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Author: Mr. Blaze Sanders
JURBAN, United States, blaze.sanders@solarsystemexpress.com

Ms. Kelly Thomas
JURBAN, United States, kelly@thomaszone.com
Ms. Alane Lim
JURBAN, United States, alim11@jhu.edu

GETTING TO THE MOON VIA THE JURBAN GOOGLE LUNAR X PRIZE TEAM

Abstract

This paper provides an overview of a lunar mobile robotic system being developed by the Juxtopia Urban Robotics Brilliant Application Network (JURBAN) team in response to the Google Lunar X PRIZE (GLXP) challenge, which, in the best case, will have twenty-six teams sending robotic systems to the Moon. The JURBAN team is using the "Smaller, Faster, Cheaper" approach developed by NASA's planetary exploration program and leveraging engineering experience from NASA Mars rover missions to achieve engineering goals in a commercially viable way. To make this happen, the JURBAN team has focused on three key elements: corporate sponsorship, commercial payload integration, and ride sharing opportunities. Without all three, sustainability is difficult to achieve. The advantage of corporate sponsorship includes quick funding cycles and a large capital pool, as highlighted by the White Label Space GLXP team. Just ten percent of the annual advertising budget of any of the top 500 companies in the world can finance our lunar mission, and, with a global viewership similar to the Apollo 11 mission in 1969, a NASCAR-like ad spot of our robot will reach a viewership larger than any American Football Superbowl ad.

The JURBAN team has budgeted $32 million dollars, and is using both commercial payloads and ride share opportunities to achieve this goal. This paper will detail the payload interfaces and volumes available to interested scientists, engineers, lawyers, sociologists, artists—anyone... Our capabilities include access to both the weightless vacuum environment of Low Lunar Orbit (LLO) and the high power, thermally stable lunar surface environment. Examples of viable payloads or missions include but are not limited to: micro-spacecraft orbiters, LED and laser art displays, small probes, high impact penetrators, secondary payload surface science instruments, distributed network testing on our swarm robot system, and many more. Our ride to the Moon is being brokered by Space Flight Services of Tukwila, WA, which we are promoting as the best and cheapest way to the Moon. An overview of the company's capabilities and mission profiles will also be described in this paper.