# Reflectance estimation of asteroid Ryugu using MASCOT

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Hayabusa2 is a sample-return mission for the C-type asteroid 162173 Ryugu. Hayabusa2 arrived at Ryugu on 27 June 2018, and various observations are still being conducted. Hayabusa2 performs multiband spectral observation by employing the optical navigation camera telescope (ONC-T)and can thereby obtain spectral map of Ryugu, which enables the study of material distribution and degree of space weathering of Ryugu. However, the sensitivity of ONC-T has been previously calibrated by incorporating the inflight data of stars with significant uncertainty. Hence, the authors aim to estimate the reflectance of Ryugu by employing Mobile Asteroid Surface Scout (MASCOT).
MASCOT comprises four instruments (MASCAM, MicrOmega, MARA, and MASMAG) that are employed for analyzing the soil of Ryugu. The upper side of the MASCOT landeris coated with white paint, and its spectral image was captured by ONC-T after its release from Hayabusa2 to Ryugu. The authors conducted on-ground reflectance measurement of a white plate whose white paint is identical to that of MASCOT. Hence, the primary objective of the proposed study is to estimate the reflectance of Ryugu by comparing MASCOT’ s white side’ s spectrum captured by ONC-T with the on-ground reflectance measurement of the white plate that has identical paint as MASCOT, and thus evaluate the validity.

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