

# ATV Automated Transfer Vehicle

The exhibit documents the missions of ATV (Automated Transfer Vehicle) the European uncrewed non-reusable pressurized cargo spacecraft developed by the European Space Agency (ESA) which was used five times between 2008 and 2015 to perform resupply missions to the International Space Station. They delivered tons of supplies, equipment and spare parts as well as food, air and water for the crew, and also carried to the ISS little known philatelic items.

ATV was designed and produced by Thales Alenia Space (Turin, Italy). integrated by EADS Astrium (Bremen, Germany), and finally tested by ESA Estec (Noordwijk, The Netherlands).

The platforms operated with a high level of automation, such as its high-precision navigation systems, docking sequence, ISS attitude control, and ISS debris avoidance manoeuvres.

The five ATVs were named after important European personalities in science and engineering: Jules Verne, Johannes Kepler, Edoardo Amaldi, Albert Einstein, and Georges Lemaître.

At the time ATV was the largest spacecraft ever built in Europe.

Based on the experience gained from the ATV programme, European industry (Thales IT and Airbus DE) has developed for NASA the European Service Module (ESM) for the new US Orion/Artemis spacecraft.

The exhibit shows many (sometimes unique) flown items. ATV items signed in space are very rare, since they were normally not extracted from original kits. Flown items are highlighted by using red borders.



*Cover flown on ATV-3 Edoardo Amaldi, extracted from the "Italian Kit", and personally addressed by the Flight Engineer Anton Škaplerov, on March 28, 2012, the day of docking with the ISS. The cover, stored in a non-priority cargo bag, was returned to Earth on Oct. 28th 2012, with the Space-X Dragon CRS-1 and cancelled at its final destination in Houston.*

## References

ESA (European Space Agency), "ATV" in [www.esa.int/Science\\_Exploration/ATV.htm](http://www.esa.int/Science_Exploration/ATV.htm)

ASI (Italian Space Agency), "Atv (Automated Transfer Vehicle)" in [www.asi.it/trasporto-spaziale/atv/](http://www.asi.it/trasporto-spaziale/atv/)

Umberto Cavallaro, "ATV: a new challenging topic for astrophilately collector " in ORBIT n. 94 (June 2012) (UK)

Umberto Cavallaro, "ATV ein lebenswichtiges Lieferfahrzeug für die ISS und ein neues Thema für Bordpost-Sammler" in WELTRAUMPHILATELIE n. 248 (Autumn 2012) (DE)

## ATV-1 Jules Verne



July 17, 2007. ATV-1, after final test, leaves the ESTEC facilities (European Space Research and Technology Centre in Noordwijk, NL) to be embarked onboard the French cargo ship MN Toucan, a vessel normally used to transport Ariane rocket components to Kourou. Cover cancelled by TNT Rotterdam on the day of loading of the ATV containers



August 4, 2008. 460 tons of equipment of ATV-1, packed into 50 shipping containers, arrived at the Pariacabo harbour in Kourou. Cover cancelled with the standard Kourou manual postmark on the day of completion of the unloading from MN Toucan.

## ATV-1 [2]



March 9, 2008. Launch of Ariane V from Kourou, carrying in space ATV-1 Jules Verne that delivered to the ISS 2.2 tons of supplies, water, air, propellants and dry cargo. *Commemorative cover cancelled at Kourou on the date of launch with the special Ariane-5 hand cancel, and non-postal rubber stamp of the Galliot Tracking Station (based in Kourou) that supported the launch operation.*



April 3, 2008. Automatic docking of ATV-1 with the ISS. Because it was the first ATV to be launched, Jules Verne underwent three weeks of orbital testing before beginning its final rendezvous with the ISS. *Commemorative cover postmarked on the day of docking at Toulouse, France where is based the Mission Control Center which supported all of the ATV missions. A rubber stamp of the Toulouse MCC was added.*

## ATV-1 [3]



One of the 1200 covers **flown** to ISS in the “French Kit” serviced by the Philatelic Club La Marianne (EADS Astrium, France). The covers were returned back to Earth with mission STS 126 on November 30, 2008. Stored in a non-priority cargo bag, the CBT was removed from the Leonardo MPLM on **February 1, 2009** and the covers were franked and cancelled at their final destination, the KSC. According to the ESA rules, all the philatelic items flew as **blank covers/cards** and were completed by the owners after their recovery. Few covers were extracted from the kit and signed by cosmonauts onboard

