

### **ispace Releases Updates on Progress of Mission 2 and Mission 3**

#### *Leveraging Mission 1 Interim Success, Full-Scale Development for Mission 2 and Mission 3 Under Way*

TOKYO—February 28, 2023—ispace, inc., (ispace) a global lunar exploration company, released significant updates on the progress of its Mission 2, planned for 2024, and Mission 3, planned for 2025.

Valuable feedback such as data and operational experience obtained to this point has already been incorporated into Mission 2 and Mission 3. These two missions, which will contribute to NASA’s Artemis Program, will further improve the maturity of ispace’s technology and business model. Development of the landers and customer payload acquisition for Mission 2, planned for 2024, and Mission 3, planned for 2025, are already in progress.

*This press release contains forward-looking statements. They are based on certain assumptions and forecasts of when this press release was prepared, on the basis of information available to us at the time such statements were made. These statements and assumptions may not be objectively correct or may not be realized in the future.*

#### **Mission 2 Update**

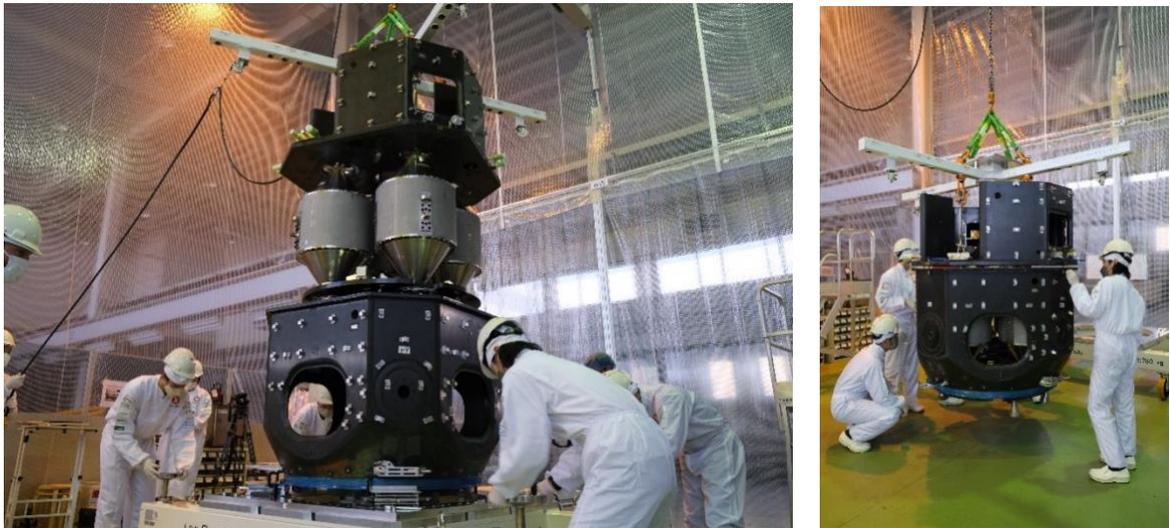
Mission 2, part of the HAKUTO-R lunar exploration program, will serve as the company’s second technological demonstration with the objective of further validating the lander’s design and technology, as well as ispace’s business model to provide reliable lunar transportation and data services, based on lessons learned from Mission 1.

In addition, Mission 2 will serve as an initial test of its resource exploration activity, a set of core measurements to drive the company’s mid-to-long term vision to develop the cislunar ecosystem. The M2 lander will carry commercial payloads as well as ispace’s own micro rover, in furtherance of the company’s data service. Mission 2 will involve collection of lunar data from both the lander and micro rover that will be applied to tools and applications, which will be provided as a service to potential customers for future mission planning and lunar surface development. The tools are planned to be developed utilizing data that will be collected from Mission 1 and synthesized with publicly available data from government space agencies as a basis for the future database platform.

The micro rover is planned to be equipped with a collection device to capture lunar regolith, with the expectation of fulfilling the company’s second lunar regolith contract with NASA. The contract awarded in December 2020, to ispace EU, calls for the collection of lunar regolith to complete an “in-place” transfer ownership to the U.S. space agency.

ispace today announced that manufacturing of the Structural Thermal Model (STM) for the Mission 2 lander began earlier this month at a Japan Airlines (JAL) facility at Narita International Airport in Japan. ispace’s Series 1 lander, similar to the Mission 1 design, will be used for

Mission 2. A manifest of its commercial payload customers for its second mission was also released. Once the STM of the Mission 2 lander is completed and undergoes testing, ispace expects to begin a portion of flight model assembly in Germany in April. Further integration and assembly is planned to occur in Japan.



