

OpticalX Wins NSF SBIR Contract to Develop Computational Telescopes to Track Small Space Debris in the Low-Earth-Orbit

TRACY, CA, UNITED STATES, July 1, 2024 /EINPresswire.com/ -- OpticalX, LLC announces that the National Science Foundation (NSF) has selected it for an SBIR Phase I contract focused on computational optics to detect and track small [space debris](#) that poses serious collisional hazards to operational spacecraft in the Low-Earth-Orbit (LEO) and to the inhabitants of the International Space Station. On July 1, 2024, OpticalX will start its journey to create an innovative and low-cost solution to track millions of cm size heretofore-undetectable particles providing data that can be used for protection for space assets.

Quote From Company

Computational imaging is critical for wide-area surveillance of cm and small size space debris not visible to radars," said Hasan Bahcivan, Ph.D., Chief Scientist at OpticalX, and principal investigator of the project. "The proliferation of small space debris poses a challenge that is not addressable with radars or larger aperture telescopes. The difficulty lies in the inherent low signal-to-noise ratio and in not knowing where to point. We need a system that can stare at many moving objects with no knowledge of their positions or velocities. We are confident that the ultimate solution is computational. The findings of this research project will help us understand how to allocate AI-driven powerful computational resources for effective imaging systems for space surveillance." If successful, the proposed technology transforms arrays of inexpensive small, wide field-of-view cameras into powerful computational telescopes with sensitivities enough to potentially detect objects smaller than 1 cm.



An illustration of space debris hazard to operational spacecraft

The views expressed are those of the author and do not necessarily reflect the official policy or position of the NSF, or the U.S. government.

About OpticalX

Founded in 2022, OpticalX is a small team of engineers and consultants with backgrounds in remote sensing and accelerated computing. Our mission is to develop effective and sustainable optical and radar computational solutions for diverse fields, including space situational awareness, space debris monitoring, air traffic surveillance, and particle physics.

About the NSF's Small Business Programs

America's Seed Fund powered by NSF awards \$200 million annually to startups and small businesses, transforming scientific discovery into products and services with commercial and societal impact. Startups working across almost all areas of science and technology can receive up to \$2 million to support research and development (R&D), helping de-risk technology for commercial success. America's Seed Fund is congressionally mandated through the Small Business Innovation Research (SBIR) program. The NSF is an independent federal agency with a budget of about \$9 billion that supports fundamental research and education across all fields of science and engineering. For more information, visit seedfund.nsf.gov.

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