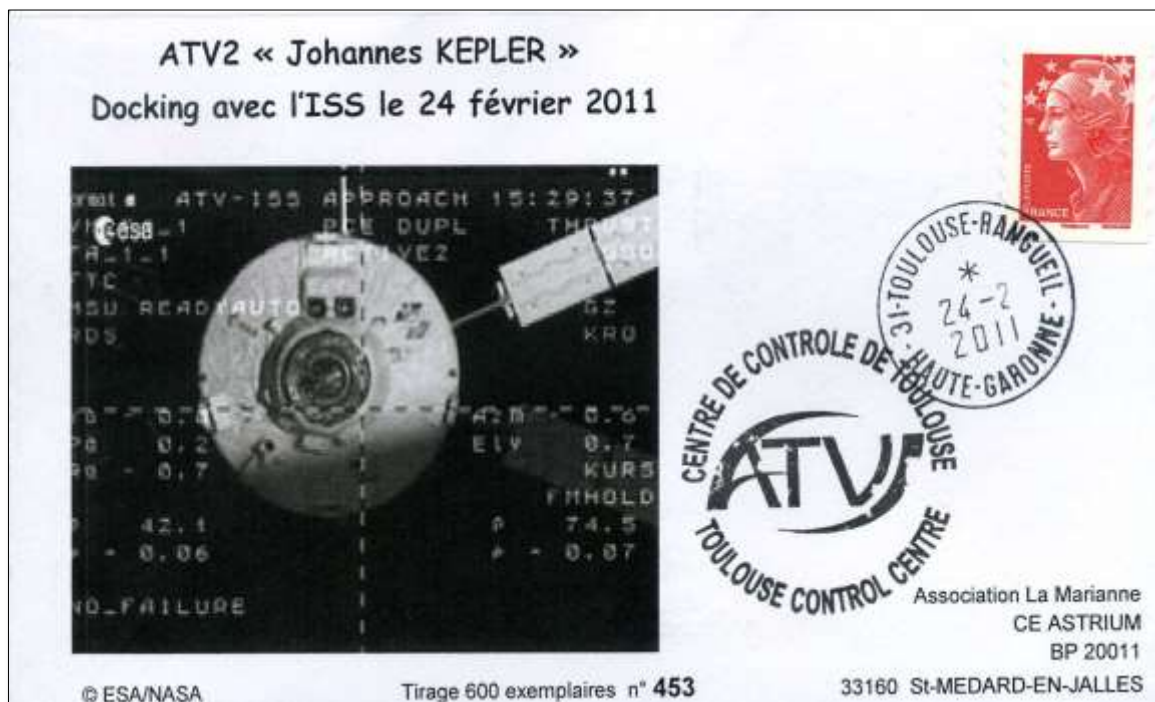


550 postcards flew aboard ATV-1 in a separate “German Kit” sent by the German Philatelic Club Erno/Philatelie (EADS Astrium, Germany). Like the covers of the “French kit” they were delivered to the ISS on April 3<sup>rd</sup>, 2008 when the ATV-1 docked to the Station. After their return to the Edwards AFB, the cards were recovered and cancelled on Feb. 1, 2009 at KSC, their final destination,

## ATV-2 Johannes Kepler



February 16, 2011. Launch of Ariane V from Kourou, carrying in space ATV-2 Johannes Kepler that delivered to the ISS 2.55 tons of supplies, oxygen gas, propellants and dry cargo (food, clothes, equipment). *Commemorative German cover cancelled on the day of launch at Kourou with the Ariane-5 manual postmark.*



February 24, 2011. Automatic docking of ATV-2 with the International Space Station. ATV-2 traveled over eight days to catch up with the ISS, and automatically docked at the aft port of the Zvezda service module. During the rendezvous operations, ATV-2 traveled a total of 2.5 million miles (over 4 M km). *Commemorative cover postmarked at Toulouse, France where is based the Mission Control Center which supported all of the docking operations. A non-postal rubber stamp of the Toulouse MCC was added.*

## ATV-2 [2]



600 covers were flown to the ISS inside the “Italian Kit” prepared by Thales Alenia Space Italy. They were placed in special protective Cargo Transfer Bags which were then stored in the Leonardo MPLM and, after spending 155 days in space, were returned back to Earth with STS 135, the last mission of Space Shuttle. *The covers were postmarked at the post-office of the Kennedy Space Center on the day of the final landing of the Shuttle Atlantis STS-135, July 21, 2011, that also marked the end of the shuttle era.*



One of the 550 postcards flown to ISS aboard the ATV-2 Johannes Kepler, inside the “German Kit” serviced by the ERNO Philatelie (EADS Astrium, Germany). *Postmarked at the KSC on the day of the final landing of STS-135, July 21, 2011.*

