

# Italy in Space - Collaborations with the U.S.A. and Russia, 1962-2014

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The prestige enjoyed by the Italian Space Agency, both in Europe and around the world, has deep roots, stemming from a path forged over decades of research and international achievements. ASI was established in 1988 with the aim of coordinating Italy's investments in the space sector.

Its activities are wide-ranging: the development of systems for observing the cosmos and our planet, the implementation of cost-effective launch mechanisms for vehicles heading beyond the atmosphere, the use of space for telecommunications, and the design of living modules for future bases capable of hosting humans for extended periods away from Earth.

All of this requires the highest level of expertise and great passion—qualities evident in ASI's work in collaboration with its counterparts around the world (primarily NASA and Russia).

One of ASI's most extraordinary achievements is undoubtedly its decisive contribution to the formation of Italian space-related workgroups, ensuring, for example, that on the International Space Station—the most advanced orbiting laboratory ever built by humankind—Italian astronauts and equipment are now a familiar presence.

The collection aims to chronicle Italian space activities from 1962 to 2014 through the artifacts most commonly used today to document space missions: philatelic covers and stamps, photographs, embroidered patches, and flags that have flown in space.

The exhibition highlights:

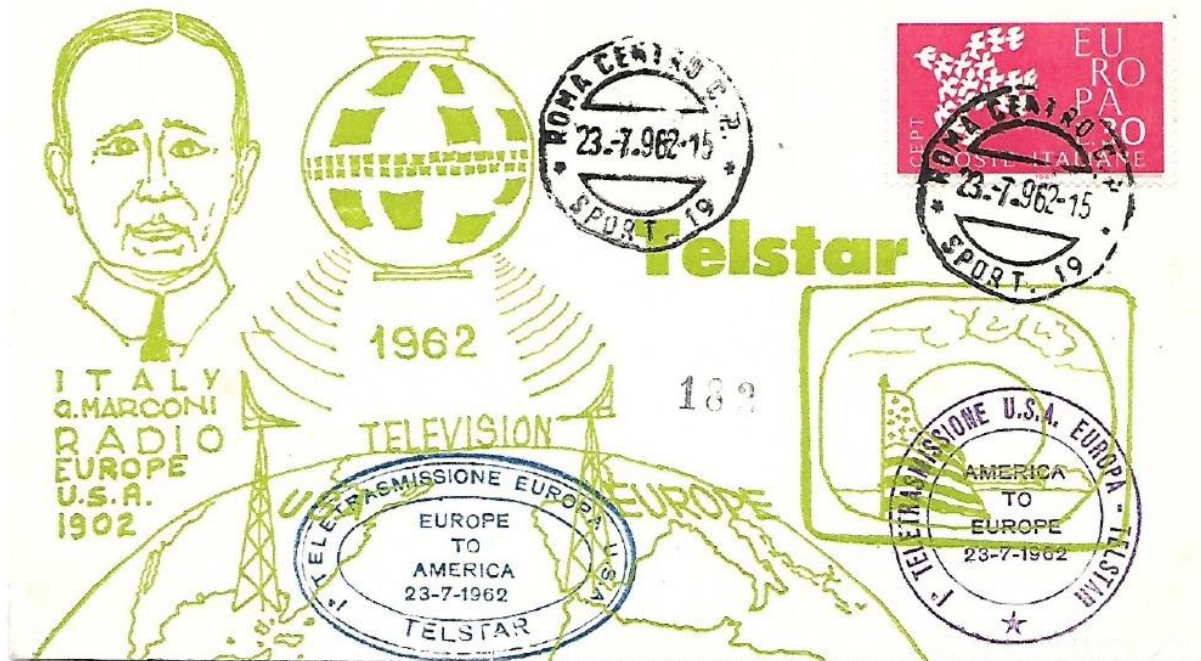
- the early collaborations between NASA and Italy involving the Telstar 1, San Marco, and Sirio satellites
- launches from the Salto di Quirra and San Marco Platform bases
- Italian contributions to the construction of modules designed to fly in space as resupply shuttles or permanent modules of the ISS, such as Spacelab, MPLM, ATV, Cupola, and Node 3
- Italian contributions to the supply of instruments or components for probes and satellites such as Ulysses, Italsat F1, Lageos 2, Cassini, Integral, and Rosetta
- the missions of Italian astronauts Malerba, Cheli, Guidoni, Vittori, Nespoli, Parmitano, and Cristoforetti, who flew on the Space Shuttle and Soyuz spacecraft.



The San Marco project was launched by Luigi Broglio in 1966 with the inauguration of the space center that now bears his name, consisting of three platforms located 32 km from Malindi (Kenya), not only because of its scientific value, but also thanks to the recognition of his capabilities by the U.S., which granted him access to "Scout" launch vehicle technology to carry out satellite launches from the space center.

# TELSTAR 1

Launched on 10 July 1962 by a Delta rocket, it was the first commercial satellite for telephone communications and television broadcasts. On 23 July, a message sent from Rome to the satellite was amplified and transmitted to a receiving station in the United States. Commemorative cover marking the first Europe-to-America television broadcast, with a manual postmark of Rome Centro.



