

# With each rocket launch, 'I have three heart attacks'

November 19 2018, by Ivan Couronne

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The 138-foot tall (42-meter) Antares rocket rises into the dark sky after blasting off from Wallops Island in Virginia

Kurt Eberly has hardly any hair and keeps losing more. His job is to launch, two times per year, a metallic cylinder packed with several tons of supplies, at high speeds toward the International Space Station, 250 miles (400 kilometers) above the Earth.

Eberly heads the Antares rocket program at Northrop Grumman, the US aerospace company that shares with SpaceX a high-value client: NASA.

Saturday at four in the morning on Wallops Island in Virginia, Eberly was in this NASA control room, dedicated to rocket launches that are smaller than those taking off from Cape Canaveral, Florida.

Countdown, three, two, one. Then at the precise moment, the 138-foot tall (42-meter) Antares rocket rose into the dark sky, blasting off in an infernal roar.

At the top of the rocket was a capsule called the Cygnus, made in Italy and loaded with 7,400 pounds (3,350 kilograms) of gear, including meals, clothes for the next crew of astronauts, technical equipment and around two dozen scientific experiments.

After three and a half minutes of flight, the first stage—having burned through all its fuel—detached and fell into the Atlantic Ocean.

The engine of the second stage took over. At T+9 minutes, the rocket was 212 kilometers high, somewhere over the northeast of Puerto Rico, when the launch conductor announced, in a bland monotone: "And we've got Cygnus payload separation."



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The spacecraft separated at a speed of 4.7 miles (7.5 kilometers) per second.

On Monday, the spacecraft arrived at the International Space Station, latching on at 7:31 am (1231 GMT) and marking the 10th Cygnus mission so far.

## **Explosion in 2014**

"Every one of these launches, you know, it really gets your heart pumping and I have about three heart attacks each launch countdown," Eberly told AFP a few weeks earlier in the clean room where the Cygnus is prepared for flight, not far from the launch pad.

"It's still very stressful just knowing that how much energy is packed into this rocket and it's all got to be released in the right way."

On Saturday, after the successful launch, he upped his estimate of cardiac distress.



It takes six months and 40 people to assemble an Antares rocket

"I think it's five, five heart attacks. I lost even more hair. But now it's an incredible feeling of relief and happiness."

These unmanned cargo launches have become so commonplace they are almost banal. This year, the ISS will be resupplied by Russian spacecraft three times, Japanese vessels once and US cargo ships five times, between SpaceX and Northrop Grumman.

But space remains a dangerous business.

The latest reminder was the October 11 failure of a Soyuz rocket on its way to the orbiting outpost, forcing the two men on board to eject shortly after launch. No one was hurt.

In 2014, the unmanned rocket carrying the third Cygnus mission exploded seconds after takeoff, and the cloud of smoke it created was visible for miles.

It was "like a punch to the gut," Eberly said.



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It took two more years for another Antares to launch.

Whether carrying people or freight, rockets travel at extreme speeds, said Rick Mastracchio, former NASA astronaut and senior director of operations at Northrop Grumman's commercial resupply services program.

"You're moving faster than a bullet in fact, you're probably traveling 10 times faster than a speeding bullet, five miles a second once you reach orbit," he said.

"There's temperature extremes from cryogenic all the way up to thousands of degrees Fahrenheit that the materials and the machinery needs to operate under," he added.

"So it may look routine but it's not a very simple thing to do. Spaceflight is hard."

It takes six months and 40 people to assemble an Antares rocket. Each Cygnus mission costs NASA about \$263 million on average.



