

# Tamed Dragon supply ship arrives at space station (Update)

March 3 2013, by Marcia Dunn

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This frame grab made available by NASA TV shows a view of the SpaceX Dragon capsule on the end of the International Space Station's robotic arm, Sunday, March 3, 2013. SpaceX, the California-based company founded by billionaire Elon Musk, had to struggle with the Dragon following its launch Friday from Cape Canaveral. The spacecraft is delivering more than 1 ton of supplies to the the International Space Station. (AP Photo/NASA TV)

A private Earth-to-orbit delivery service made good on its latest

shipment to the International Space Station on Sunday, overcoming mechanical problems and delivering a ton of supplies with high-flying finesse.

To NASA's relief, the SpaceX company's Dragon capsule pulled up to the orbiting lab with all of its systems in perfect order. Station astronauts used a hefty robot arm to snare the unmanned Dragon, and three hours later, it was bolted into place.

The Dragon's arrival couldn't have been sweeter—and not because of the fresh fruit on board for the six-man station crew. Coming a full day late, the 250-mile (400-kilometer)-high linkup above Ukraine culminated a two-day chase that got off to a shaky, almost dead-ending start.

Moments after the Dragon reached orbit Friday, a clogged pressure line or stuck valve prevented the timely release of the solar panels and the crucial firing of small maneuvering rockets. SpaceX flight controllers struggled for several hours before gaining control of the capsule and salvaging the mission.

"As they say, it's not where you start, but where you finish that counts," space station commander Kevin Ford said after capturing the Dragon capsule, "and you guys really finished this one on the mark."

He added: "We've got lots of science on there to bring aboard and get done. So congratulations to all of you."

Among the items on board: 640 seeds of a flowering weed used for research, mouse stem cells, food and clothes for the six men on board the space station, trash bags, computer equipment, air purifiers, spacewalking tools and batteries. The company also tucked away apples and other fresh treats from an employee's family orchard.

The Dragon will remain at the space station for most of March before returning to Earth with science samples, empty food containers and old equipment.



This frame grab made available by NASA TV shows a view of the SpaceX Dragon anchoring to the International Space Station Sunday, March 3, 2013. SpaceX, the California-based company founded by billionaire Elon Musk, had to struggle with the Dragon following its launch Friday from Cape Canaveral. The spacecraft is delivering more than 1 ton of supplies to the the International Space Station. (AP Photo/NASA TV)

California-based SpaceX run by billionaire Elon Musk has a \$1.6 billion contract with NASA to keep the station well stocked. The contract calls for 12 supply runs; this was the second in that series.

This is the third time, however, that a Dragon has visited the space station. The previous capsules had no trouble reaching their destination. Company officials promise a thorough investigation into what went wrong this time; if the maneuvering thrusters had not been activated, the capsule would have been lost.

Ford said everything about Sunday's rendezvous ended up being "fantastic."

"There sure were some big smiles all around here," NASA's Mission Control replied from Houston.

Proclaimed SpaceX on its web site: "Happy Berth Day."

In a tweet following Friday's nerve-racking drama, Musk said, "Just want to say thanks to (at)NASA for being the world's coolest customer. Looking forward to delivering the goods!"

Musk, who helped create the online payment processor PayPal, acknowledged Friday that the problem—the first ever for an orbiting Dragon—was "frightening." But he believed it was a one-time glitch and nothing so serious as to imperil future missions. The 41-year-old entrepreneur, who also runs the electric car maker Tesla, oversaw the entire operation from Hawthorne, California, home to SpaceX and the company's Mission Control.

The Dragon's splashdown in the Pacific, off the Southern California coast, remains on schedule for March 25.

The National Aeronautics and Space Administration is counting on the commercial sector to supply the space station for the rest of this decade; it's supposed to keep running until at least 2020. Russia, Europe and Japan are doing their part, periodically launching their own cargo ships.

But none of those craft can return items like the Dragon can; they burn up on re-entry.

Russia also is providing rides for astronauts—the only game in town since the retirement of NASA's space shuttles in 2011.

SpaceX, or more formally Space Exploration Technologies Corp., leads the commercial pack that is working toward launching astronauts in another few years. Musk said he can have people flying on a modified Dragon by 2015.

NASA's shuttles used to be the main haulers for the space station. At the White House's direction, the space agency opted out of the Earth-to-orbit transportation business in order to focus on deep space exploration. Mars is the ultimate destination.

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