

SPACE TRAVEL

EXPLORATION AND TOURISM



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Stepping-Stone To The Stars

by Lee Pullen
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Plans for human exploration of the solar system and beyond often polarize opinions among the public and scientific communities. Some believe that humanity should progress outwards one stage at a time, while others insist that greater scientific returns are to be had by launching bolder missions, with humans exploring the planets sooner rather than later.

Dr. Kai Multhaup, a physicist working at the Westfälische Wilhelms-Universität Münster in Germany, is firmly in the "one step at a time" camp, as he recently explained at Europlanet's Planetary Science Congress.

Solar system dwellers

It is a serious dilemma that faces space exploration policy makers: establish a foothold in low-Earth orbit and plan new manned missions to the moon, or concentrate on robotic exploration of planets such as Mars? Multhaup's stance is clear: "We were cave dwellers, and now office dwellers. The next step is for us to become solar system dwellers."

He believes that humans must progress into space, not only to advance science but to appeal to our natural sense of adventure and, ultimately, to ensure the survival of our species.

"Human spaceflight is not just about science," says Multhaup. "I see it as a driver for evolution. We are an exploratory species, and when we have the technology to go somewhere, we do. It's about culture and the human desire to evolve and expand, and to protect ourselves against catastrophes which can erase life on planets and end civilizations."

He believes that there is much to be learned from prolonged manned missions to the moon, and the experience is necessary before successful ventures to more distant worlds such as Mars. "The space shuttle and station are often criticised," he says.

"They have their flaws, but they are important. You can't take the shuttle to the moon or attach an engine to the International Space Station and send it to Mars, because they aren't designed to explore. They are meant to operate in low-Earth orbit, and teach us how to live and work there."

Giant leaps for mankind

To date, the majority of solar system exploration has been conducted by machines. Multhaup acknowledges their value, especially when probing worlds far too distant to send humans with our current technology.

But, "robots can only do so much," he says. "They have been a great success, but there are millions of programmers working for many hours just for them to roll half a meter and take a look at something. If you send a geologist to Mars you could do a whole lot more in a shorter period of time."

Then there is the issue of inspiring the public. Taxpayer money funds space missions, and while robotic probes raise interest, nothing captures the imagination quite like human exploration.

Previous missions to our natural satellite certainly achieved that, but Multhaup thinks we over-reached. "A lot of people were inspired by the Apollo missions to the moon, and of course it was a great thing," says Multhaup.

"But it was like taking the second step way ahead of the first." He thinks that by rushing to the moon without establishing a long-term presence in low-Earth orbit, it was inevitable that the momentum to send humans to explore space fizzled out.

A vision for the future

So what does Multhaup think would be a sensible exploration plan? He says it is important to continue a presence in Earth orbit using constructions like space stations. The next step is to establish moon bases, which will eventually become permanent human colonies. Next would be a grand mission to Mars, during which the first human steps will be taken on a planet other than our own.

After this should come intensive investigation of the asteroid belt and possibly mining operations to provide resources for bases built progressively farther out. Finally, we would move on to the icy moons of gas giants like Saturn. Ice is likely to be very useful if not essential for human existence far beyond our home planet, and moons such as Enceladus could turn out to be like oases in a desert.

Multhaup is keen to stress that this strategy would almost certainly take centuries to implement. But by taking things one step at a time in a measured approach, he thinks momentum will be built up and future progress will be steady.

Of course, Multhaup's opinion is just one among many. Some believe that the best approach to the exploration of space is to always send robots rather than humans, while others think we should look beyond low Earth orbit and lunar settlements, and instead focus all our efforts on sending humans to Mars.

Debate about the direction solar system exploration should take is often fierce, and there are countless factors to be taken into account, including the scientific value of missions and the political support for them. Discussing the issues and weighing the pros and cons of different approaches today will eventually determine our future in space.

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Lucknow, India (PTI) Jan 23, 2009

The Ram Manohar Lohia National Law University (RMLNLU) would soon start courses on air and space law, which would cater to those aspiring to become legal experts in various airlines and research organisations like Indian Space Research Organisation (ISRO).

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