

Back to the Moon Workshop Report

21-22 June 2017, Lunar & Planetary Institute, Houston.

Executive Summary

- There are many private sector companies that have aspirations to do things on and around the Moon. We heard from several of them at the meeting. No one has flight proven capability.....yet, but the first commercial expedition has regulatory approval for late this year.
- Many of these capabilities will enable real economic development of cislunar space and real wealth creation.
- We heard universal agreement that the following were the greatest challenges to further progress in commercial lunar missions:
 - not having a permanent regulatory framework for commercial lunar missions,
 - NASA transitioning to a customer.

Finding 1: A permanent regulatory framework for commercial lunar missions is part of a current Congressional discussion, embedded in the American Space Commerce Free Enterprise Act of 2017. The ASCFE framework builds on the 'Mission Approval' that Moon Express received from the USG in 2016. The meeting participants fully support these efforts as part of the ASCFE.

Finding 2: NASA can enable rapid development of the commercial lunar industry by offering to be a customer. The sooner NASA does this, the faster commercial capabilities will be developed. The range of capabilities offered would reflect the breadth of investigations that NASA could offer.

- There is a spectrum of services that NASA SMD and HEOMD could buy. For example, transportation services to lunar orbit, transportation to the lunar surface, rover services on the surface through buying samples or data.
- Commercial companies are already taking on scope and risk and will be able to attract more investments if they can show NASA as a customer. NASA can leverage that willingness, save time and dollars by crafting programs that take advantage of the new capabilities offered by commercial lunar companies.

Finding 3: In addition to paying for payload flights, NASA should strongly consider buying transportation services, samples and/or data. In order for this to succeed, the nature of the samples/data required must be adequately specified.

- The benefit of this approach is all the technical and financial risk is on the company. NASA's risk is that the company fails and the ride, data or samples are not available or obtained.
- NASA can mitigate some of this risk by partnering with the company by investing dollars or resources or expertise i.e., establish a public-private partnership.

Finding 4: NASA should consider public-private partnerships for particularly difficult or risky activities to share the risk, increase mission cadence and the probability of success, and enhance the business case for the commercial partner.

- **CONCLUSION:** There is a lot of enthusiasm for commercial lunar missions and capabilities of the private sector could enable a new era of lunar science and exploration.