In 1963, the Fucino Space Centre became operational: it was here that the first intercontinental television broadcasts were carried out using the Telstar satellite. Postage stamp issued in 1968 by Poste Italiane.



## SAN MARCO

The collaboration between Italy and the USA continues with the launch of this satellite using a Scout rocket. Cover bearing a machine-cancelled postmark from the post office in the Wallops Island military base dated 3 August 1963 (AM), as the launch took place on 2 August after the post office had closed.



# SAN MARCO 1

The Italian Satellite, the first of its kind built in Western Europe, weighing 254 kg, was launched on a Scout X-4 rocket from Wallops Island to study atmospheric density. Cover with a mechanical postmark of Wallops Island dated 15 December 1964 (PM), the day of the launch.



Stamp issued by Poste Italiane on 13/6/2016 to mark the 50th anniversary of the Sardinian Poligono.

## ESRO S 47/1

A satellite for astronomical observation in the ultraviolet spectrum, launched by a Skylark 3 rocket from the Salto di Quirra launch site, an Italian base for ballistic missile launches.

Cover with a manual postmark of Perdasdefogu (Nuoro) dated 5 October 1968, the day of the launch.



Weltraum-Philatelie  
85 Nürnberg  
Herrnhütstraße 48  
West Germany

# EXPLORER 42

## Small Astronomy Satellite

**LAUNCHED**  
5:54 A.M. EST, 12 Dec.  
from San Marco  
sea platform  
in  
Formosa Bay,  
KENYA  
(Indian Ocean)

officially named  
**UHURU**  
(Freedom in Swahili)

Because Dec. 12 is the  
first anniversary of  
Kenya Independence

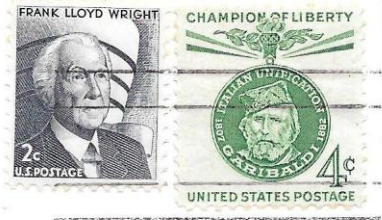
**Italian launch team**  
in  
agreement  
with  
University  
of Rome

Satellite in Equatorial Orbit  
for X-ray Astronomy Research

**Explorer 42**

First U.S. satellite  
launched by  
another country

CAPE CANAVERAL, FL  
DEC 12  
1970  
32920



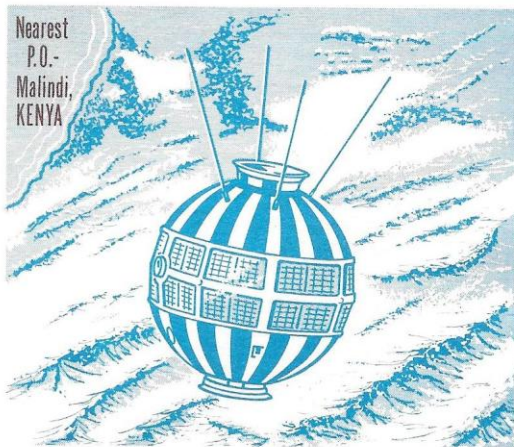
The first American satellite launched from a foreign country. It was launched from the San Marco platform, off the coast of Kenya, by an Italian team. Cover with a mechanical postmark of Cape Canaveral, this time acting as a tracking station, dated 12 December 1970 (AM), the day of the launch.



The success of the San Marco project in a 1975 stamp depicting San Marco Satellite flying over the platform

## SAN MARCO 4

New Italian-American collaboration on the study of atmospheric density. Satellite launched by a Scout D rocket from the San Marco platform. Cover with a postmark of Malindi dated 18 February 1974, the day of the launch.



COOPERATIVE ITALIAN—U.S. SATELLITE  
—to measure atmospheric density,  
temperature and composition

## SAN MARCO FOUR

LAUNCHED BY SCOUT AT SAN MARCO  
EQUATORIAL RANGE (NGWANA BAY, KENYA)  
FEB. 18, 1974; 10:05 (Universal Time)

**Centro Ricerche  
Aerospaziali**



## SIRIO 1

The first Italian communications satellite was launched into geostationary orbit over the Atlantic Ocean by an American Delta 2000 rocket from Cape Canaveral. It completed its operational life on 28 September 1989.

Cover with a mechanical postmark of the Kennedy Space Center dated 25 August 1977, the day of the launch.



In 1979, to mark the third World Communications Exhibition, Emilio Greco created a sketch for Poste Italiane depicting Sirius alongside a woman talking on an old telephone.

