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Guilford co.’s health tech bound for space station



SpaceX rocket launched Thursday with a Guilford company's health technology onboard. PHOTO COURTESY JONATHAN ROTHBERG VIA TWITTER

BY NATALIE MISSAKIAN
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When a SpaceX rocket blasted off from Cape Canaveral, Florida Thursday afternoon, headed for the International Space Station, a medical imaging device made by a Guilford company was on board.

A research team is studying whether the company’s pocket-sized ultrasound device, Butterfly iQ, can be used to help astronauts monitor their health in space.

The device is the brainchild of legendary Connecticut scientist and serial entrepreneur Jonathan Rothberg. His Guilford-based company Butterfly Network Inc. launched the portable imaging wand commercially in 2018 and went public earlier this year.

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"It was inspirational," Rothberg said of the launch. "And it was full circle. Semiconductor chips enabled the space program. And the space program drove the development of semiconductors. Now we have the first ultrasound on a chip going into space!"

The Butterfly iQ uses smaller and less expensive computer chips to generate images, replacing the relatively large, fragile and expensive crystals of conventional ultrasound.

The hand-held wand is about the size of an electric hair-trimmer and hooks into an iPhone for instant imaging.



Butterfly iQ

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One of Rothberg's reasons for starting the company was to bring inexpensive imaging technology to remote parts of the world.

Dr. John Martin, chief medical officer for Butterfly Network, said in a phone interview Friday morning that the company has been talking with NASA and the Translational Research Institute for Space Health (TRISH) about the device since July 2018.

TRISH, led by the Baylor College of Medicine's Center for Space Medicine, works with NASA to identify cutting-edge technologies to mitigate health risks of space exploration.

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"We basically spent three years getting ready for this moment yesterday," Martin said. "It's been a long journey to get there but we're really excited about it."

Martin said NASA is already using the device to scan astronauts on the ground, but researchers now want to see how it performs in the microgravity environment of space.

Astronauts will use it to monitor themselves for health problems that can commonly occur in space — such as kidney stones, fluid in the lungs, blood clots and eye problems.

Once the astronauts arrive at the space station, they'll provide feedback on how easy the device is to use, as well as on the quality of the images, Martin said.

Dr. Emmanuel Urquieta Ordonez, chief medical officer for TRISH, said Butterfly iQ's compact size, light weight and low power requirements make it ideal for longer space missions, such as NASA's planned return to the Moon.

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It also requires separate probes to scan different parts of the body, he said, while Butterfly iQ lets astronauts conduct a whole-body scan with one device.

Additionally, astronauts performing ultrasounds at the ISS currently must be guided by a radiologist, who communicates with them from Earth in real time, he said.

"As we go farther from the Earth to the Moon or Mars, we're not going to have that capability," Urquieta Ordonez said.

Since artificial intelligence is built into Butterfly iQ, he said the hope is astronauts will be able to conduct and interpret the scans themselves without specialized training.

"This really paves the way for the technology we'll need for [future missions to] the Moon and Mars," he said.

The SpaceX-22 Cargo Resupply Vehicle carrying the device is expected to dock with the International Space Station tomorrow (June 5) at 5 a.m. ET.

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