

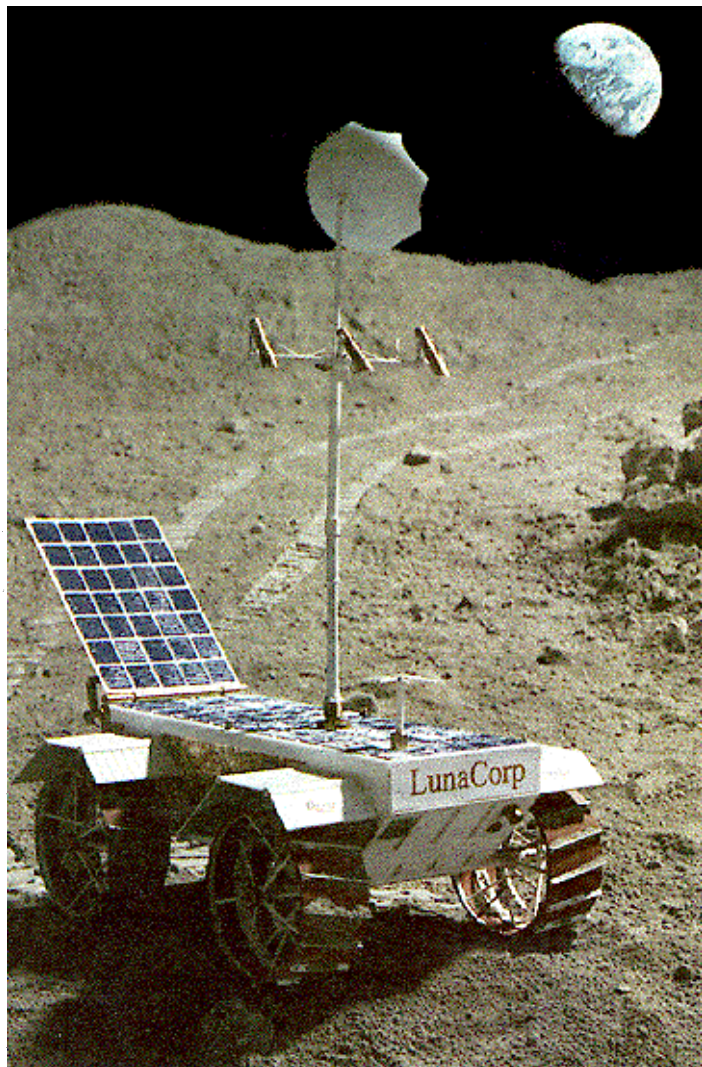
# SPACE NEWS

VOL. 7, NO. 23

JUNE 10-16, 1996

\$3.50 USA, \$5.70 Non-

## LunaCorp Looks for Route to Moon via Japan



RON JONES SPECIAL EFFECTS PHOTOGRAPHY PHOTO

**Shooting for the Moon:** LunaCorp's concept would put two rovers on the lunar surface, which could then be remotely controlled for entertainment.

By LEONARD DAVID  
Space News Correspondent

WASHINGTON — LunaCorp, an entrepreneurial company that hopes to launch a commercial robotic mission to the moon, has found support for its venture in Japan.

Members of a LunaCorp team, under contract to Mitsubishi Corp. of Tokyo, canvassed potential customers in Japan April 20-28 about its moon rover concept, and received substantial interest in the project, said James Dunstan, executive vice president of LunaCorp. Having Mitsubishi's support was key to demonstrating that LunaCorp's commercial reach to the moon is viable, Dunstan told *Space News*.

"We feel we've taken a major step," Dunstan said. The study also determined that an augmented version of Japan's H-2 rocket would be capable of hurling a pair of rovers to the moon, he said. Another achievable goal, Dunstan said, is landing the remotely controlled robotic vehicles on lunar terrain by the end of 1999.

"It's doable to be there at the dawn of the new millennium," but a fast-paced schedule and marketing outreach would be needed to raise upwards of \$220 million, he said.

The Mitsubishi contract — at an undisclosed amount — was a first for LunaCorp. Mitsubishi has made a follow-on proposal to LunaCorp that would ratchet up the Japanese firm's support for the moon rover project. Details of that future work may be announced in a few months, said David Gump, president of Arlington, Va.-based LunaCorp.

Japan's Lunar and Planetary Association, whose membership includes Kawasaki Heavy Industries, Nissan Motor Company's Aerospace Division, and the Shimizu Corp., has served as a major focal point for LunaCorp's marketing outreach, Gump said.

LunaCorp's commercial lunar rover idea is a joint venture with the Robotics Institute of Carnegie Mellon University in Pittsburgh. Several lunar rover designs for LunaCorp have already been assessed by the Robotics Institute, said William Whittaker, chief scientist for the institute. Whittaker was part of LunaCorp's team that visited Japan in April.

One of the concepts behind the remote-controlled moon rover idea is for high-definition, live television images of the moon to be fed back to theme parks and other venues here on Earth where people could pay to be a part of the adventure, Dunstan said.

The LunaCorp rovers, he said, would roll across the lunar terrain, visiting such locales as the Apollo 11 and Apollo 17 landing sites, and a crashed U.S. Ranger 8 mission from 1965. The rovers also could visit Russia's Lunokhod-2 rover, which landed on the moon in 1973.

Other uses for lunar rovers include conducting scientific agendas, such as carrying out astronomy from the moon, gauging and possibly exploiting the moon's resources, and additional commercial endeavors, Dunstan said.

While Mitsubishi is enthusiastic about the idea, further participation in the venture is entirely dependent on LunaCorp attracting sponsors, Mitsubishi spokesman Graham Prince told *Space News* June 4. He described LunaCorp as a small, aggressive venture capital operation, which is relying on the Mitsubishi name to attract investment.

LunaCorp's study for Mitsubishi also reviewed options for powering a lunar rover over day and night cycles on the moon, Whittaker said. Surviving the plummeting temperatures of the lunar night is particularly daunting. Using a large, nuclear-powered radioisotopic thermal generator — like those used on NASA planetary missions such as Galileo and Voyager — would offer the best solution. However, using such a nuclear power source has no precedent in Japan's space program, he said.

"The question of isotopes and its utilization is significant with the Japanese. Obviously, there's an emotional history with nuclear issues," he said. "We looked at an all-solar powered rover. But that design becomes a rolling battery box. It's a ponderous mass. When you are counting on batteries to wake up after every night, there's some suspense involved," Whittaker said.

An intriguing design, Whittaker said, is a rover that is solar powered in the day, and uses small, radioisotope heater units to keep it warm through the lunar night. These pellet-sized quantities of plutonium provide enough thermal energy to critical spacecraft hardware that might be adversely affected by the extremely low lunar temperatures.

That approach has clear technical and environmental merit and also bolsters a rover's prospect for long-term commercial use, he said.

*Space News* correspondent Paul Kallender contributed to this report from Tokyo.