

EVA Interviews Team “Next Giant Leap” in the Google Lunar X Prize Competition



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Welcome to the third in this series of Lunar Editions of EVA Interviews: The Business of the new Space Age™. To start this series, EVA went directly to the source and [interviewed the Moon](#) about its expectations for future lunar commercial activities. Coming back down to Earth, the second interview focused on the organization whose actions and incentives are most helping to make business on the Moon a reality and talked to [William Pomerantz](#) Senior Director of Space Prizes for the X PRIZE Foundation about the exciting [Google Lunar X Prize competition](#). Now we will talk to the teams themselves who are hard at work, taking the first steps necessary towards expanding commerce beyond Earth, and to the Moon.

The first team to reply is [Next Giant Leap](#) and its founder, Michael Joyce. I met Mike this summer at the [Space Frontier Foundation NewSpace Conference](#) and the [NLSI \(NASA Lunar Science Institute\) 2nd Annual Lunar Science Forum](#), both at NASA Ames in July, and again at the [Space Investment Summit 7](#) in Boston where Mike, along with other impressive members of his team, was one of the Business Plan presenters. I’m delighted to have Next Giant Leap and Michael Joyce as our first Team guest!

EVA: Thank you so much Mike, for participating in the Lunar Editions of EVA Interviews: The Business of the new Space Age™! I am very interested to hear more about the formation of your team. How was your decision made to compete and what do you (and your team) hope to get out of your involvement? How is it going so far?

Michael Joyce: Hi Eva! Well, back in October of 2007, while attending the X PRIZE Cup in New Mexico, I learned of the Google Lunar X PRIZE (GLXP) competition and began to investigate the formation of a team. In November 2007, I founded LunarTrans, LLC and officially submitted the team’s Letter of Intent to Compete. While investigating potential team members, I first met with Dr. Todd Mosher of [MicroSat Systems, Inc. \(MSI\)](#) that December. Working with Todd, over the next year the team grew to include [Draper Labs](#), [MIT](#) and [Aurora Flight](#). As you may know, early in 2008 MSI was purchased by the [Sierra Nevada Corporation \(SNC\)](#) and they’ve continued to strongly support the team. Initially, the team was known only as the “Mystery Team”. This allowed potential team members to work with us discreetly for a time without public commitment. It also resulted in some additional excitement leading up to our unveiling. In December of 2008, at the NASA Ames Research Facility in Mountain View, the team was officially unveiled as “Next Giant Leap” (NGL). The team attended several events in 2009 including the MIT “Giant Leaps” Apollo 11 40th Anniversary celebration, NewSpace 2009, the 2009 SmallSat conference and Space Investment Summit 7. We’re very excited by the recent LCROSS lunar water discoveries as well as the success of the NGLLC NASA prize

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competition. Both of these events have worked to generate renewed interest and support for our team and the GLXP. We are more confident than ever that we will be able to capture the prize by the December 2012 deadline.

EVA: There are indeed numerous exciting events and announcements happening at the moment! Yesterday's [announcement of lunar water from the LCROSS](#) team was a huge one! Wonderful to hear that these positive developments are helping to support you and the GLXP!

Many of my previous guests have pointed out that raising capital is one of the major challenges facing their (or any) company. For Google Lunar X PRIZE contestant companies, I suspect this is especially challenging. Realizing that this is a sensitive topic; that you are involved in a competition; and that fundraising activities are particularly proprietary and secret; are there any lessons you have learned about raising capital that you can share with us? Have you attempted to generate revenue yet through [bootstrapping](#)? If so, how?

Michael Joyce: Fundraising is certainly a major challenge! Our team partners have been very generous with their IR&D efforts and that has been sufficient to date. I'm also excited about to say that we've recently joined with a new partner and you can expect to see significant changes to our website and marketing efforts in 2010.

EVA: I'll look forward to hearing more. What have been your biggest technical challenges to date? Have you invented anything new, as a result of your research for the prize that could have a terrestrial application or market?

Michael Joyce: Our current concept is sized to launch aboard a SpaceX Falcon 1e. So, mass management is a huge challenge. Additionally, we are planning to “rove” by flying (“hopping”) our vehicle from location to location. This requires exceptional guidance, navigation & control (GN&C) systems which will have a wide range of applications. Future generations of our prototype will be able to provide valuable exploration services to governments and/or other commercial entities. With their ability to enter, and exit, lava tubes they can explore for suitable habitat sites. In permanently sheltered craters (like Cabeus) where ice and other important resources may exist, they will be able to make sorties that other types of rovers may be incapable of due to the lack of sunlight and the incredibly cold temperatures.

EVA: Mass management is always a huge challenge! Hopping is an unusual and innovative approach. It will be exciting to see it work! You've posted more details about [your design](#) for those interested in your technology.

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If you could put a call out for help Mike, what would you ask for? What do you need at this stage?

Michael Joyce: That’s a challenging question, maybe I can turn that around a bit? I’d like to ask your readers, “What can you do to help?” Let us know how you’d like to contribute and what you’d like to see us working on. If the commercial space industry fails to engage the public then all of our efforts will be short lived.

EVA: Dear Readers – If you have ideas for what you’d like to see Next Giant Leap working on; problems for them to solve through their services or products; or how you could contribute to their efforts, please comment below. Mike is there any other way you would like to be contacted by those with feedback?

Mike Joyce: Commenting below here is fine, additionally, they can email us at info@nextgiantleap.com or they can now interact on the new [Space Fellowship GLXP Team Forums](#).

EVA: As Will Pomerantz and his colleagues at the GLXP team describe it, Moon 2.0, is a new era of lunar exploration. What transformations do you see occurring as a result of your team’s actions, and as result of the prize itself? What do you expect the future will bring, for lunar exploration and development, for the world and for your team, assuming the prize is won? And if your team wins?

Michael Joyce: The GLXP will first enable many small lunar and NEO exploration missions. These will lead to ISRU missions that begin to produce valuable commodities for lunar and LEO distribution. This will pave the way for the eventual human settlement of space. There are a thousand “Giant Leaps” yet to be made and we plan to be a part of them!

EVA: Thank you Mike, and Next Giant Leap, for being the first team to reply and especially for sharing your thoughts and plans for this and the next “Giant Leaps” you will be part of on our exodus Out of the Cradle. Best wishes for your success!

For those readers who use Twitter, you may want to follow the Next Giant Leap team at [@nextgiantleap](#), (and EVA [@EVA_interviews](#) and the Google Lunar X PRIZE at [@glxp](#),) or read their updates at their [blog](#).

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Please stay tuned for more GLXP Team interviews!