

On Robotic Lunar Precursor Missions of the Office of Exploration: Letter Report | Space Studies Board, Division on Engineering and Physical Sciences | 9780309122825 | National Academies Press, 1992 | 1992 | 4 pages

Robotic missions followed by human exploration missions have been proposed as an effective strategy for surface exploration (e.g., [1, 2]). Our goal is to define the geophysical signature of the crater to better constrain a forward model that we are building, ultimately to understand the geological processes implied in the formation and evolution of meteorite impact structures on Earth and other solid planetary bodies of our solar system. [more]. Recent Lunar missions and new scientific results in multiple disciplines have shown that working and operating in the complex lunar environment and exploiting the Moon as a platform for scientific research and further exploration poses major challenges. Underlying these challenges are fundamental scientific unknowns regarding the Moon's surface, its environment, the effects of this environment and the availability of potential resources. The European Lunar Lander is a mission proposed by the European Space Agency to prepare for future exploration. The mission provides an opportunity to address Robotic Precursor Mission Requirements. Human safety Engineering Demonstrate key technologies Deliver Infrastructure. Recent Exploration Architecture Studies. Office of Exploration. 1988 Case Studies. Human Expedition to Phobos Human Expedition to Mars Lunar Observatory Lunar Outpost to Early Mars Evolution. 1989 Case Studies. Lunar Evolution Mars Evolution Mars Expedition. Lunar & Mars Program Office. NASA 90-Day Study 1989. Approach A Balance and speed Approach B Earliest possible Mars landing Approach C Reduced Earth logistics Approach D - Relaxed mission dates Approach E Reduced scale. The Synthesis Group 1991. This study, commissioned by the National Aeronautics and Space Administration (NASA), examines the role of robotic exploration missions in assessing the risks to the first human missions to Mars. To ensure that it was including all previously identified hazards in its study, the Committee on Precursor Measurements Necessary to Support Human Operations on the Surface of Mars referred to the most recent report from NASA's Mars Exploration Program/ Payload Analysis Group (MEPAG) (Greeley, 2001). The committee concluded that the requirements identified in the present NRC report are indeed the only ones essential for NASA to pursue in order to mitigate potential hazards to the first human missions to Mars. Consensus Study Report: Consensus Study Reports published by the National Academies of Sciences, Engineering, and Medicine document the evidence-based consensus on the study's statement of task by an authoring committee of experts. Reports typically include findings, conclusions, and recommendations based on information gathered by the committee and the committee's deliberations. Each report has been subjected to a rigorous and independent peer-review process and it represents the position of the National Academies on the statement of task. Close. Overview.