this study, we measured CCD sensitivity at −30 °C using inflight data of stars. Moreover, we compared the CCD sensitivity measured from the star data with that from the preflight data and that from other celestial bodies (Moon, Jupiter) and evaluated the validity.