

Commercial rocket will fly to the space station

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In this June 4, 2010 file photo, a halo forms around the top of the SpaceX Falcon 9 test rocket as launches from complex 40 at the Cape Canaveral Air Force Station in Cape Canaveral, Fla.

CAPE CANAVERAL, Fla. (AP) -- For the first time, a private company will launch a rocket to the International Space Station, sending it on a grocery run this weekend that could be the shape of things to come for America's space program.

If this unmanned flight and others like it succeed, commercial spacecraft could be ferrying astronauts to the orbiting outpost within five years.

It's a transition that has been in the works since the middle of the last decade, when

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President George W. Bush decided to retire the space shuttle and devote more of NASA's energies to venturing deeper into space.

Saturday's flight by Space Exploration Technologies Corp. is "a thoroughly exciting moment in the history of spaceflight, but is just the beginning of a new way of doing business for NASA," said President Barack Obama's chief science adviser, John Holdren.

By handing off space station launches to private business, "NASA is freeing itself up to focus on exploring beyond low Earth orbit for the first time in 40 years."

California-based Space Exploration, or SpaceX, is the first of several companies hoping to take over the space station delivery business for the U.S. The company's billionaire mastermind, Elon Musk, puts the odds of success in his favor while acknowledging the chance for mishaps.

NASA likewise cautions: This is only a test.

"We need to be careful not to assume that the success or failure of commercial spaceflight is going to hang in the balance of this single flight," said Mike Suffredini, NASA's space station program manager. "Demo flights don't always go as planned."

Once it nears the space station after a two-day flight, the SpaceX capsule, called Dragon, will spend a day of practice maneuvers before NASA signals it to move in for a linkup. Then its cargo - a half-ton of food and other pantry items, all nonessential, in case the flight goes awry - will be unloaded.

Up to now, flights to the space station have always been a government-only affair.

Until their retirement last summer, shuttles carried most of the gear and many of the astronauts to the orbiting outpost. Since then, American astronauts have had to rely on Russian capsules for rides. European, Japanese and Russian supply ships have been delivering cargo.

It will be at least four to five years before SpaceX or any other private operator is capable of flying astronauts. That gap infuriates many. Some members of Congress want to cut government funding to the private space venture and reduce the number of rival companies to save money and speed things up.

The shift to private enterprise, while revolutionary in space, has a long history in the U.S. The Internet, for example, evolved from government work. Space station astronaut Donald Pettit points to the settling of the American West: The government ran the forts, and private enterprise built the railroads.

In this instance, NASA employees are still working closely with the commercial contenders, giving advice and attending company meetings.

"I see this whole story repeating itself again and again as we move from low-Earth orbit," Pettit said. "And it will probably repeat itself when we go to the moon and

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elsewhere."

No one is rooting more for SpaceX than NASA. The space agency has poured \$381 million into the SpaceX effort, while the company has spent \$1 billion over its 10-year lifetime, said Musk, the high-tech pioneer who co-founded PayPal and Tesla Motors, the electric car company.

NASA also gave \$266 million to a second company it hired to make supply runs. Virginia-based Orbital Sciences Corp. hopes to launch its Antares rocket and Cygnus capsule from Wallops Island, Va., by year's end.

"This is the start of a real new era," said Dutch spaceman Andre Kuipers, who will help Pettit snare the Dragon and pull it to the space station with a robotic arm.

Pettit agreed the upcoming Dragon flight is a "big deal," but added: "I hope this becomes so routine that people won't even pay attention to it anymore."

SpaceX will have only a split second, at 4:55 a.m. Saturday, to shoot its Falcon rocket and Dragon capsule skyward. (All spacecraft bound for the space station these days have instantaneous launch windows in order to sync up efficiently with the orbiting outpost.)

SpaceX already has achieved what no other commercial entity has done: It launched a spacecraft into orbit and brought it back intact in a 2010 test flight that ended with the capsule splashing down in the Pacific.

But getting to the space station is twice as hard, said Musk, who is not only CEO but chief designer. A Dragon capsule has never before attempted a rendezvous and docking in orbit - an exquisitely delicate operation, with the risk of a collision that could prove ruinous for the space station, which has six men on board.

If something goes wrong, "we'll fix the problem and be back at it," Musk said. Two more SpaceX delivery trips are planned for this year.

The bell-shaped Dragon capsule is 19 feet tall and 12 feet across. What sets it apart from other capsules is that it can bring back space station experiments and old equipment, as the shuttles did. None of the Russian, European and Japanese supply ships do that - they burn up when they return to Earth. The Russian Soyuz vehicles that ferry astronauts have little room to spare.

The Dragon will be cut loose from the space station about two weeks after arriving and aim for a Pacific splashdown off the California coast.

Other U.S. companies vying for a shot at launching space station astronauts - like Sierra Nevada Corp., which is designing the mini-shuttle Dream Chaser - are cheering on SpaceX since it is the first one out of NASA's post-shuttle, commercial gate.

Former space shuttle commander Steven Lindsey, director of flight operations for

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Sierra Nevada in Colorado, said: "It's a new way of doing business, and there's a lot of debate back and forth on whether it's going to be successful - or whether it can be successful."

Online:

SpaceX: <http://www.spacex.com> [1]

NASA: <http://www.nasa.gov/offices/c3po/home/> [2]

Sierra Nevada Corp.: <http://sncspace.com/space-exploration.php> [3]

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