

The Systems Design and Project Status of the HAKUTO Micro Lunar Rover for Possible Skylight Exploration

*Toshiro SHIMIZU¹, Kazuya Yoshida^{2,1}, Nathan John Britton¹, John David Walker², Toshiki Tanaka¹, Daisuke Furutomo¹

1.ispace technologies, inc., 2.Tohoku University

This paper describes the project status of HAKUTO rovers, its systems and the results of the field experiment. HAKUTO is the Japanese team participating in the Google Lunar XPRIZE. This team is consisted of a venture company, Tohoku university and pro bono members.

The Google Lunar XPRIZE is an unprecedented competition, challenging privately funded teams to accomplish three main goals: successfully land a spacecraft on the lunar surface, run the rover on the lunar surface at least 500 meters, and transmit high-definition video and image back to earth. HAKUTO has developed a small and lightweight dual rover system to fulfill the above Google Lunar XPRIZE requirement. Demonstration of rovers' performance in space environment is verified by conducting thermal vacuum testing, vibration testing, and field testing at Nakatajima sand dune. Furthermore, HAKUTO plans to explore caves beneath the lunar surface for potential lunar habitation. Currently, HAKUTO is preparing the Flight Model rovers which are supposed to be launched in 2017.

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