

Towards the International Lunar Decade

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Abstract

In November, 2014 the participants of the conference "Next Giant Leap: Leveraging Lunar Assets for Sustainable Pathways to Space" issued the International Lunar Decade (ILD) Declaration. The central premises of ILD are: 1. The inspiration for ILD is the International Geophysical Year 1957-8 that marked the first global effort to understand the Earth. ILD is proposed as framework for international cooperation towards permanent presence of humankind on the Moon and beyond. Initially proposed by COSPAR to start on the 50th anniversary of IGY in 2007, global conditions were not favorable. Now, with many countries planning missions to the Moon the decade of 2020-2030 would be appropriate to work towards the strategic goal of making possible permanent presence on the Moon. 2. Economic use of lunar resources is a precondition for sustainable research and commercial activities on the Moon. There is speculation about lunar water and asteroid resources, but no business case for use of space resources has so far been offered. Markets for space resources do not exist. Technologies to mine and process space resources need to be developed. Even the legal right to use space resources within existing space law is uncertain. Recent developments suggest that a business case for lunar resources can emerge over the next few years. Space-Based Solar Power (SBSP) can both accelerate lunar development while creating markets for the use of lunar resources to meet needs on Earth. Recent designs of SBSP promise electrical costs competitive with other alternatives with zero CO₂ emissions. An early application with commercial potential could be a Lunar Power Utility that could lower costs and speed up lunar development. Lunar water is another promising resource. Low cost launch from the lunar surface is key to realizing the economic potential of lunar resources. Additionally, the issue of rights to use lunar resources, particularly as commercial products, remain to be addressed.

The ILD provides an open framework to coordinate space exploration and space science research involving national space agencies, research centers, and universities with activities undertaken by international organizations including the International Council for Science, COSPAR, UN COPUOS, and various commercial and private organizations. Similar to IGY national research organizations would initiate their own projects within the general ILD framework.

The Moon Village Association provides a structure to link between lunar exploration and research and commercial developments into a mutually augmenting whole. Moon Village is a bottom-up, open, evolutionary concept for development on the Moon and in cislunar space by an international community including scientific research, business and cultural interests, as well as space agencies and international organizations. Moon Village, however, does not address the policies required to enable use of lunar resources or to engage the global research community, the UN, and other international organizations such as the International Council for Science, which coordinated the IGY. Moon Village and other developments can benefit from the framework for strategically directed international cooperation from 2020 to 2030 provided by the ILD to: develop internationally accepted policies for use of space resources, foster innovation and the development of enabling technologies and infrastructure aimed at driving down the costs of activities in cislunar space and on the Moon, and facilitate the creation of markets for space resources. Adoption of the ILD framework by the International Council for Science (ICSU) and UN COPUOS, as well as by ISECG and other forums for international cooperation in outer space can lead to greater progress in the 2020-2030. The ultimate purpose of ILD is to maximize the international benefits of lunar exploration and development. Key to this is to engage the public globally, particularly students and young people.