Private space race heats up as shuttle retires

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The space shuttle Atlantis and the International Space Station (ISS). With Atlantis wrapping up its final mission and the end of the 30-year US program just days away, NASA is pinning its hopes on commercial industry to build the next low-cost vehicle to take astronauts to low Earth orbit.

Private companies, aided by NASA's cash and expertise in human space flight, are rushing to be the first to build a space capsule to replace the

retiring US shuttle in the next few years.

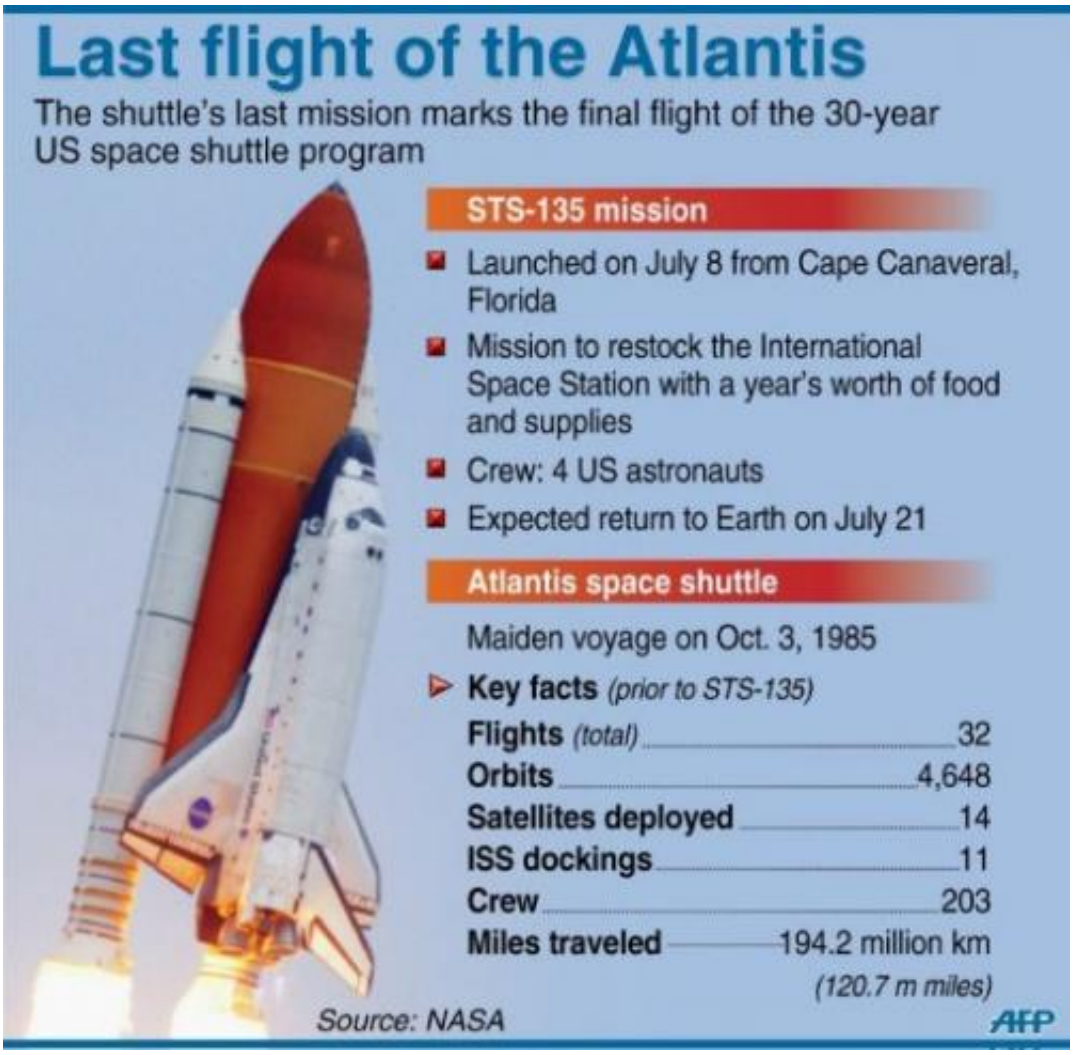
With Atlantis wrapping up its final mission and the end of the 30-year US program just days away, NASA is pinning its hopes on commercial industry to build the next low-cost vehicle to take astronauts to low Earth orbit.

"We are transferring 50 years of human space flight experience from NASA to the private sector," said Phil McAlister, acting director of commercial spaceflight development at NASA.

Faced with mounting criticism over its lack of a replacement for the shuttle, the US space agency insists it is focused on building a deep space vehicle while it "partners" with the private sector on a spacecraft to tote astronauts to familiar destinations like the International Space Station (ISS).

"We are bringing financial resources so we are going to invest in these systems, and we are also helping them technically," McAlister said.

Earlier this year, the US space agency distributed nearly $270 million in seed money to four companies -- Boeing, SpaceX, Sierra Nevada and Blue Origin -- to boost their bids to be first in the new space era.



Fact file on the Atlantis space shuttle's final mission to the International Space Station.

President Barack Obama's budget request for fiscal year 2012 includes $850 million for such efforts and would mark the third round of funding so far.

A host of former NASA astronauts have already joined the private sector as highly paid consultants to companies in the space race.

By the middle of the decade, NASA hopes that more than one option will be available to carry US astronauts to orbit.

"Competition is a key aspect of our strategy," said McAlister. "We want very much to have competition, with multiple providers."

NASA has sent astronauts to low Earth orbit at least 150 times over the past four decades, McAlister said.

Now, it is aiming for a space plan that would transport a total of eight astronauts, four at a time, aboard two flights per year to the ISS.

Boeing, which is working on the CTS-100 spacecraft, and SpaceX with its Dragon capsule, say they are ready for the challenge.

"We have laid out a viable program that does test flights in 2014 and will be ready to carry crew in 2015," said John Elbon, vice president and program manager of commercial crew at Boeing.

"Of course it will be depending on the funding we will receive (from NASA) going forward between now and 2015," he said, touting Boeing's long history building spacecraft, including the first manned space capsules Mercury and Gemini, as well as Apollo, which took men to the moon.

Space tourism could also prove a lucrative side business, he said, with a company called Bigelow aerospace working on a space habitat module that could be leased to countries without a spaceflight program for short-term research.

SpaceX's Falcon 9 rocket lifts off on December 8, 2010 from launch pad 40 at Cape Canaveral, Florida. Earlier this year, the US space agency distributed nearly $270 million in seed money to four companies -- Boeing, SpaceX, Sierra Nevada and Blue Origin -- to boost their bids to be first in the new space era.

Elbon declined to project a cost per seat, but said it would likely be competitive with what it currently costs to send an astronaut to the ISS on a Russian Soyuz capsule, or about $51 million per ticket.

When it comes to SpaceX, founded in 2002 by multimillionaire Internet entrepreneur Elon Musk, the cost per seat could be as low as $20 million on its four-seat Dragon spacecraft.

"With NASA's support, SpaceX will be ready to fly its first manned mission in 2014," Musk said on SpaceX's website.

SpaceX communications director Kirstin Grantham told AFP that it has "a tremendous advantage over other companies looking to carry astronauts, because our vehicles were designed from the start to carry astronauts and, unlike other companies, our vehicles have already flown."

In December 2010, SpaceX became the first company to successfully send its own space capsule, the Dragon, into orbit and back.

The next step is for a fly-by of the ISS as part of a mission in which the Dragon will approach the orbiting station within six miles.

NASA may allow the company to also berth with the outpost as part of that same mission, scheduled to take place in 2011.