

Japan space rovers lowered to asteroid to collect data

By Mari Yamaguchi
The Associated Press

TOKYO — A Japanese spacecraft released two small rovers on an asteroid in a mission that could provide clues to the origin of the solar system.

The Japan Space Exploration Agency (JAXA) said the two Minerva-II-1 rovers were lowered from the unmanned spacecraft Hayabusa2 to the asteroid Ryugu. The spacecraft arrived near the asteroid, about 170 million miles from Earth, in June.

Hayabusa2 approached as close as 180 feet to the asteroid to lower the rovers, waited for a minute, and then rose back to its waiting position about 12 miles above the surface. JAXA said the release went successfully.

The solar-powered rovers' voltage plunged as night fell on Ryugu, a sign that they are on the asteroid, said Hayabusa project team spokesman Takashi Kubota.

"We are very hopeful," project manager Yuichi Tsuda said. "I'm excited about seeing the pictures. I want to see the scenery of space seen from Ryugu's surface."



The two rovers, each about the size of a cookie can, are to capture images of the asteroid and measure surface temperatures before a larger rover and a lander are

released later. The rovers move by "hopping" up to 50 feet at a time because the extremely weak gravity on the asteroid makes rolling difficult. They can continue

ASTEROID EXPLORATION. This computer graphic image provided by the Japan Space Exploration Agency (JAXA) shows two drum-shaped and solar-powered Minerva-II-1 rovers on an asteroid. Japanese unmanned spacecraft Hayabusa2 released the two small rovers on the asteroid Ryugu on Friday, September 21, 2018 in a research effort that may provide clues to the origin of the solar system. (JAXA via AP)

jumping as long as their solar panels and power last, JAXA said.

The release bolstered the confidence of project members ahead of more difficult maneuvers in the future, Tsuda said.

Hayabusa2 is scheduled to attempt three brief touch-and-go landings on the asteroid to collect samples in hopes of providing clues to the origin of the solar system and life on Earth. Since it arrived at Ryugu, scientists have been looking for suitable landing sites on the uneven surface, and its first attempt is expected in October.

The spacecraft is set to release a German-French lander called MASCOT carrying four observation devices in early October and a bigger rover called Minerva-II-2 next year.

Hayabusa2, launched in December 2014, is due to return to Earth in late 2020.

First private moon flight passenger to invite creative guests

By Christopher Weber
The Associated Press

LOS ANGELES — After announcing that he'll take the first-ever commercial rocket trip around the moon, Yusaku Maezawa said he wants company for the weeklong journey. The Japanese billionaire said he plans to invite six to eight artists, architects, designers, and other creative people to join him on board the SpaceX rocket "to inspire the dreamer in all of us."

The Big Falcon Rocket (BFR) is scheduled to make the trip in 2023, SpaceX founder Elon Musk announced at an event at its headquarters near Los Angeles.

Maezawa, 42, said he wants his guests for the lunar orbit "to see the moon up close, and the Earth in full view, and create work to reflect their experience."

Musk said the entrepreneur, founder of

Japan's largest retail website, and one of the country's richest people, will pay "a lot of money" for the trip but declined to disclose the exact amount. Maezawa came to SpaceX with the idea for the group flight, Musk said.

"I did not want to have such a fantastic experience by myself," said Maezawa, wearing a blue sports jacket over a white t-shirt printed with a work by the late painter Jean-Michel Basquiat. He said he often mused about what artists like Basquiat or Andy Warhol might have come up with if they'd travelled into space.

"I wish to create amazing works of art for humankind," Maezawa said.

Maezawa didn't immediately say who will be on his guest list for the spaceflight, but in response to a question from a reporter he said he'd consider inviting Musk.

"Maybe we'll both be on it," Musk said

with a smile.

Musk said the BFR is still in development and will make several unmanned test launches before it takes on passengers. The reusable 387-foot rocket will have its own dedicated passenger ship, and its development is expected to cost about \$5 billion, Musk said.

The mission will not involve a lunar landing.

The average distance from Earth to the moon is about 237,685 miles. Astronauts last visited the moon during the National Aeronautics and Space Administration's (NASA) Apollo program. Twenty-four men flew to the moon from 1968 through 1972, and half of them made it to the lunar surface.

NASA is planning its own lunar flyby with a crew around 2023. The space agency also aims to build a staffed gateway near

the moon during the 2020s. The outpost would serve as a stepping-off point for the lunar surface, Mars, and points beyond.

Maezawa, a former musician, founded the retail firm Start Today in 1998 and built it into one of Japan's most successful companies. In 2012, he started the Tokyo-based Contemporary Art Foundation to support young artists. He made headlines in 2016 when he paid more than \$57 million at auction for an untitled work by Basquiat. A year later, he paid more than \$110 million at auction for another piece by the same artist.

Musk outlined a somewhat different SpaceX lunar mission last year. He said then that two people who know each other approached the company about a weeklong flight to the moon and back. Musk did not name the clients last year or say how much

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