## ATV-2 [3]

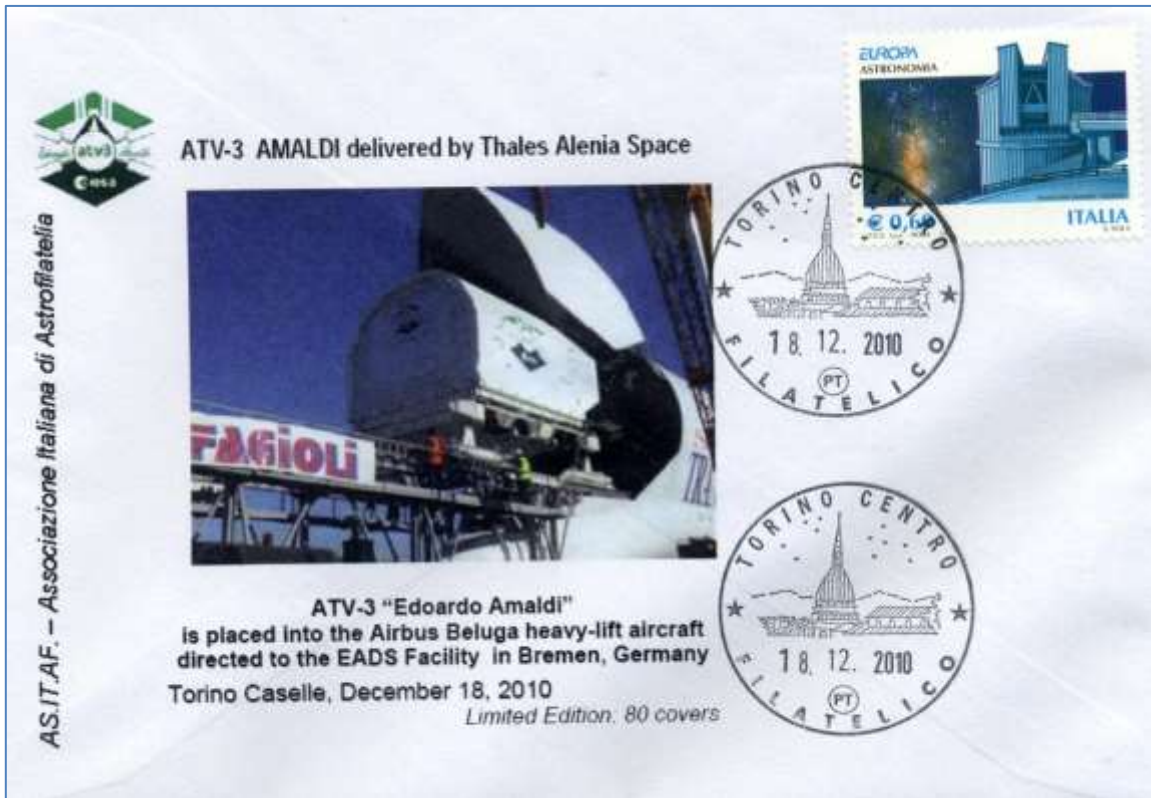


600 covers were serviced by the French Philatelic Club La Marianne (EADS Astrium, France) and flown to ISS aboard the ATV-2, inside the “French Kit”. Altogether 1750 postal items flew aboard ATV-2 and remained on the ISS 156 days.



Few of the 600 covers were extracted from the “French kit” and signed on behalf of ASITAF (Italian Astrophilately Society) onboard ISS by the 6 members of the Expedition 27. *The covers also received the blue ISS octagonal board seal, and the round blue MagISStra mission seal of the Italian Astronaut Paolo Nespoli, one of the crew members of the long-duration Expedition, who is honorary member of ASITAF.*

