



Human Spaceflight
SPACE FOR LIFE

Italian
Soyuz Mission
ENEIDE



The Crew

Primary Crew: Roberto Vittori (ESA)

Roberto Vittori is the primary ESA astronaut for the Italian Soyuz Mission. As part of this mission he will be carrying out a full experimental programme as well as being the Flight Engineer in the Soyuz TMA-6 on the flight to the ISS and in the Soyuz TMA-5 for the return flight. In this role he will be taking an active part in piloting the spacecraft, which will bring him and the other crewmembers to and from the ISS.



Italian ESA astronaut Roberto Vittori (Image: ESA)

Personal data

Born on 15 October 1964 in Viterbo, Italy, Roberto is married to Valeria Nardi of Città di Castello, Italy. They have three children. He enjoys soccer, running, swimming and reading.

Education

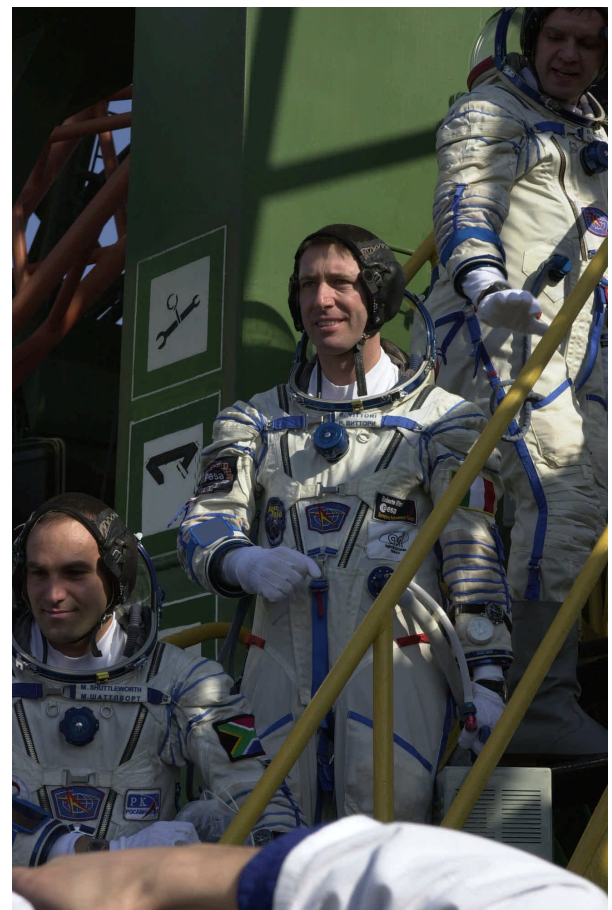
Graduated from the Italian Air Force Academy in 1989. Completed basic training with the US Air Force at Reese Air Force Base in Texas, USA, in 1990. Graduated from the US Navy Test Pilot School in 1995. Completed the Italian Air Force's Accident Prevention course (Guidonia A.F.B., Italy) and Accident Investigation course (Kirtland A.F.B., New Mexico, USA) between 1996 and 1997.

Special honours

Academic award at the Undergraduate Pilot Training, Reese Air Force Base, Texas. Honour student at the Test Pilot School, Patuxent River, Maryland. Honour student at the United States Flight Safety School, Kirtland Air Force Base, New Mexico. Italian Air Force Long Service Medal (1997).

Experience

Following graduation from undergraduate pilot training in 1990, Roberto Vittori flew Tornado GR1 aircraft with the 155th Squadron, 50th Wing, Piacenza, Italy from 1991 to 1994. During that time, he qualified for day/night air-to-air refuelling and became a formation leader.



Roberto Vittori (centre) prior to launch of the Marco Polo mission (Image: ESA/ASI/Aeronautica Militare)

In 1995, he completed the US Navy Test Pilot School training, he then served at the Italian Test Centre as project pilot for the development of the new European aircraft, the EuroFighter EF2000 until 1998. From 1996 to 1998, he was the



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SPACE FOR LIFE

Italian
Soyuz Mission
ENEIDE



The Crew

national representative in the Beyond Visual Range Air-to-Air Missile (BVRAAM) research and development programme.



