



Lockheed, Arizona State Eye New Space Science Mission Business Model

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[Irene Klotz](#)

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Taking a page from the ride-share industry, [Lockheed Martin](#) Space and Arizona State University have set up a nonprofit research collaborative to plan, build and fly condo-style space science missions beginning with a multispacecraft flyby of near-Earth asteroids and other objects.

The intent of The Milo Space Science Institute is to spearhead cutting-edge research by universities, companies and startup space agencies that may not have the money or technical expertise to conduct space missions on their own. A ballpark price for the mission, currently called NeoShare, is \$200 million, with the goal of launching in 2023, organizers said during the project's unveiling Oct. 2 at the 2018 International Astronautical Congress.

Milo Institute seeks 30-40 partners to split \$200 million mission tab

Inaugural mission to visit near-Earth objects

"We're dedicated to making deep-space missions more affordable and more accessible for anybody that wants to participate . . . from development to operations," says Elizabeth Cantwell, CEO of Arizona State University Research Enterprise.

Using the U.S. National Academies of Sciences, Engineering, and Medicine's decadal plans as blueprints, the institute will pursue missions that aim to answer fundamental science questions, with initiatives that can be accomplished relatively quickly and inexpensively. "We're looking to produce research that will be published in *Science* and *Nature*," says Arizona State planetary scientist Jim Bell, a longtime [NASA](#) Mars researcher and project leader.

The inaugural mission, for example, is designed to significantly increase the number of near-Earth objects (NEO) surveyed by robotic spacecraft. These objects, including comets and asteroids, are believed to be leftover materials from the formation of the Solar System. "There's a zoo of asteroids out there and we've just scratched the surface," says Bell. "There have been very few missions that target these bodies. We want to understand their geology, composition, chemistry, mineralogy, internal structure. . . . From a science perspective, we can learn about what went into the formation of the planets."



The Milo Institute intends to recruit 30-40 educational, research and other partners interested in building instruments, providing scientific insight and analysis, creating educational opportunities, developing workforce skills, conducting technology demonstrations or supplying other services, and then dividing up mission costs among them.

Lockheed Martin would help with mission architecture, design, instrument integration and mission assurance. “When we first floated this idea to Lockheed there was a lot of skepticism,” Bell notes. “This isn’t going to be a flagship mission with the kinds of money that they make on those big missions. But eventually they came around to realize that just like everyone else, they need to innovate. They need to keep their folks excited and they need new markets.

“If this model works we could do this multiple times,” Bell adds. “More opportunities for smaller dollars can yield similar profits for them as fewer opportunities with big money.”

The business model is similar to what Lockheed is pursuing through its subsidiary GEOShare, which designs custom satellites for multiple owners who want to operate in the same orbital location. GEOShare, run by entrepreneur Lon Levin, is a partner in The Milo Institute as well.

“We’re taking our engineering talent and team that has been working on missions for [NASA](#) for many years,” says Lockheed Martin Vice President Lisa Callahan, “and trying to put together missions that can do exquisite science, but now in a collaborative environment where many can join and pull resources together to do great science in an affordable fashion.”

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