## ATV-3 Edoardo Amaldi

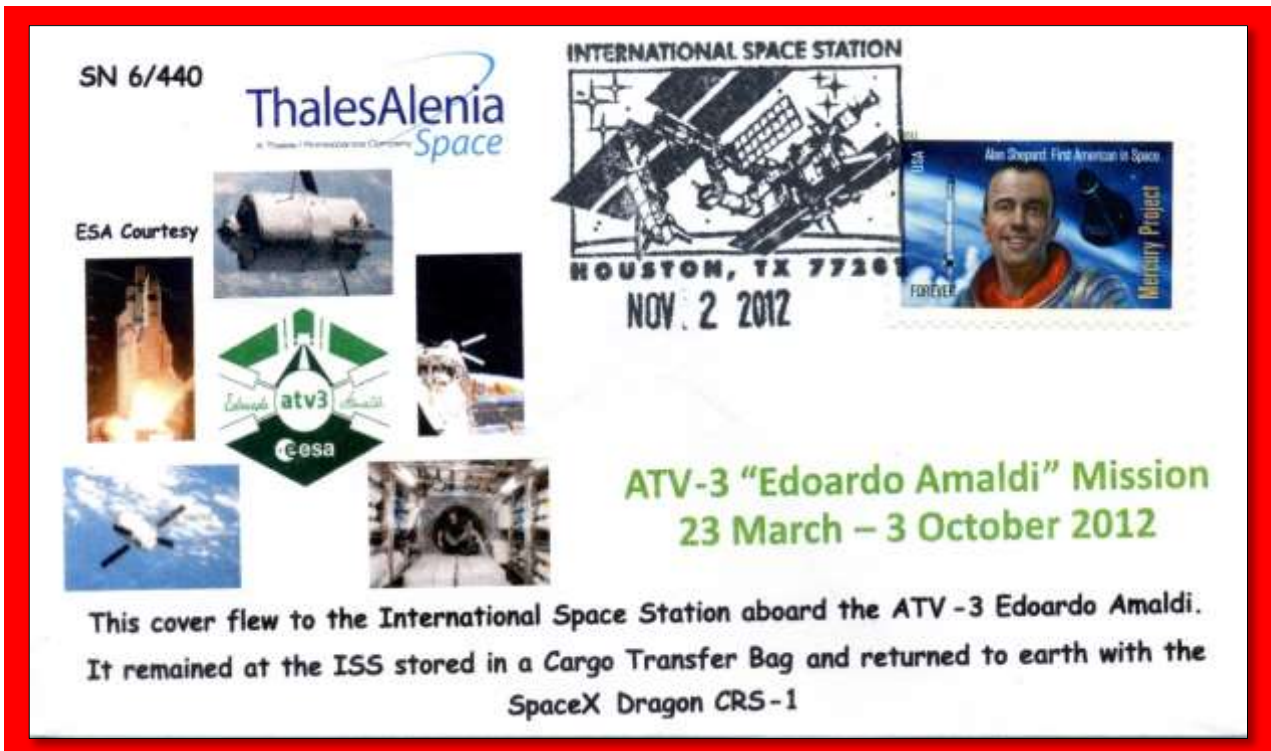


December 18, 2010. The structure of ATV-3, built by Thales Alenia Space Italy (TAS-I), is delivered to EADS facility in Bremen for integration. *Cancelled in Torino where TAS-I is based.*



March 23, 2012. Launch of ATV-3 *Edoardo Amaldi* atop an Ariane 5 rocket from Kourou. ATV-3 carried a cargo of more 3,4 tons of supplies, propellants and dry cargo for the International Space Station. Also delivered 285 kg. of “Flight Water”, i.e. the drinking water for use in space supplied by SMAT (Società Metropolitana Acque Torino), the Public Water Company of Turin, Italy. *Cover designed by Alec Bartos, cancelled on the day of launch in Kourou, using the Ariane 5 launch postmark*