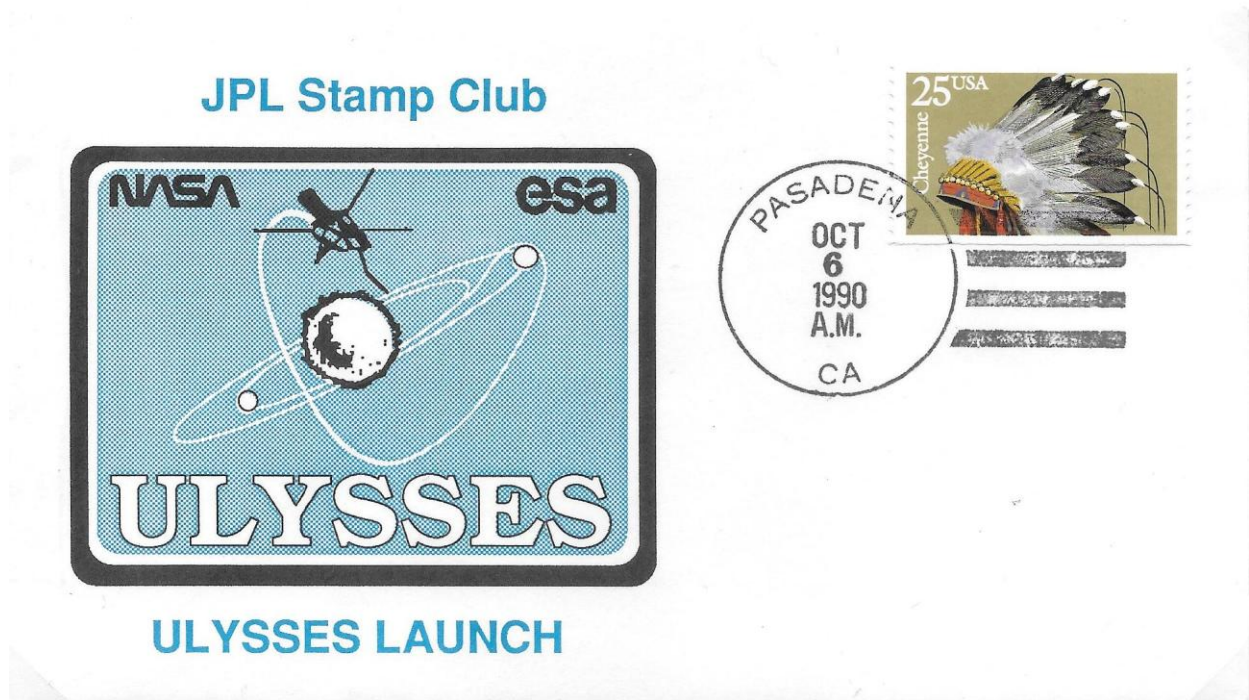
## SPACELAB - SHUTTLE STS 2

Spacelab was a programme that enabled Europe and Italy to successfully establish themselves in the field of co-constructing large 'pressurised space modules'. The space laboratory was used for the first time on board the shuttle Columbia STS-2. Cover with a KSC plate cancellation dated 12 November 1981, the day of the launch



# SONDA ULYSSES

A joint ESA-NASA mission which, for the first time, involves an orbit perpendicular to the ecliptic, passing over the Sun's poles. The satellite was deployed by the Space Shuttle Discovery during the STS-41 mission. Italy's contribution lies in the "Gravitational Wave Experiment" and in the study of mass loss and ionic composition. Cover with a postmark of Pasadena, the mission control centre, dated the day of the launch, 6 October 1990.



# ITALSAT F 1

The Ariane 44L launch vehicle carries the European EUTELSAT II F2 satellite and the Italian ITALSAT F1 satellite into orbit. The experimental communications satellite, built by Alenia Spazio for the Italian Space Agency, is designed to provide coverage of the national territory in the 20-30 GHz band. Cover with a hand-cancelled postmark from Kourou dated 15 January 1991, the day of the launch.



## TSS 1 - Shuttle STS 46

A joint ESA-NASA mission which, for the first time, involves an orbit perpendicular to the ecliptic, passing over the Sun's poles. The satellite was deployed by the Space Shuttle Discovery during the STS-41 mission. Italy's contribution lies in the "Gravitational Wave Experiment" and in the study of mass loss and ionic composition. Cover with a postmark of Pasadena, the mission control centre, dated the day of the launch, 6 October.