Photos of the structural thermal model of the HAKUTO-R M2 lunar lander being assembled at a Japan Airlines Facility in Narita Airport.

### **Mission 2 Payloads Update**

The payloads represent ispace's ability to attract a diverse group of customers interested in business development on the lunar surface. In addition to the ispace's own micro rover, the payloads include multiple scientific experiments involving an attempt to conduct the first-ever water-splitting operation on the Moon, an experiment to test for radiation in deep space, and a proof-of-concept demonstration involving the world's first food production experiment.

Payloads to be delivered to the lunar surface include:

- Takasago Thermal Engineering Co. Ltd.

Takasago Thermal Engineering Co. Ltd., Japan's largest company specializing in heating, ventilation and air conditioning (HVAC), will transport equipment, now in development, to the lunar surface to attempt to conduct the first-ever water-splitting based on the company's proprietary technology.

Takasago, headquartered in Tokyo, Japan, has served as a corporate partner of ispace's HAKUTO-R lunar exploration program since 2019.

- Euglena, Co. Ltd.

Euglena Co. Ltd., a bio-venture company based in Tokyo, succeeded in 2005 in establishing the world's first outdoor mass cultivation technology of the micro-algae Euglena for food production. Now, the company is planning to transport a self-contained module equipped with

observation functions to the Moon to conduct the world's first food production experiment on the lunar surface. The module will be used to cultivate micro-algae and conduct experiments for future food production in space.

- National Central University, Taiwan: Deep Space Radiation Probe

The Department of Space Science and Engineering at Taiwan's National Central University is developing a Deep Space Radiation Probe to autonomously measure radiation doses and radiation induced bit errors during the mission. The experimental unit will be integrated onto the lander's top panel as a payload and will be able to send data to mission control for future scientific studies of the space environment and its effects on electronics and biological organisms.

### **Mission 3 Update**

Currently, ispace US is conducting the remaining Series 2 lander development and qualifications. To support communications on the far side of the Moon, the Mission 3 lander will deploy two communications relay satellites, which are designed to remain in lunar orbit for multiple years. Propulsion testing for the Series 2 lander has begun and further announcements are expected in the near future.

While the Series 2 lander leverages lessons learned from the company's Series 1 lander, it is an evolved platform representing ispace's next generation lander series with increased payload capacity, enhanced capabilities and featuring a modular design to accommodate orbital, landed, or rover payloads.

### **Mission 3 Payloads Update**

In July 2022, Team Draper was awarded a NASA CLPS payload contract worth \$73 million USD to carry scientific missions to the lunar surface. ispace technologies, U.S. (ispace U.S.), serving as Team Draper's design agent and subcontractor, has been in the full-scale design phase of the Series 2 lander to be utilized for the mission.

In addition to the NASA scientific payloads, ispace is currently seeking commercial payload customers and is currently negotiating final payload service agreements<sup>1</sup> with the following company:

- AstronetX PBC

AstronetX and ispace are currently negotiating a payload agreement to fly the first AstronetX Lunar-based Camera (L-CAM) to the lunar surface in 2025. L-CAM is a wide-field survey camera that will enable precise photometry and astrometry of transient sources, as well as measurements of the lunar exosphere background emission. The data gathered by L-CAM

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<sup>1</sup> The negotiations and interim payload service agreements indicated above are non-binding, and there is no assurance that ispace will enter into binding agreements. Even if binding agreements are reached, the payload masses under such agreements may differ from the masses or descriptions indicated above.

would provide valuable insights into the Moon's uniqueness as an observing platform, advancing research in astronomy and solar system science, monitoring the lunar environment, and helping to ensure safety of flight for missions in cislunar space.

In addition to the payload customer mentioned above, as of Feb 2023, ispace has reached several interim payload service agreements<sup>1</sup> with the following three companies:

- ArkEdge Space, Inc.

ArkEdge Space, a company that promotes a wide range of missions from low earth orbit constellations to deep space exploration using nano-satellites with headquarters in Tokyo, and ispace have agreed to an interim payload service agreement in February 2023 to deliver a 15 kg payload to the lunar orbit.

- Aviv Labs, LLC

Aviv Labs, an Israeli-American team headquartered in Silicon Valley, and ispace U.S. have agreed on an interim payload service agreement in December 2022 to deliver a first of its kind miniaturized greenhouse payload to the lunar surface, and attempt to grow edible plants on the Moon for the first time.

- CesiumAstro, Inc.

CesiumAstro, Inc., an industry leader in active phased array communications payloads for space and airborne systems based in Austin, Texas, and ispace US have reached an interim payload service agreement to carry its innovative active phased array antenna and software-defined communications technology to the lunar surface and lunar orbit.

