

IAF SPACE EXPLORATION SYMPOSIUM (A3)
Small Bodies Missions and Technologies (Part 1) (4A)

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THE LANDING AND IN-SITU OBSERVATION OF (162173) RYUGU BY THE MASCOT LANDER

Abstract

On Oct 3rd, 2018, the MASCOT lander has been deployed successfully by the Hayabusa2 spacecraft from an altitude of 51m onto C-type near-Earth asteroid (162173) Ryugu. After a free-fall of approx. 6 minutes MASCOT has experienced its first contact with the asteroid. The lander underwent a bouncing phase of 30 minutes before it finally came to rest at its first settlement point where it entered into its on-surface operational mode. The lander was able to perform science measurements with its payload suite at 3 locations on Ruygu. After 17 hrs of operation, the MASCOT mission terminated with the last communication contact. The lander was jointly developed by the German Aerospace Centre (DLR) and the Centre National d'Etudes Spatiales (CNES). The four payloads are provided by DLR Berlin (MasCAM wide-angle camera with colour illumination and MARA thermal IR radiometer), IAS Paris (MicrOmega hyperspectral IR soil microscope) and TU Braunschweig (MasMAG magnetometer). The paper will outline the path of the lander on the asteroid and present a summary of the scientific observations. These first results are related to the progress of the Hayabusa2 mission and its MINERVA-II rovers on the background of a recap of the landing site selection process.