## ATV-3 [2]

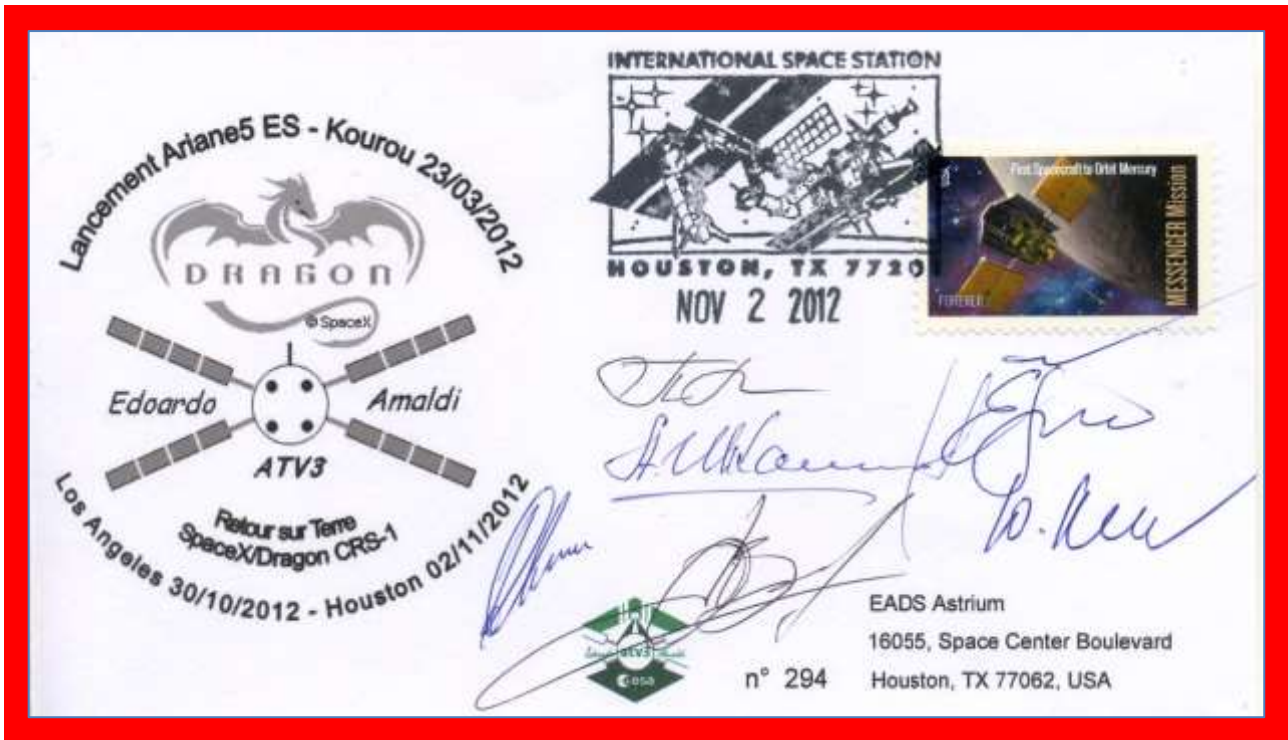


More than 440 covers were flown onboard ATV-3 inside the “Italian kit” and returned back to Earth on Oct. 28<sup>th</sup> 2012, with the Space-X Dragon CRS-1. They were *postmarked at their arrival in Houston on Nov. 2<sup>nd</sup>, 2012*. One of the flown covers, officially printed with the cachet designed by Thales Alenia Space after its return.



The cachet designed by ASITAF for the 440 Italian ATV-3 flown covers was not approved and was discarded. *Only this flown cover with the ASITAF proof survived.*

## ATV-3 [3]



400 covers were flown in the “French Kit” prepared by the French Philatelic Club La Marianne (Airbus, former EADS Astrium-F). Few were extracted from the kit and signed by the crew. All the covers were *postmarked on Nov. 2, 2012, the day they were delivered to NASA in Houston.*

