

SPACE EXPLORATION SYMPOSIUM (A3)
Space Exploration Overview (1)

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ESA STRATEGY FOR EXPLORATION AND THE LUNAR LANDER MISSION

Abstract

As part of ESA's Aurora Exploration programme, the Agency has defined, since 2001, a road map for exploration in which, alongside robotic exploration missions, the International Space Station (ISS) and the Moon play an essential role on the way to other destinations in the solar system, ultimately to a human mission to Mars in a more distant future. In the frame of the Human Spaceflight programme the first European Lunar Lander Mission, with a launch date on 2018, has been defined, targeting the lunar South Pole region to capitalise on unique illumination conditions and provide the opportunity to carry out scientific investigations in a region of the Moon not explored so far. The Phase B1 industrial study, recently initiated, will consolidate the mission design and prepare the ground for the approval of the full mission development phase at the 2012 ESA Council at Ministerial. This paper describes the mission options which have been investigated in the past Phase A studies and presents the main activities foreseen in the Phase B1 to consolidate the mission design, including a robust bread-boards and technology development programme. In addition, the approach to overcoming the mission's major technical and environmental challenges and the activities to advance the definition of the payload elements will be described.