### **Mission 1 Milestones**

For Mission 1, ispace has set 10 milestones between launch and landing, and aims to achieve the success criteria established for each of these milestones. Recognizing the possibility of an anomaly during the mission, the results will be weighed and evaluated against the criteria and incorporated into future missions already in development between now and 2025. Mission 2 and Mission 3, which also will contribute to NASA's Artemis Program, will further improve the maturity of ispace's technology and business model. Future announcements on progress of milestone achievement are expected to be released once attained.

#	Milestone	Success Criteria per Milestone
1	Completion of Launch Preparations	<ul style="list-style-type: none"> <li>● Complete all development processes of the Series 1 lunar lander before flight operations.</li> <li>● Contract and prepare launch vehicle, and complete integration of lunar lander into the launch vehicle.</li> </ul>
2	Completion of Launch and Deployment	<ul style="list-style-type: none"> <li>● Complete successful separation of the lunar lander from the launch vehicle.</li> <li>● Prove that the lander's structure is capable of withstanding the harsh conditions during launch, validating the design and gathering information towards future developments and missions.</li> </ul>
3	Establishment of a Steady Operation State (*Initial Critical Operation Status)	<ul style="list-style-type: none"> <li>● Establish communication link between the lander and Mission Control Center, confirm a stable attitude, as well as start stable generation of electrical power in orbit. The completion of this step verifies the integrity of lander core systems and customer payloads.</li> </ul>
4	Completion of first orbital control maneuver	<ul style="list-style-type: none"> <li>● Complete the first orbital control maneuver, setting the lander on a course towards the Moon and verifying operation of the main propulsion system, as well as related guidance, control, and navigation system.</li> </ul>
5	Completion of stable deep-space flight operations for one month	<ul style="list-style-type: none"> <li>● Prove that the lander is capable of steady deep-space flight by completing a nominal cruise and orbital control maneuvers over a 1 month period.</li> </ul>
6	Completion of all deep space orbital control maneuvers before LOI	<ul style="list-style-type: none"> <li>● Complete all planned deep space orbital control maneuvers by utilizing gravity assist effects and successfully target the 1<sup>st</sup> lunar orbit insertion maneuver. This stage proves the ability of the lander's deep-space survivability, as well as the viability of ispace's orbital planning.</li> </ul>
7	Reaching the lunar gravitational field / lunar orbit	<ul style="list-style-type: none"> <li>● Complete the first lunar orbit insertion maneuver and confirm the lander is in a lunar orbit, verifying the ability of ispace to deliver spacecraft and payloads into stable lunar orbits.</li> </ul>
8	Completion of all orbit control maneuvers in lunar orbit	<ul style="list-style-type: none"> <li>● Complete all planned lunar orbital control maneuvers before the landing sequence.</li> <li>● Confirm the lander is ready to start the landing sequence.</li> </ul>
9	Completion of lunar landing	<ul style="list-style-type: none"> <li>● Complete the landing sequences, verifying key landing abilities for future missions.</li> </ul>
10	Establishment of a steady system state after lunar landing	<ul style="list-style-type: none"> <li>● Establish a steady telecommunication and power supply on the lunar surface after landing to support customer payloads' surface operations.</li> </ul>

### About ispace, inc.

ispace, a global lunar resource development company with the vision, “Expand our Planet. Expand our Future.”, specializes in designing and building lunar landers and rovers. ispace aims to extend the sphere of human life into space and create a sustainable world by providing high-frequency, low-cost transportation services to the Moon. The company has offices in Japan, Luxembourg, and the United States with more than 200 employees worldwide. ispace U.S. is part of a team led by Draper, which was awarded a NASA Commercial Lunar Payload Services (CLPS) Program contract to land on the far side of the Moon by 2025. Both ispace, and ispace EU, were awarded contracts to collect and transfer ownership of lunar regolith to NASA, and ispace EU was selected by ESA to be part of the Science Team for PROSPECT, a program which seeks to extract water on the Moon.

Established in 2010, ispace operated “HAKUTO”, which was one of five finalist teams in the Google Lunar XPRIZE race. The company's first mission as part of its HAKUTO-R lunar exploration program launched on Dec. 11, 2022, from the United States on a SpaceX Falcon 9 rocket and is currently expected to land on the lunar surface at the end of April 2023. Subsequent missions are in development with launches expected in 2024 and 2025. ispace has also launched a lunar data business concept to support new customers as a gateway to conduct business on the Moon.

For more information, visit: [www.ispace-inc.com](http://www.ispace-inc.com); Follow us on Twitter: [@ispace\\_inc](https://twitter.com/ispace_inc).

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