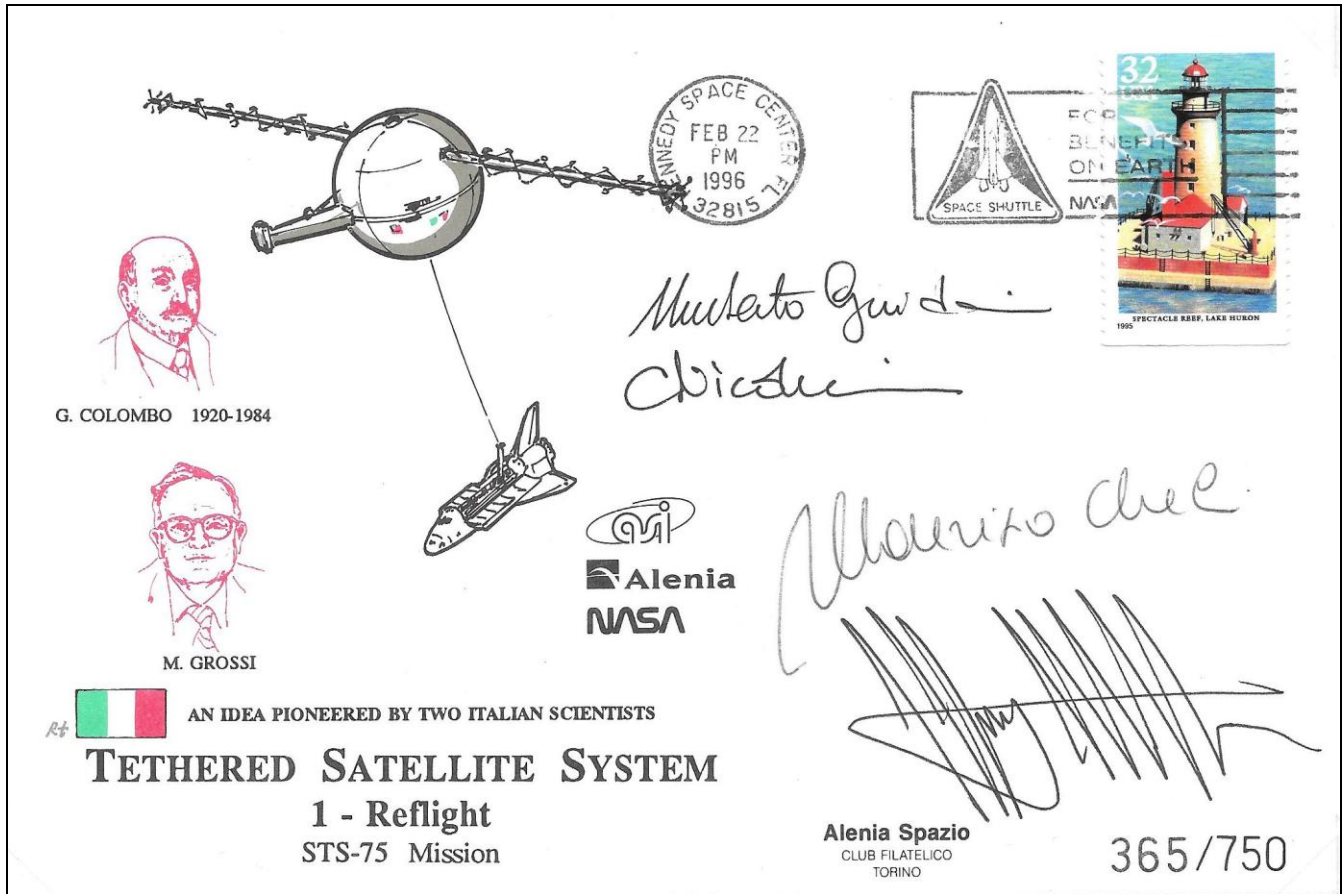
## LAGEOS 2

The Ariane 44L launch vehicle carries the European EUTELSAT II F2 satellite and the Italian ITALSAT F1 satellite into orbit. The experimental communications satellite, built by Alenia Spazio for the Italian Space Agency, is designed to provide coverage of the national territory in the 20-30 GHz band. Cover with a manual postmark from Kourou dated 15 January 1991, the day of the launch.



## SHUTTLE STS 75

Maurizio Cheli (ESA) and Umberto Guidoni (ASI) attempted the second Tethered experiment, which ended with the loss of the satellite. Before the cable connecting it to the Shuttle snapped, the Tethered experiment succeeded in generating electricity. KSC mechanical postmark dated 22/2/96, the day of the launch.



## Sonda CASSINI - HUYGENS

The Cassini spacecraft finally releases the Huygens probe after a seven-year journey; having utilised the 'slingshot' effect provided by flybys of Earth and Venus, the probe enters Titan's orbit.

The ASI's contribution includes the antenna, the K-band telecommunications system, the star tracker and the spectrometer, as well as participation in the most important instruments on the orbiter and the probe. Cover with a KSC special postmark of the day of the launch, 15 October 1997.



The importance of Italian technology in the field of space telecommunications is celebrated by the 1991 issue of two stamps dedicated to the DRS satellite and the Hermes and Columbus projects.