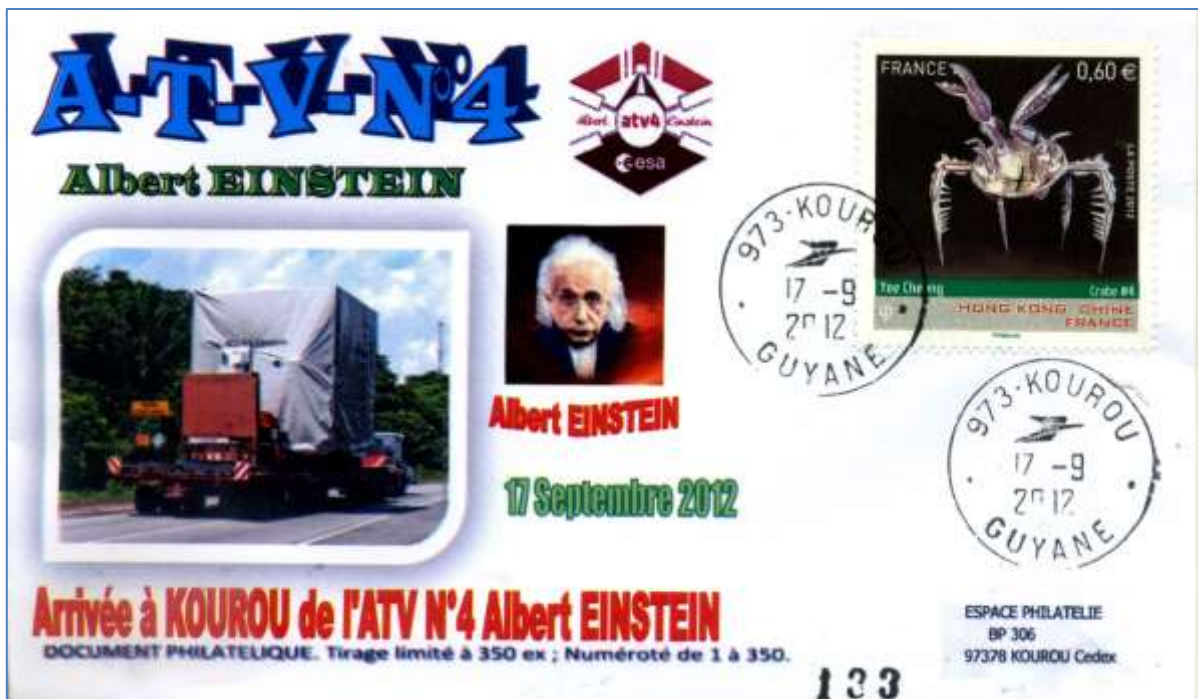


554 postcards were flown in the “German Kit” prepared by ERNO-Philatelie (Airbus, former EADS Astrium Germany).

## ATV-4 Albert Einstein



Dec. 30, 2011. The structure of ATV-4, built by Thales Alenia Space Italy, is delivered to EADS facility in Bremen for integration. *Cancelled of the day of delivery in Torino where TAS-I is based.*

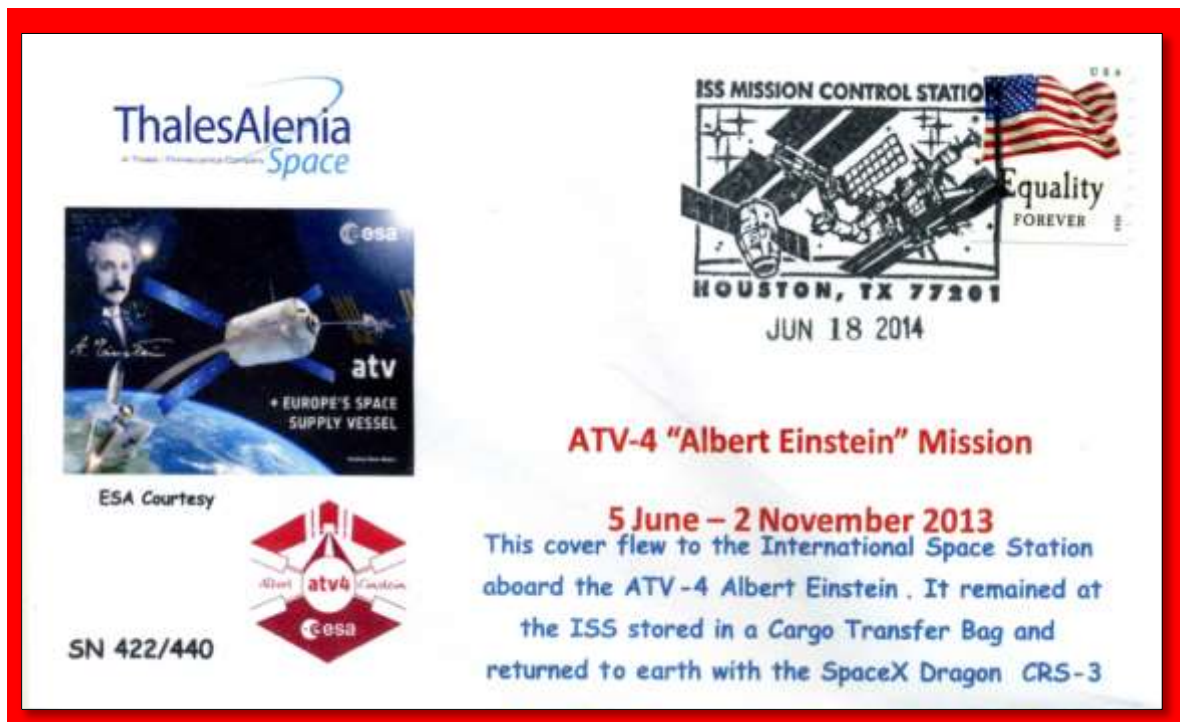


September 9, 2012. After final tests in ESTEC, ATV 4 Albert Einstein arrives at the Pariacabo harbour, in Kourou *Commemorative cover cancelled on the day of arrival with standard Kourou manual postmark*

## ATV-4 [2]



June 5, 2013. Launch of ATV-4 “Albert Einstein” from Kourou, carrying over 4 tons of dry cargo, refuel propellant, water for Russian Segment and air. Also it delivered to the Station “Italian bonus space food” prepared under the supervision of ALTEC (Turin, Italy). Besides the usual *manual special postmark* used in Kourou for the launch of Ariane 5, also the new “Arianespace” non-postal black rubber stamp was added.



