

ODYSSEY MOON “M-1” MISSION OF OPPORTUNITY– ENABLING SCIENCE, EXPLORATION AND COMMERCE. R. D. Richards, Odyssey Moon Ltd., 300 Interchange Way, Vaughan, Ontario, Canada L4K 5Z8 robert.richards@odysseymoon.com

Introduction: Odyssey Moon is a commercial lunar enterprise supplying payload delivery services to the Moon in support of science, exploration and commerce.

As the world’s first multi-national enterprise dedicated to commercial lunar exploration and development, Odyssey Moon plans to meet near term and long term global market needs for low cost, reliable and frequent lunar access currently unaddressed by large government space programs. By creating alternative commercial lunar delivery products and services that provide rapid mission schedules and standardized systems, our goal is to provide value added commercial lunar missions for our government, academic and commercial customers. World-class technologies will be selected and developed into standardized, scalable turn-key solutions that will supply unprecedented value to diverse international customers seeking reliable and cost effective products and services for lunar activities.

Odyssey Moon has established launch agreements with scientific, educational and commercial organizations worldwide and is recognized by NASA as a potential supplier of Commercial Missions of Opportunity for fundable payload delivery services to the Moon. Odyssey Moon has also entered into discussions with other national space agencies worldwide for the provision of hardware and services on a commercial procurement basis.

This paper addresses the Payload Flight Opportunities provided by M-1 along with updates on company and mission status, plans and financing.

The Mission: “MoonOne” (M-1) is a commercial robotic lander mission to the near side equatorial region of the Moon, in support of science, exploration and commerce. The mission is planned for launch in late 2012 utilizing the Odyssey Lunar Lander, developed from NASA’s Common Spacecraft Bus (CSB) platform. This “Commercial Mission of Opportunity” has a payload manifest comprised of scientific, educational and commercial payloads with approximately 15 kg of payload capacity still available to the international lunar communities for scientific or technology demonstration payloads. We have minimized individual payload expenses through a “condominium” approach to cost sharing of spacecraft resources and common spacecraft elements. As an official Google Lunar X PRIZE mission, M-1 is the first of a series of mission opportunities designed to enable low cost,

rapid, and frequent access to the Moon for government, academic and commercial customers.

The Odyssey M-1 spacecraft processing and launch will occur in the United States with the support of an experienced launch partner in coordination with Odyssey Moon’s prime contractor MDA.

Mission baseline: The Odyssey Moon reference mission includes the following baseline elements*:

- Near side equatorial landing site focused on regions containing dark mantle deposits
- A single platform fixed lander
- Operation during a single lunar day

Payload Manifest:

- Raman/LIBS (TNO “Moon4You”)
- International Lunar Observatory (“ILO-X”)
- UK Educational (ISSET “Moonlink”)
- Plant Biosphere (Paragon “Lunar Oasis”)
- Memorial Payloads (Celestis)
- Google Lunar X PRIZE instruments
- Additional payloads TBD

NASA Partnership: Odyssey Moon Ventures LLC has partnered with NASA for the development of its “Odyssey” modular commercial lunar lander system based on the NASA Ames Common Spacecraft Bus. This unique public-private partnership combines NASA expertise with commercial space paradigms, resulting in new industrial capabilities for the company and benefits to the American space program.



Image Credit: NASA Ames & Odyssey Moon Ltd.