

European space freighter poised for suicide plunge

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This NASA image released on June 7 of the International Space Station and the docked space shuttle Endeavour, flying at an altitude of approximately 220 miles, is the first-ever image of a space shuttle docked to the International Space Station. A European freighter will be destroyed by atmospheric burn-up next week after completing its supply mission to mankind's orbital outpost.

A European freighter will be destroyed by atmospheric burn-up next week after completing its supply mission to mankind's orbital outpost, the European Space Agency (ESA) said on Friday.

The Automated Transfer Vehicle (ATV) will gently separate from the [International Space Station](#) (ISS) at 1451 GMT on Monday and on Tuesday fire its engines to descend from orbit over the Pacific.

"Hitting the [upper atmosphere](#), (the) ATV will tumble, disintegrate and burn, and any remains will strike the ocean at around 2050 GMT," ESA said in a press release.

The [unmanned craft](#), the Johannes Kepler, is the second in five innovative vehicles that are ESA's scheduled contribution to the US-led ISS.

The supply ships, launched by [Ariane 5 rocket](#) from Kourou, French Guiana, are designed to find their own way to the ISS and dock with it automatically, providing up to 6.6 tonnes of food, water, oxygen, experiments and other essentials.

After being emptied of their cargo, the ATVs use their onboard thrusters to boost the ISS, which are dragged by atmospheric molecules in low orbit.

This operation had to be carried out several times during the Johannes Kepler's mission, which coincided with the visit of two US shuttles, Japan's HTV cargo carrier and two [Russian spacecraft](#).

Cargo delivery to space

A spacecraft carrying a 20-tonne payload is set for launch on Tuesday, the biggest ever hoisted aloft by the European Space Agency

Mission

- ▶ To bring food and supplies for the crew of International Space Station
 - ▶ To dock with ISS for 3.5 months
- One of three unmanned spaceships planned by EAS

Launcher:
Ariane 5

Height: 53 m
Diameter: 5.4 m

Johannes Kepler unmanned space vehicle

- Russian-made docking and refueling system
- Cargo section
- Folded solar array panels
- Altitude control and braking thrusters
- Main engine

Equipped with own propulsion, communications, navigation system, GPS

Height	10.7 m
Diameter:	4.5 m
Volume:	48.3 cubic m
Solar array span:	22.3 m
Launch mass:	20,750 kg

Launch site:
Kourou, French Guiana

Named after
Johannes Kepler
(1571-1630)

- German astronomer and mathematician
- Discovered the laws of planetary motion, including elliptical orbits



Source: European Space Agency

AFP

Graphic on the European Space Agency's mission to deliver an unmanned cargo ship, the Johannes Kepler, to the International Space Station.

The ATVs are then used as a spare room and storage before being laden with rubbish, human waste and unwanted hardware for their final flight.

The fiery end of the Johannes Kepler will include a "last phone call home," ESA said.

The agency wants to finetune its knowledge about how the 10-tonne cylindrical craft behaves in a controlled destruction.

A prototype "black box" called the re-entry break-up recorder will gather data on the ferry's location, temperature, pressure and attitude as it disintegrates.

The gadget will then eject from the dying spacecraft, and once it reaches an altitude of about 18 kilometres (11 miles) will transmit the information via the Iridium satphone system.

The [Johannes Kepler](#), launched on February 16, is named after the German mathematician of the Age of Enlightenment.

The first ATV, named after the 19th-century French trailblazer of science fiction Jules Verne, flew in 2008.

The third ship, due to be launched in February 2012, has been named after 20th-century Italian physicist Edoardo Amaldi, and the fourth honours Albert Einstein. The fifth ATV has yet to be named.

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