

HUMAN EXPLORATION OF THE MOON AND MARS SYMPOSIUM (A5)
Strategies to Establish Lunar and Mars Colonies (1)

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FROM PRECURSORS TO COLONIES: ILEWG ROADMAP TO THE INTERNATIONAL LUNAR
BASE

Abstract

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We review the roadmap for robotic and human exploration of the Moon, starting with recent missions results (SMART-1, Kaguya, Chang'E1, Chandrayaan-1) and key issues. We review how to perform new science, to acquire knowledge to make the Moon habitable (using advanced and sustained technological support), and expand life beyond Earth planet of origin. Those science and technology missions will serve as precursor missions for future human exploration of the solar system. From 2010 a series of soft landing missions to the Moon could emplace a global robotic presence with precursor life science experiments. This includes penetrators (such as UK Moon Lite), soft landers (from Japan, China, India, US, Russia, Europe), automatic sample return missions, and large lunar lander logistics missions preparing or supporting an international lunar base. We discuss: Science of the Moon, from the Moon and on the Moon; Technology activities Future Missions to the Moon; Preparation using analogue and simulation activities; Moon testbed for robotic outposts telepresence; Infrastructures deployment and in-situ resources utilisation; Synergies with Mars and solar system exploration; New approaches to the International Lunar Base and long term perspectives.