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Pioneers '19 Speaker Interview: Destination Alpha Centauri!

Vienna – Pioneers '19, happening on May 9th-10th in Vienna, is set to tackle some of the biggest questions faced by humanity with the help of speakers like Peter Worden from Breakthrough Initiatives. The aims of the program, funded by billionaire Yuri Milner, include finding intelligent life and Earth's first craft to Alpha Centauri, our neighbouring star system. In this interview the former Director of NASA's Ames Research Center explains how private money is opening up new worlds, introduces his one-gram spaceship and answers questions like 'are we alone?'...

"I think we are not alone. I think we are going to find that life is everywhere. But I also think we'll find that intelligent life like ours is very rare."

"People are going to leave Earth, probably within a decade," says Peter Worden. "I'm virtually certain there will be people living on the moon, probably in the next decade. I know of a number of privately-funded efforts to do just that. I think Elon Musk's settlement on Mars will probably happen within 20 years. By the middle of this century we're probably going to find dozens of settlements off the planet."

Breakthrough Initiatives was launched by Russian investor and entrepreneur Yuri Milner and Stephen Hawking in 2015. Targets include finding signs of life beyond earth (Breakthrough Listen) and an unmanned flight to Alpha Centauri, our nearest star system. The latter is known as Breakthrough Starshot, of which Peter is Executive Director.

"We think we can do these things much more efficiently privately! The government by nature has to satisfy a lot of different groups, so most NASA science missions try to do multiple things. Typically they have six to eight science objectives and a lot of instruments, so they are a lot larger. If we only have one science objective our projects can be a lot smaller. With private money you can take a higher-risk but potentially lower-cost approach."

"Breakthrough Initiatives is just one example. Elon Musk wants to go to Mars, and Jeff Bezos is interested in large-scale industrialization. This is the new space age, powered by visionary, high-net-worth people."

The job for Worden and his colleagues now is to bring an Alpha Centauri-bound flying object to fruition. And he's already able to explain how the 'StarChip' craft might look.

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“We would build a 100GW laser. Then we would build a very small spacecraft, weighing about a gram. It would be connected to a light sail, which would basically be a very thin sheet of plastic, maybe four or five meters across. We put them deep in space and we hit them with the laser. After about 10 minutes the laser propels the StarChip to 20% the speed of light.

“The laser itself would probably be several kilometres in diameter. It would consist of maybe tens or hundreds of millions of small lasers that would gang together in flat panels. It would look a lot like a solar energy farm, over a several kilometre area. But rather than receiving light it would transmit it.”

Sound expensive? Milner’s first wad of cash for Starshot alone is \$100 million. But while such a spend might not be a justifiable idea for governments any time soon, Worden points out that it’s a good thing for humanity that the mega-rich are willing to fund this kind of exploration.

“Something like ‘Are we alone’ is a fundamental question. Not just fundamental questions of science, but philosophical questions that people have always pondered. Regardless of what the answer is, it has huge implications for the future of humanity.

“If we do find intelligent life out there, maybe we can ask them some of our big questions - how do we survive our own problems? If not, then maybe that gives us a better reason that we need to solve our problems. Either way it’s important to our future!”

About Pioneers

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