Roberto Vittori after landing of the Marco Polo Mission
(Image: ESA/ASI - S. Corvaja)

In 1997, he attended the US Air Force Flight Safety School and from 1997 to 1998, he was Wing Flight Safety Officer at the Italian Test Centre. He was also a teacher of aerodynamics for the Italian Air Force's Accident Investigation Course.

Roberto Vittori is a Major in the Italian Air Force. He has logged nearly 2000 hours in over 40

different aircraft including F-104, Tornado GR1, F-18, AMX, M-2000, G-222 and P-180.

In July 1998, he was selected as an astronaut by the Italian Space Agency (ASI), in cooperation with ESA, and one month later, he joined the European Astronaut Corps, whose homebase is ESA's European Astronaut Centre in Cologne, Germany.

In August 1998, he was relocated to NASA's Johnson Space Center in Houston, Texas and entered the 1998 Astronaut class for participation in a training programme that qualifies astronauts for future assignments on the Space Shuttle and the International Space Station. Roberto Vittori completed his mission specialist training and also performed technical duties in the Space Shuttle Operations System Branch.

In August 2001 he took up training as board engineer at the Yuri Gagarin Cosmonaut Training Centre (GCTC) in Star City near Moscow.

In August 2002, Roberto Vittori was relocated to NASA's Johnson Space Center in Houston, where he was supporting the New Generation Space Vehicles Branch.

Spaceflight Experience

From 25 April to 5 May 2002, Roberto Vittori participated in the Marco Polo Soyuz mission to the International Space Station, under an agreement between the Russian Space Agency Rosaviakosmos (now Roscosmos), the Italian Space Agency, ASI and ESA. One main goal of this mission was the successful delivery of a new "lifeboat" to the International Station for use by the resident crew in the event of an emergency.



The Crew

Primary Crew: Sergei Krikalev (Roscosmos)

Krikalev will be commander of the Soyuz TMA-6 spacecraft, which will take the Italian Soyuz mission to the ISS and will become ISS Expedition 11 Commander taking over from NASA astronaut Leroy Chiao who has been stationed on the ISS since October 2004.



Cosmonaut Sergei Konstantinovich Krikalev during ISS Expedition 11 training (Image: NASA)

Personal Data

Born 27 August 1958, in Leningrad, Russia. He is married to Elena Terekhina of Samara, Russia and they have one daughter. He enjoys swimming, skiing, bicycle riding, aerobic flying, and amateur radio operations, particularly from space.

Education

He graduated from high school in 1975. In 1981 he received a mechanical engineering degree from the Leningrad Mechanical Institute, now called St. Petersburg Technical University.

Special Honors

He was a member of the Russian and Soviet national aerobic flying teams, and was

Champion of Moscow in 1983, and Champion of the Soviet Union in 1986. For his space flight experience, he was awarded the title of Hero of the Soviet Union, the Order of Lenin, the new title of Hero of Russia, the French title of L'Officier de la Légion d'Honneur, and the NASA Space Flight Medal (1994, 1998).

Experience

After graduation in 1981, he joined Energia, the Russian industrial organization responsible for manned space flight activities. He tested space flight equipment, developed space operations methods, and participated in ground control operations. When the Salyut 7 Space Station failed in 1985, he worked on the rescue mission team, developing procedures for docking with the uncontrolled station and repairing the station's on-board system.

Krikalev was selected as a cosmonaut in 1985, completed his basic training in 1986, and, for a time, was assigned to the Russian Buran Shuttle programme. In early 1988, he began training for his first long-duration flight aboard the Mir Space Station. This training included preparations for at least six EVAs (spacewalks), installation of a new module, the first test of the new Manned Maneuvering Unit (MMU), and the second joint Soviet-French science mission.

In April 1990, Krikalev began preparing for his second flight as a member of the backup crew for the eighth long-duration Mir mission, which also included 5 EVAs and a week of Soviet-Japanese operations. In December 1990, Krikalev began training for the ninth Mir mission which included training for 10 EVAs. In April 1993, he was assigned as prime mission specialist on STS-60 Space Shuttle mission and as back-up to Vladimir Titov in September 1993 for the STS-63 Shuttle mission.

After serving as a mission specialist on the STS-60 mission, Krikalev returned to duty in Russia. Periodically he returned to the Johnson Space Center in Houston to work with the CAPCOM (Capsule Communicator) in Mission Control and ground controllers in Russia supporting joint US/Russian missions. To date he has supported STS-63, STS-71, STS-74 and STS-76 missions.

