

**ISPACE'S 2022 MISSION AND FUTURE COMMERCIAL CAPABILITIES FOR LUNAR SCIENCE MISSIONS.** K. Acierno<sup>1</sup> and K. O'Neill.<sup>1</sup> | <sup>1</sup>ispace technologies U.S. Inc., 3001 Brighton Blvd., Suite 153, Denver, CO 80216, [kyle.acierno@ispace-us.com](mailto:kyle.acierno@ispace-us.com)

### **Introduction:**

The advent of the Commercial Lunar Payload Services (CLPS) program and the general maturation of lunar exploration is providing revolutionary access to the lunar surface for landed science missions. The Lunar Exploration Analysis Group (LEAG) has previously recognized the value of international and commercial partners and encourages the sharing of information between industry and academia.

### **ispace Background:**

ispace inc. endeavors to expand humanity's economic sphere beyond Earth by discovering and utilizing resources on the Moon. Utilization of lunar resources, particularly water ice, will be crucial to the economic development of cislunar space and enabling further human exploration to the Moon, Mars and beyond.

Over the past five years, ispace inc. has significantly expanded its global presence. In addition to further expanding our headquarters in Tokyo, ispace is proud to have created major subsidiaries in Luxembourg and, as of 2021, the United States. Over the next five years, ispace anticipates a regular cadence of lunar missions, beginning with the M1, M2, and M3 missions.

### **M1 & M2 Update**

First, our presentation will update the lunar science community on progress made towards ispace's M1 and M2 missions facilitated by the Hakuto-R lander currently undergoing assembly and integration in Tokyo and Germany. The presentation will provide an overview of the key science objectives accomplished by our upcoming missions and illustrate the payloads that will be flown to Lacus Somnorum and the Lunar South Polar regions.

### **Novel Capabilities Provided By M3 Lander**

Next, we will describe advancements of ispace's lunar program, showcasing advancements in lander and rover design. The presentation will detail ispace inc.'s expanded

presence in the United States and the plans for our advanced lunar lander program, termed "Mission Three" (M3) which will feature significantly greater capability compared to existing offerings.

We intend to present how our U.S.-based advanced lander program will facilitate future landed science missions and advanced mobility options for the planetary science community over the next five years.

Specifically, we will discuss key lander design features that provide flexibility for lunar payload deployment in multiple regimes.

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