440 covers were flown in the “Italian Kit” aboard the ATV-4. The kit was returned to Earth on May 18, 2014 onboard the SpaceX/Dragon CRS-3. The covers remained stored in it until June 18, 2014, when they were recovered as low priority cargo, and *postmarked in Houston*.

### ATV-4 [3]

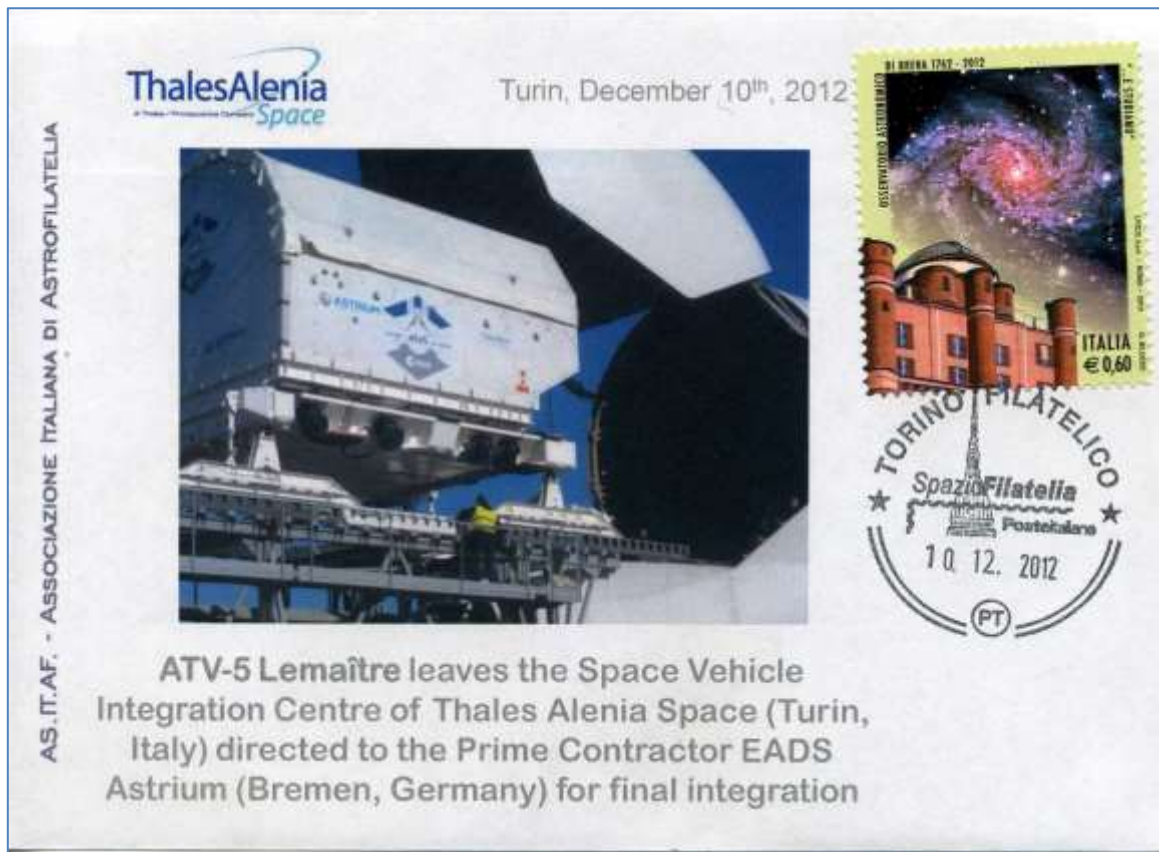


400 covers flew in the “French Kit” aboard the ATV-4 Albert Einstein. They were *postmarked in Houston after return with the special “ISS Mission Control Station” pictorial cancel.*



One of the 550 postcards flown in the “German Kit” aboard the ATV-4. The kit was returned to Earth on May 18, 2014 onboard the SpaceX/Dragon CRS-3. *Cancelled in Houston.*