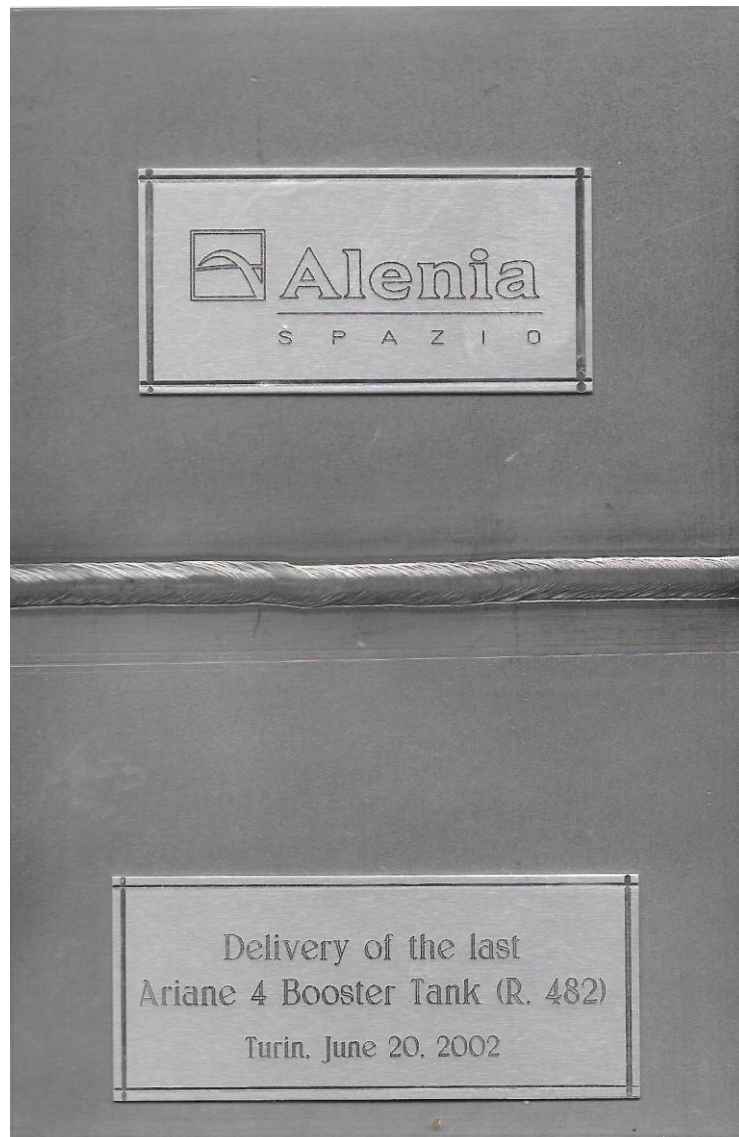
## MPLM 1 - Shuttle STS 102



Discovery delivers the first of the three MPLM modules (Leonardo, Raffaello and Donatello) - manufactured by ASI and transferred to NASA following bilateral ASI-NASA agreements - to the International Space Station. In return, these agreements provide Italy with opportunities to use the ISS and to send Italian astronauts on missions. The launch took place from the Kennedy Space Centre on 8 March 2001. Official mission emblem embroidered on fabric.

## Vettore ARIANE 4

Ariane 4 is a launch vehicle developed by the Centre national d'études spatiales, with the approval of the European Space Agency (ESA). The rocket was used in many variants, with two or four additional engines, boosters, using either solid or liquid fuel. In particular, the liquid-propellant boosters were an absolute novelty in the West, the only previous example having been seen in the Chinese Space Programme. Boosters can be used to launch a vehicle into Earth orbit and are practically indispensable for reaching beyond it. These booster rockets detach once their fuel is exhausted, Fragment of material used in the construction of the 'booster tanks' by Alenia Spazio.



## Soyuz TM 34

Roberto Vittori, the first Italian to fly on a Russian spacecraft with commander Yuri Gidzenko, with over 300 days spent on the MIR and ISS space stations, and South African entrepreneur Mark Shuttleworth, the second 'space tourist'.



## INTEGRAL

The International Gamma-Ray Astrophysics Laboratory is a European mission, in collaboration with Russia and USA, designed to observe the highest-energy radiation in the Universe from space. Italy is providing the "IBIS" telescope and contributing to the development of the "SPI" high-energy spectrometer. Cover with postmark of the Baikonur Cosmodrome dated the day of the launch, 17 October 2002.



## Sonda ROSETTA

An ESA mission to study comets. Many of the instruments on board both the orbiter and the PHILAE lander are Italian. Furthermore, Alenia Spazio was responsible for the assembly, integration and testing of the satellite, as well as for the development of the highly sensitive on-board digital transponder that will enable telecommunications with Earth at a distance of around one billion kilometres.

Cover with a manual postmark of Pasadena, the mission's tracking station, dated the day of launch, 4 March 2004.



*Launch*



*Gus W. Katzmann  
4365 Oakmead  
White Bear, MN  
SU/ATA, IASP,*

In 2005, the Post Office issued an innovative stamp to mark the exploration of Mars, printed on self-adhesive paper with a silver hologram and text in interference ink. The stamp depicts the radar orbiting the Red Planet.



## SOYUZ TMA 6

The Italian Roberto Vittori, alongside the Russian Krikalev and the American Phillips, is leading the ENEIDE mission, sponsored by the Italian Ministry of Defence and the Lazio region, with the support of Finmeccanica. Many of the experiments being conducted on board have been developed by Italian researchers and built by Italian companies.

Photograph of the crew and the mission's embroidered emblem.



## Soyuz TMA 7

A very rare Italian flag that travelled aboard the Soyuz TMA-7 spacecraft to the International Space Station (ISS), where it remained for 189 days before being brought back to Earth by Commander Valeriy Tokarev. In addition to Tokarev's signature, the flag bears the on-board postmark of the Russian segment of the ISS, dated 9 April 2006, the day of departure from the Station.



## NODE 2 - STS 120

The Discovery shuttle mission has a strong Italian presence: Italian astronaut Paolo Nespoli returns to the space station, and the NODE 2 module, built by the Italian company Alenia Spazio, is delivered. Cover with a manual KSC postmark dated 23 October, the day of the launch.