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## **Trash removal**

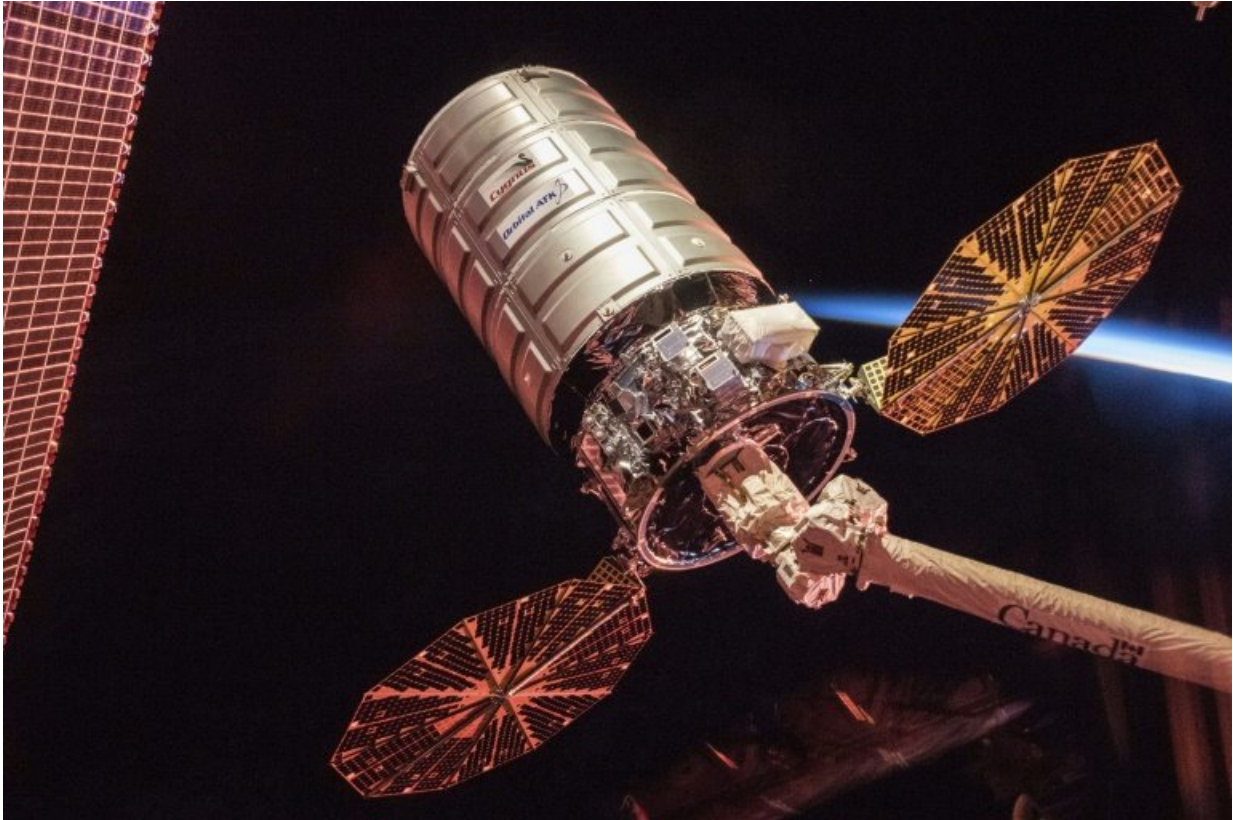
Cargo vessels remain at the space station between one and six months. Emptying them and refilling them is up to the crew of astronauts and cosmonauts, who are tasked with everything from conducting science experiments to basic cleaning and maintenance on board the orbiting outpost.

"The best day on orbit is when the Cygnus arrives. But it's also a great day when the Cygnus leaves, why? Because it takes away the trash," Mastracchio said.

"As a crew member, you're living with this trash for months and months when the Cygnus takes away the trash, the space station is a better place."

Few people on Earth likely think of such details when pondering a rocket launch.

Among the spectators at the launch Saturday was a family of Bolivian immigrants. They drove hours from North Carolina to witness the launch.



A Cygnus cargo vessel latched on to the International Space Station before its detachment

"We come from a very poor country. We can never see this kind of events. I'm so happy to be here," said the mother, Marlene Ancalli.

"This is my dream," she said, as the [rocket](#) disappeared in the sky.

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