Spaceflight Experience

Krikalev's first mission was as part of the fourth Mir Expedition Crew. He was flight engineer on



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the Soyuz TM-7, which was launched to the Mir Space Station on 26 November 1988, with Commander Alexander Volkov, and European astronaut Jean-Loup Chrétien who became the first European to carry out a spacewalk during the mission on Mir. The previous crew (Vladimir Titov, Musa Manarov, and Valeri Polyakov) remained on Mir for another twenty-five days, marking the longest period a six-person crew had been in orbit. After the previous crew returned to Earth, Krikalev, Polyakov, and Volkov continued to conduct experiments aboard the Mir Station. Because arrival of the next crew had been delayed, they prepared Mir for a period of unmanned operations before returning to Earth on 27 April 1989.

Krikalev's next mission was as part of the ninth Mir Expedition Crew. The Soyuz TM-12 launched to Mir on 19 May 1991, with Krikalev as flight engineer, Commander Anatoly Artsebarsky, and British astronaut Helen Sharman. Sharman returned to Earth with the previous crew after one week, while Krikalev and Artsebarsky remained on Mir. During the summer, they conducted six EVAs to perform a variety of experiments and some station maintenance tasks.

In July 1991, Krikalev agreed to remain on Mir as flight engineer for the next crew, which were scheduled to arrive in October as the next two planned flights had been reduced to one. The engineer slot on the Soyuz TM-13 flight on 2 October 1991, was filled by Toktar Aubakirov, an astronaut from the Soviet republic of Kazakhstan, who had not been trained for a long-duration mission. Both he and Franz Viehböck, the first Austrian astronaut, returned with Artsebarsky on 10 October 1991. Commander Alexander Volkov remained on board with Krikalev. After the crew replacement in October, Volkov and Krikalev continued Mir experiment operations and conducted another EVA before returning to Earth on 25 March 1992.

Krikalev flew on STS-60, the first joint US/Russian Space Shuttle mission. Launched on 3 February 1994, STS-60 was the second flight of the Space Habitation Module-2 (Spacehab-2), and the first flight of the Wake Shield Facility. During the 8-day flight, the crew conducted a wide variety of materials science experiments, both on the Wake Shield Facility and in the Spacehab, earth observation, and life science experiments. Krikalev conducted significant portions of the Remote Manipulator System (RMS) operations during the flight. STS-60 landed at Kennedy Space Center, Florida, on 11 February 1994.

Krikalev flew on the STS-88 Shuttle mission (4-15 December 1998), the first International Space Station assembly mission. During the 12-day mission the Unity module was mated with Zarya module. Two crew members performed three space walks to connect umbilicals and attach tools/hardware for use in future EVA's. The crew also performed IMAX Cargo Bay Camera operations, and deployed two satellites.

Krikalev was a member of the ISS Expedition-1 crew. This was launched on 31 October 2000 on a Soyuz rocket from the Baikonur launch site in Kazakhstan, with the Soyuz TM-31 spacecraft successfully docking with the Station on 2 November 2000. During their stay on the Station they prepared the inside of the orbital outpost for future crews. They also saw the Station grow in size with the installation of the US solar array structure and the US Destiny Laboratory Module. They left the Station with the STS-102 crew, undocking from the Station on 18 March 2001, landing at the Kennedy Space Center, Florida, on 21 March 2001.

In completing his fifth space flight, Krikalev logged more than 1 year, 5 months and 10 days in space, including seven EVAs. Krikalev is currently in training as commander of ISS Expedition 11.



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The Crew

Primary Crew: John Phillips (NASA)

John Phillips will be the ISS Expedition 11 Flight Engineer, taking over from Russian Roscosmos Cosmonaut Salizhan Sharipov who has been stationed on the ISS since October 2004.



NASA astronaut John Phillips during ISS Expedition 11 training (Image: NASA)

Personal Data:

Born 15 April 1951 in Fort Belvoir, Virginia. Married to Laura Jean Doell of Scotia, New York. They have two children. He enjoys skiing, kayaking, hiking, family recreation and various fitness activities.

Education:

Received a bachelor of science degree in mathematics and Russian from the US Naval Academy in 1972; a master of science degree in aeronautical systems from the University of West Florida in 1974; a master of science degree and a doctorate in geophysics and space physics from the University of California, Los Angeles in 1984 and 1987 respectively.

