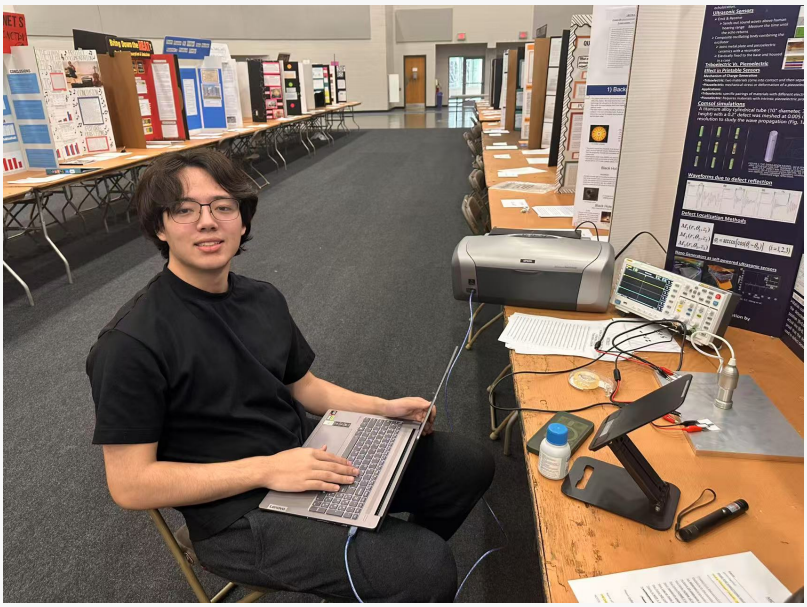
Max Kopp Tackles Space Safety with AI & Nanotech After Astronauts' Close Call

Inspired by two stranded astronauts, 17-year-old Max Kopp is building AI-powered sensors to prevent future spaceflight emergencies.



17-year-old scientist and entrepreneur Max Kopp presenting his research on AI-driven nanomaterial sensors for spacecraft safety at a science fair. His work explores real-time structural health monitoring using advanced AI and nanotechnology

BLUE BELL, PA, UNITED STATES, March 21, 2025 /EINPresswire.com/ -- When Max Kopp, a 17-year-old scientist and entrepreneur, read the news in early 2023 that Russian cosmonauts Sergey Prokopyev and Dmitry Petelin were stranded aboard the International Space Station due to a coolant leak, the story hit him harder than most. The two astronauts had to remain in orbit nearly a full year, relying on a backup rescue mission to bring them home safely.

For Kopp, the situation was more than a technical failure — it was a human crisis."I couldn't stop thinking about them," Kopp says. "They were out there for months, waiting. I felt this deep pain knowing that they were vulnerable. And I thought — what if they never made it back?"

> I may not be Elon Musk and can't bring astronauts home—but maybe I can help prevent the next crisis."
>
> *Max Kopp, 17-year-old CEO and Founder of Vitasense*

This week, the two astronauts finally returned safely to Earth. And while the world breathed a sigh of relief, Max felt something else: a renewed sense of purpose. "I may not be Elon Musk. I can't launch rockets or bring people home from space," he reflects. "But I kept asking myself: what if I could prevent something like this from happening again?"

That question sparked the beginning of his next innovation — a nanotechnology-based, AI-

driven structural monitoring system that can detect spacecraft damage in real time. Already known for founding Vitasense, a medical tech startup developing wearable noninvasive glucose monitors, Max took his deep expertise in nanomaterials and AI and applied it to a very different but equally urgent problem: how to keep astronauts safe.

A simulated visualization of an astronaut installing AI-powered nanomaterial sensors to monitor spacecraft structural integrity in real time. These sensors, inspired by Max Kopp's research, aim to prevent critical failures by detecting micro-damage before

Spacecraft are vulnerable to undetected micro-damage, stress fractures, and seal leaks — all of which can have catastrophic consequences. Current spacecraft monitoring systems still rely heavily on manual inspection and ground-based diagnostics. Max's system uses inkjet-printed nanomaterial sensors, embedded directly into spacecraft structures, to constantly track physical integrity and detect anomalies long before they become dangerous.

These thin, lightweight sensors can send live alerts via AI-powered analytics, giving astronauts and mission control early warnings if something is going wrong — from hull stress to potential leaks.

"This is like a nervous system for spacecraft," Kopp explains. "It's designed to feel things before they break."His approach unifies the same core technologies he's applied to his med-tech research: nanomaterials for sensing, and AI for interpretation. In Vitasense, they're used to help diabetics monitor glucose painlessly and affordably. In space, they might protect a small crew on a long mission from an invisible threat.

"What connects both of these projects is the reason I started them," he says. "Whether it's millions of people managing diabetes every day, or two astronauts stuck in orbit — I just want to help people live safer, better lives."

Kopp's aerospace project is currently in development and gaining attention from institutional mentors and scientific competitions. He is preparing to pursue mentorship and collaboration with NASA and other aerospace research labs. In the meantime, he continues to be recognized across elite global competitions — including the National Junior Science & Humanities Symposium, S.-T. Yau High School Science Award, Conrad Challenge, and Global Youth Entrepreneurship Challenge, where he was named Most Innovative Winner.

Kopp also leads The Kopp Foundation, his nonprofit dedicated to supporting accessible medical

technology and public awareness in biosensor research. It’s another example of his interdisciplinary approach to scientific innovation — and his heart-led philosophy.“When they made it back yesterday, I was so relieved,” Kopp says of the astronauts’ return. “But I also thought — what if next time, someone doesn’t make it? What if the difference is just a better sensor, a faster alert, a few more seconds of warning?”

Whether developing wearable tech to transform healthcare or building silent safety systems for deep space, Max Kopp is driven by the same question — what if I can help? Even in a small way.

About Max Kopp
Max Kopp is a 17-year-old scientist, entrepreneur, and Founder and CEO of Vitasense, a medical technology startup focused on noninvasive biosensor solutions. He is also the creator of an AI-driven nanomaterial sensor platform for real-time structural monitoring of spacecraft. His research unites nanotechnology, AI, and mission-driven purpose to address some of the most pressing human challenges — on Earth and beyond.

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