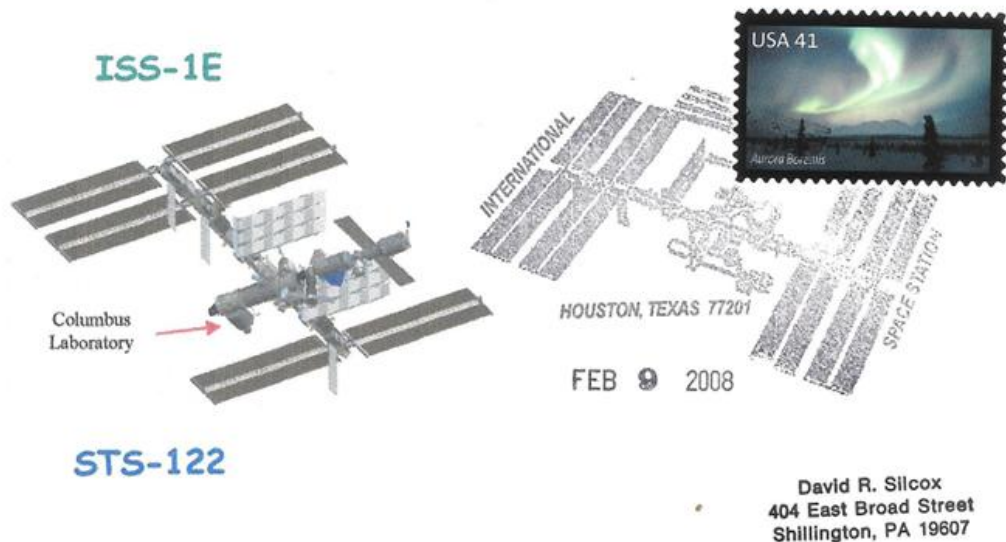
Photo of the Shuttle crew together with the resident crew.



## Columbus - STS 122

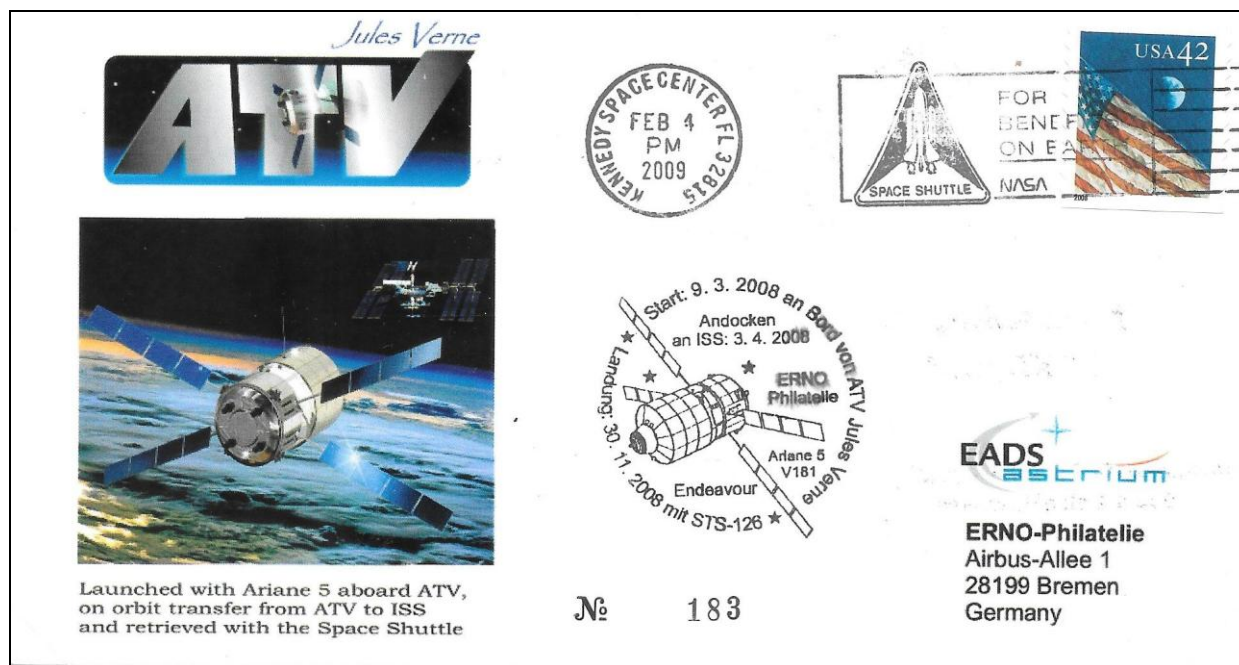
The primary objective of the mission is to install the Columbus laboratory on the Station; this was built for the ESA in collaboration with Alenia Spazio and EADS and transported by the space shuttle Atlantis.

Cover bearing a special manual postmark of Houston, home to the mission control centre, dated 9 February 2008, the day the Space Shuttle docked with the space station.