## ATV-5 Georges Lemaître

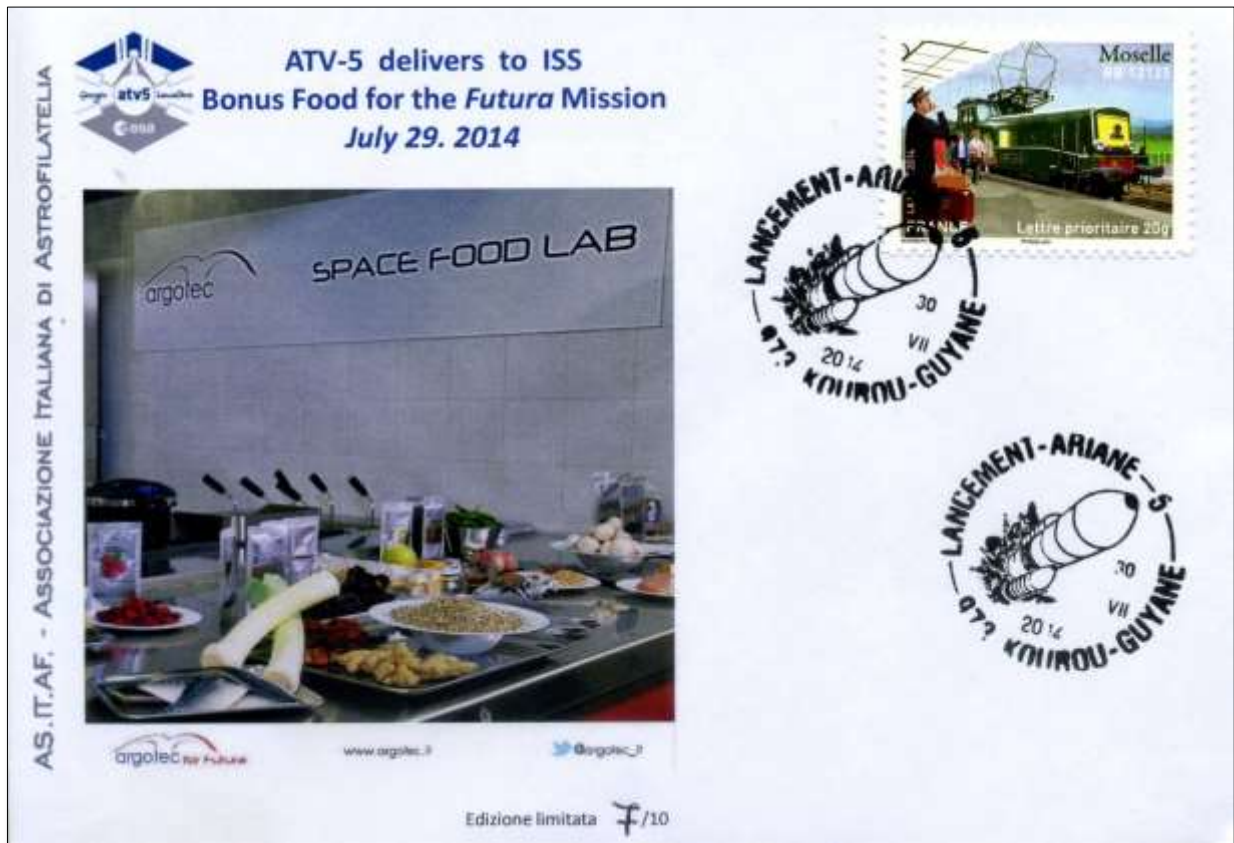


December 12, 2012. The structure of ATV-5 built by Thales Alenia Space Italy is delivered to EADS facility in Bremen for integration. *Cancelled in Torino where TAS-I is based.*



October 7, 2013. After completion of the tests in ESTEC, Noordwijk, The Netherlands, ATV 4 Albert Einstein arrives at the Pariacabo harbour, in Kourou *Commemorative cover cancelled on the day of launch with standard Kourou manual postmark*

## ATV-5 [2]



July 30, 2014. Launch from Kourou of ATV-5 *Georges Lemaître*, carrying to the ISS 4,5 tons of dry cargo, refuelling propellant, water and air. Also Italian “bonus space food” prepared under the supervision of ARGOTEC (Turin, Italy) was delivered to the International Space Station. *Commemorative launch cover cancelled in Kourou with the special Ariane-5 Launch postmark.*



One of the 207 covers stored in the “Italian Kit” carried by ATV-5 Georges Lemaître to the ISS. The kit was returned to Earth on Feb 11th 2015 onboard the SpaceX/Dragon CRS-5 and recovered as low priority cargo. *All the postal items were cancelled on February 17, 2015 at NASA, Houston with the special “ISS Mission Control Station” pictorial cancel.*

## ATV-5 [3]



One of the 400 covers stored in the “French Kit” flown by ATV-5 to the ISS. The kit was returned to Earth on Feb 11th 2015 onboard the SpaceX/Dragon CRS-5 and *cancelled at NASA, Houston*.



One of the 550 postcards flown to the ISS by ATV-5 Georges Lemaitre, within the “German Kit”. After their return the cards were *postmarked at Houston with the special ISS MCS pictorial cancel*.