

Design and development of Multi-band Camera proposed for SLIM mission

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Smart Lander for Investigating Moon (SLIM) is being planned by Japan Aerospace Exploration Agency (JAXA). SLIM aims to research and demonstrate the engineering key issues related to the smart landing on the gravitational planets. They are precise guidance algorithm, vision based navigation, smart landing gear. By doing SLIM mission, we expect to achieve the paradigm shift in the field of celestial body landing from 'landing where easy to land' to 'landing where desire to land'. This paradigm shift requires a number of novel technologies, and it is reasonable to demonstrate with the small lander at first. We proposed Multi-Band Camera (MBC) for SLIM lander. MBC is a compact VIS-NIR camera composed of an imaging sensor (InGaAs), a filter-wheel with 10 band-pass filters, and a movable mirror for panning and tilting. Scientific objectives of MBC are rock-forming mineral identification and rock texture observation for rocks around the lander. The design of MBC, the state of development, and the idea of scientific operation will be presented.

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