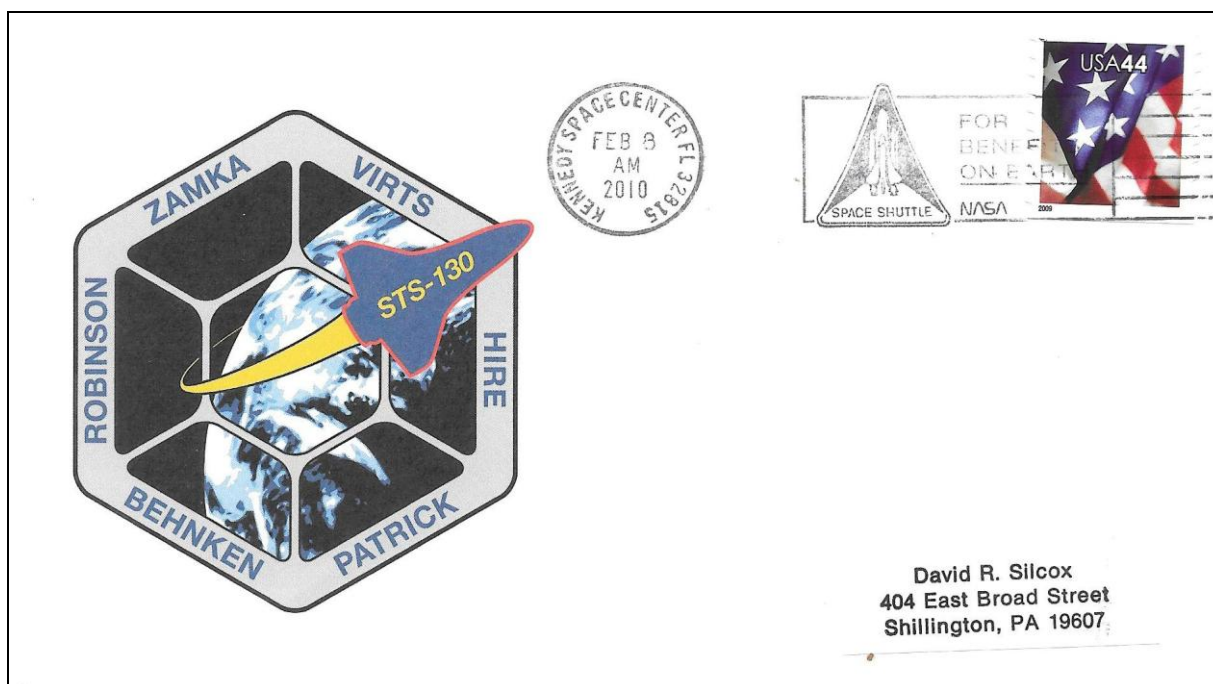
# ATV 1

The Automated Transfer Vehicle was developed by ESA under a contract awarded to EADS Astrium, with the Italian company Thales Alenia Space acting as the main subcontractor. The primary task of this automated giant was to resupply the space station with water, air, food, fuel, spare parts and scientific equipment. Cover transported to the ISS by the ATV Jules Verne, bearing a KSC mechanical postmark dated 4 February 2009, the date of the envelopes' recovery following the return of the STS-126 shuttle, which brought them back to Earth.



