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# A PROPOSED INTERNATIONAL LUNAR GEOPHYSICAL YEAR

**Abstract**

Purpose: We discuss the proposed International Lunar Geophysical Year (ILGY) based on work being done in the new phase of lunar surface scientific exploration that has the potential to greatly enhance basic scientific understanding of solar system formation and current processes. Proposed lunar ISRU would apply this understanding to open cislunar space and the lunar surface for the economic utilization of the Earth's population [1,2,3]. Several fortuitous developments have combined to present unique opportunities to advance this agenda through the proposal for a declaration of an International Lunar Geophysical Year [4]. International Interest in the Moon: International interest and momentum for lunar exploration is at its highest since the days of the cold war, and the US-Soviet race to the Moon. In the last decade lunar orbital spacecraft have revolutionized prior understanding of the Moon with regard to the presence and abundance of frozen volatiles, the processes underlying their presence, and other fundamental characteristics including the fact that it contains the coldest known surfaces in the solar system. Additional Opportunities for Lower Lunar Mission Price Points: Recently, Russell Cox of Flexure Engineering proposed an International Lunar Geophysical Year during 2017/2018 when the latest international landers were scheduled to advance both the scientific and commercial agendas [4]. To these currently approved international lunar landers landings might be added a number of other low cost missions growing out of the Google Lunar X-Prize competition. First are missions such as those which hopefully will fly successfully to the lunar surface. Astrobotics and Moon-X for example can carry a number of small payloads and small craft. This capability will bring the price point for instrument delivery to the lunar surface to approximately 1M dollars per kilogram. Small payloads of just a few kilograms could therefore cost in the single digit million dollar range. Second are small lunar orbital and or surface lander missions costing in the low tens of millions of dollars. Such missions are within the reach of smaller countries in collaboration and similarly with many institutional budgets. References: [1] NRC, 2007, SCEM, www.nap.edu/catalog/11954.html; [2] Shearer, 2012, LEAG, 1685.pdf; [3] NLSI, 2013, Microsymposium 54; [4] Cox et al, 2012, LEAG, 2001.pdf;