SPACE EXPLORATION SYMPOSIUM (A3)
Moon Exploration – Part 2 (2B)

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THE ESA LUNAR LANDER MISSION

Abstract

The European Lunar Lander mission, targeted for launch in 2018 and a landing near the Moon's South Pole, shall demonstrate critical technologies associated with planetary landing and shall prove Europe's ability to land safely and precisely. The mission will also provide an opportunity to conduct experiments and investigations on the Lunar surface of relevance for future human exploration. The mission design avoids the use of radio-isotope devices, instead exploiting potential favourable locations near the Lunar South Pole which offer near-continuous solar illumination for several months at a time. However targeting such favourable locations imposes important challenges on the precision of the landing and on the necessary hazard avoidance capability.

The mission is currently in Phase B1 which shall run up to early 2012 and which includes both mission and system definition and design, as well as an important element of hardware breadboarding and testing. An important intermediate milestone is the Polar Landing Review in early 2011 at which the system design shall be reviewed and compared against the latest available surface topographic information, currently being acquired by NASA's Lunar Reconnaissance Orbiter.

This paper provides an overview of the mission, its objectives, key technical challenges and the baseline configuration arising from the Polar Landing Review. It also provides a description of the ongoing and planned technology activities carried out as part of the Phase B1 and other relevant ESA activities.