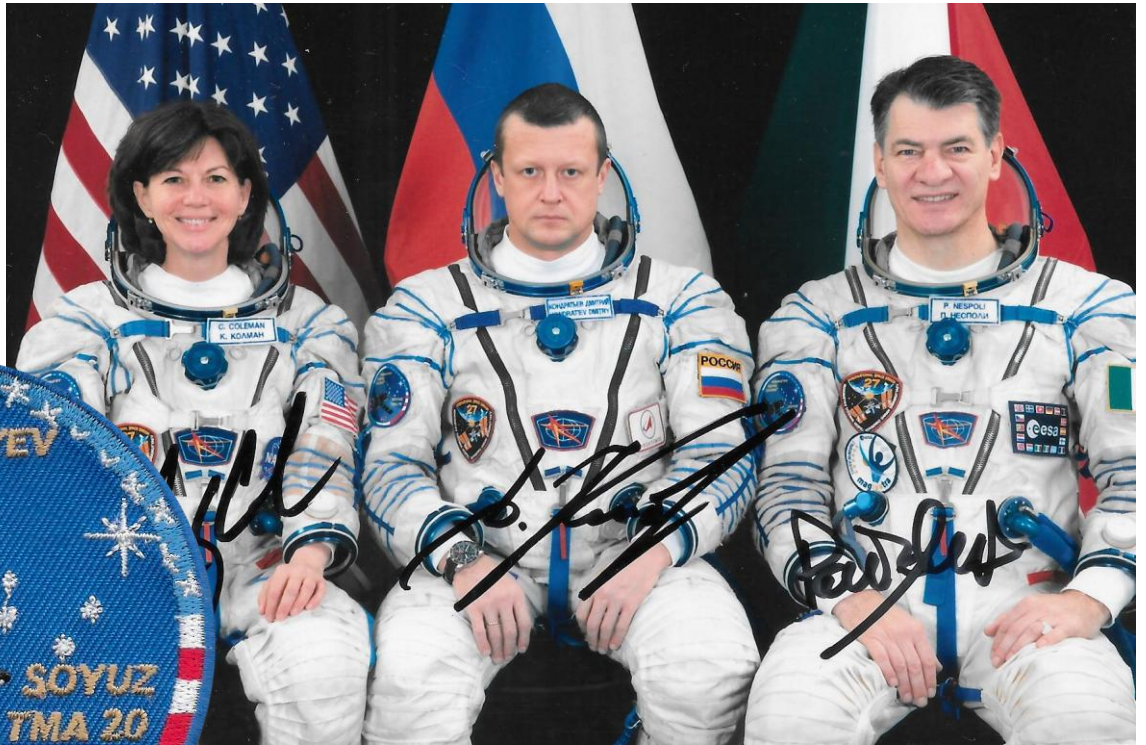
## Node 3, Cupola - STS 130

Mission of the Endeavour shuttle to deliver the NODE 3 (Tranquility) and Cupola modules, which were built and assembled under the supervision of Thales Alenia Space. Cover with a KSC mechanical postmark dated 8 February 2010, the day of the launch.



# Soyuz TMA 20

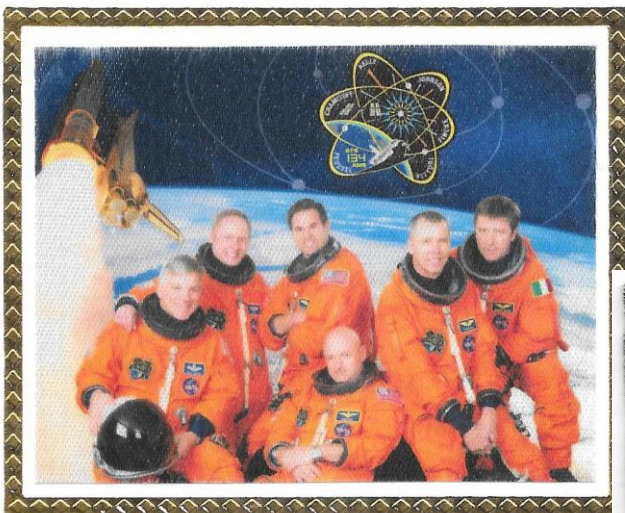
Paolo Nespoli is currently the tallest astronaut to have flown aboard a Soyuz, standing at 188 centimetres. According to RKK Energia's president, Vitaly Lopota, a bespoke seat and associated hardware were manufactured specifically for Nespoli. Photo of the crew and the mission emblem embroidered on fabric.



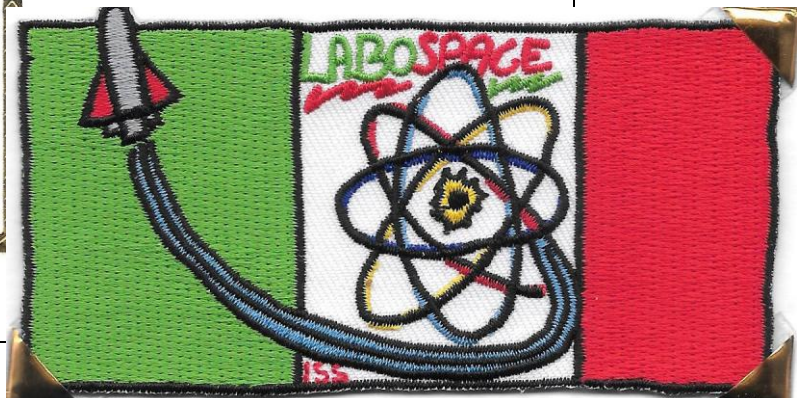
## Space Shuttle STS 134

The final mission of the Space Shuttle Endeavour, which delivered the Alpha Magnetic Spectrometer and the EXPRESS Logistics Carrier 3 to the station. 'Dama' is the name given by an 11-year-old girl to the mission of the Italian ESA astronaut Roberto Vittori, and another girl designed the logo. Envelope with a hand-stamped KSC postmark dated 16 May 2011, the day of the launch, and the emblem of Vittori's 'Dama' mission embroidered on fabric.

Launch of the Endeavour STS-134  
134th Space Shuttle Mission



Colorano "Silk" Cachet



## Soyuz TMA 09 M

Luca Parmitano is the latest Italian astronaut on the ISS, appointed by ASI for the "Volare" mission and the first Italian to carry out extravehicular activities. Parmitano's second spacewalk was cut short by an emergency return to the spacecraft due to a build-up of water in his helmet, which made it difficult for him to see and breathe. Photo of the crew comprising Karen L. Nyberg, Fëdor Jurčichin and Parmitano



Research into the gamma rays that travel through space is vital for safeguarding the health of astronauts. This is the task of the small AGILE satellite, built entirely in Italy, which is commemorated on this 2009 stamp.

## Soyuz TMA 15 M

Among the crew members is Samantha Cristoforetti, Italy's seventh astronaut and the first Italian woman in space. The postponement of the return date, caused by the accident involving the Progress M-27M spacecraft, which disintegrated during an uncontrolled re-entry into Earth's atmosphere, enabled Cristoforetti to break the record for the longest continuous stay in orbit by a female astronaut (199 days). Mission emblem embroidered on fabric.

