Remembering ATVs, Europe's cargo ferries in space

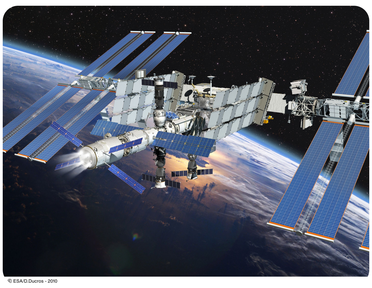


This is the ATV Edoardo Amaldi, photographed in space

Access the image

09 March 2018

Have you ever wondered how astronauts onboard the International Space Station get the supplies that they need? Orbiting 400km above Earth, they cannot just go to the shops to buy food! How about new equipment, experiments, water to drink and even air to breathe? Everything needs to be delivered from Earth, and for a long time ESA's Automated Transfer Vehicles – or ATVs for short – were the answer!



© ESA/D.Ducros - 2010

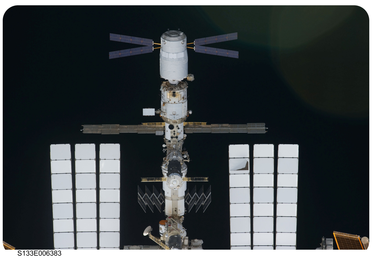
Look carefully at this drawing and you may spot an ATV firing its thrusters to keep the ISS in orbit

Access the image

The very first ATV was launched ten years ago today. It blasted from the surface of Earth on a rocket, and then docked with the International Space Station (ISS) to deliver its cargo. The mission was a great success, so ESA made even more ATVs. In total, five ATVs were launched from 2008 to 2014, each one named after a European scientist:

- Jules Verne, a French writer well known for his science-fiction stories.
- Johannes Kepler, a German mathematician who did important work calculating the orbits of planets.
- Edoardo Amaldi, an Italian physicist who wanted Europeans to explore space peacefully.
- Albert Einstein, a German theoretical physicist famous for his equation $E = mc^2$.
- Georges Lemaître, a Belgian astronomer who thought of the Big Bang theory.

After docking, an ATV would stay part of the ISS for around six months. It would gradually be emptied of everything useful, and then would be filled up with things that the astronauts did not need any more – a bit like a rubbish bin!



S133E006383

This photo shows an ATV at the top, docked with the ISS

Access the image

ATVs did more than just deliver supplies, as they also helped to keep the ISS in orbit. Although the ISS is far above Earth, it still travels through a little bit of Earth's atmosphere. This causes friction and gradually slows the Station down, allowing gravity to pull it closer to Earth. Eventually this would destroy the ISS, so while docked ATVs would fire their thrusters to speed the Station up, pushing it into a higher orbit and keeping it safe!

Once the ATV had completed its mission, it would detach and burn up in Earth's atmosphere. This would destroy the ATV, along with all the rubbish that had been collected inside it, before it could hit the ground.

Nowadays other craft deliver supplies to the ISS, but we should remember the ATVs and their great success.

Imagine you are an astronaut onboard the ISS, and a cargo ferry is coming to deliver you supplies. What would you want it to bring?

Cool fact: Each ATV carried 6.6 tonnes of cargo!