

IAF SPACE EXPLORATION SYMPOSIUM (A3)
Moon Exploration – Part 1 (2A)

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JAPANESE LUNAR POLAR EXPLORATION MISSION

Abstract

The Japan Aerospace Exploration Agency (JAXA) launched the lunar orbiter Kaguya (SELENE) in September 2007. As the next step of Japanese moon exploration program, a small lunar lander SLIM (Smart Lander for Investigating Moon) which aims technology demonstration of the precise landing is planned to be launched around 2020. In addition, from the viewpoint of exploring for lunar resources, especially cold-trapped volatiles in lunar polar regions, a landing mission that investigate lunar volatiles such as water ice using a rover is being studied in JAXA. Volatile materials under the surface are expected to be useful for future human activity on the Moon, and will reveal the history of the Solar System. And also, polar region is one of the best candidates of the lunar base because of long duration sunlit. According to the present design the spacecraft configuration consists of two major sections, a lander system with an expendable propulsion module, and a rover system optimized for lunar polar exploration. Though the main purpose of the mission is resource prospecting relating to future lunar exploitation, it is also expected to perform in-situ scientific observations and environmental investigations for future lunar utilization. This paper details present study status of the polar exploration mission.