

Puli Space: from grassroots through STEMs to the skies

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Abstract

Team Puli Space, an official GLXP competitor, aims to put a rover on the Moon in the next three years. The Hungarian team relies mainly on voluntary work of a large pool of talented individuals building space-grade equipment in their spare time, and organizing educational events to promote STEM skills in schools. Here we show that today's team was built up by successfully using the GLXP competition to gather talented individuals from all over the country. We also present our model on creating a large fan base by organizing free educational opportunities and competitions for students of all ages. By taking part in the GLXP competition and promoting STEM skills in schools, Puli Space has attracted significant media attention and a steady flow of supporters, thus allowing the program to develop further, getting lunar exploration into the daily media, and promoting a career in sciences in Hungary.

This is a publication of Team Puli Space, official Google Lunar X PRIZE contestant.

1. Introduction

The Google Lunar X PRIZE competition rewards the first privately funded team from its 30 million dollar purse which is able to successfully land a rover on the Moon, travel 500 meters on its surface, and send back high quality imagery of itself and its surroundings to Earth [1]. Additional rewards are awarded to groups covering longer distances, finding water ice, surviving a chilly lunar night, or imaging previous landing sites. The challenge and the extraordinary rewards have attracted a large number of contestants, of which 26 teams are still actively competing for the prizes [2]. Apart from the teams, the challenge has also drawn significant media attention, providing ideal conditions for startup companies of the space industry looking for motivated personnel or forward thinking investors.

Team Puli Space first came to being in May 2010 as an initiative to enter Hungary into the GLXP competition. From private and corporate donations

the group successfully completed the first stage of operations by officially registering for the prize in January 2011 [3], and since then has developed proof-of-concept rover models, a lander unit mockup and an inflatable base module, with a second phase rover prototype and a lunar terrain simulation environment in progress [4].



Figure 1: The official Team Puli Space GLXP logo

2. Building a community

The team has developed a successful strategy using the GLXP for promotion for recruiting talented volunteers to spend their free time designing and building equipment for an actual space mission. The founders first focused on free promotional opportunities and started building up a prominent media presence shortly after start by mostly online means of channeling information. The GLXP competition, and lunar exploration has proven to be an excellent tool to unite talented minds seeking opportunities in sciences. After the first round of recruitment the team started a website and continued to maintain a strong online presence by using web 2.0 such as Facebook and Twitter and frequently publishing press material leading to increased coverage in the national media [5]. Meanwhile, the team has launched the Small Step Club donation service where private sponsors can fund the project through micro-donations; in the corporate world the Puli Launchpad is offered as a marketing instrument

for SMUs [6]. The group also began promoting itself at universities, reaching a steady state of approximately 50 team members by the end of 2011, with about 3-4 volunteers leaving or joining the group on a monthly basis. This pool is large enough to allow a constant development of the Puli rover and expansion of the company, while activity monitoring and a mentor system ensures the productivity of the current personnel.

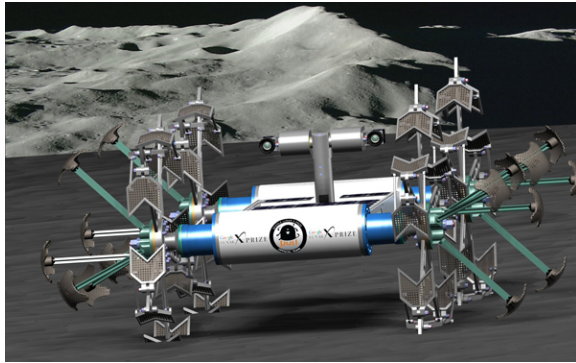


Figure 2: An example rover concept for the Puli

3. Promoting STEM skills

The team has also built up a successful education and public outreach campaign early on, promoting space exploration in primary and secondary schools across the country [7]. During the first six months of the campaign the team has reached more than 2500 students [8] in schools by joining educational roadshows and presenting at science fairs. A high number of articles were also published in educational magazines and on the team website about previous Hungarian achievements in space [9]. Public events were also organized around special celestial occasions such as lunar eclipses, but the 50th anniversary of Gagarin's flight was also commemorated. Response was overwhelmingly positive, leading to a quickly developing fan base interested in lunar exploration and supporting the Puli. The campaign has proven that science, technology, engineering and mathematics (STEM), can be made more interesting for students by visiting presenters giving talks about the history of lunar exploration, the Moon, Mars or related topics and giving them more on-hands experience. The campaign also included a drawing competition, which attracted more than 500 entries [10], and awarded prizes for individuals and school classes alike.

4. Summary and Conclusions

After two years of operation, Team Puli Space has brought space exploration to thousands of students across Hungary, and has obtained a steady number of productive volunteers working on actual lunar equipment while funded largely by donations. This was made possible by the support of the GLXP and has proven that space exploration can unite interested individuals into a successful grassroots initiative. The added benefit of voluntary experts teaching school students sets a precedence that non-governmental organizations can also successfully promote STEM skills for students by placing a Moon mission in the spotlight.

Acknowledgements

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References

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