Special Honors:

National Merit Scholar; graduated second of 906 in the class of 1972 at US Naval Academy; received 2 NASA Group Achievement Awards for contributions to the Ulysses Spacecraft Mission and the Los Alamos National Laboratory Distinguished Performance Award in 1996.

Awarded the NASA Space Flight Medal and various military awards.

Experience:

Phillips received a navy commission upon graduation from the US Naval Academy in 1972 and was designated a Naval Aviator in November 1974. He trained in the A-7 Corsair Aircraft at Naval Air Station Lemoore, California and made overseas deployment with Attack Squadron 155 aboard the USS Oriskany and USS Roosevelt. Subsequent tours of duty included navy recruiting in Albany, New York, and flying the CT-39 Sabreliner Aircraft at Naval Air Station North Island, California.

After leaving the Navy in 1982, Phillips enrolled as a graduate student at UCLA. While at UCLA he carried out research involving observations by the NASA Pioneer Venus Spacecraft. Upon completing his doctorate in 1987, he was awarded a J. Robert Oppenheimer Postdoctoral Fellowship at Los Alamos National Laboratory in New Mexico. He accepted a career position at Los Alamos in 1989. While there, Phillips performed research on the sun and the space environment.

From 1993 through 1996 he was Principal Investigator for the Solar Wind Plasma Experiment aboard the Ulysses Spacecraft as it executed a unique trajectory over the poles of the sun. He has authored 156 scientific papers dealing with the plasma environments of the sun, earth, other planets, comets and spacecraft.

Phillips was selected by NASA in April 1996. After completing astronaut candidate training, he held various jobs in the Astronaut Office, including systems engineering and CAPCOM (Capsule Communicator) for the International Space Station. He served as a backup to ISS Expedition-7, completing that assignment in February 2003.

Space Flight Experience:

He flew aboard the STS-100 Shuttle mission (19 April to 1 May 2001). The mission included (now former) ESA astronaut Umberto Guidoni. During the 12-day mission, the crew successfully delivered and installed the Canadarm-2 Robotic Arm. They also delivered experiments and supplies aboard the European-built Multi-Purpose Logistics Module Raffaello on its maiden flight. Phillips was the Ascent/Entry Flight engineer and was the intravehicular activity coordinator during two space walks. Phillips is currently in training for ISS Expedition 11.



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SPACE FOR LIFE

Italian
Soyuz Mission
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The Crew

Backup Crew: Robert Thirsk (CSA)



Canadian Space Agency astronaut Robert Thirsk (Image: NASA)

Personal data: Born 17 August 1953, New Westminster, British Columbia, Canada

Education

Attended primary and secondary schools in British Columbia, Alberta, and Manitoba. Received a Bachelor of Science degree in Mechanical Engineering from the University of Calgary in 1976, a Master of Science in Mechanical Engineering from the Massachusetts Institute of Technology (MIT) in 1978, a Doctorate of Medicine from McGill University in 1982, and a Master of Business Administration from the MIT Sloan School of Management in 1998.

Experience

Dr. Thirsk was in the family medicine residency programme at the Queen Elizabeth Hospital in Montréal when he was selected in December 1983 for the Canadian Astronaut Program. He began astronaut training in February 1984 and served as backup payload specialist for the STS-41G Space Shuttle mission in October 1984.

Dr. Thirsk has been involved in various Canadian Space Agency projects including parabolic flight campaigns and mission planning. He served as crew commander for two space mission simulations: the seven-day CAPSULES mission in

1994, at Defence Research and Development Canada in Toronto, and the 11-day NEEMO 7 undersea mission in 2004 at the National Undersea Research Center in Key Largo, Florida. He led an international research team investigating the effect of weightlessness on the heart and blood vessels. He works with educational specialists in Canada to develop space-related curriculum for grade school students.

In June and July 1996, Dr. Thirsk flew as a payload specialist aboard the STS-78 Space Shuttle mission: the Life and Microgravity Spacelab (LMS) mission. During this 17-day flight he and his six crewmates performed 43 international experiments devoted to the study of life and materials sciences. The life science experiments investigated changes in plants, animals, and humans under space flight conditions. The materials science experiments examined protein crystallization, fluid physics and high-temperature solidification of multi-phase materials in a weightless environment.

In August 1998, Dr. Thirsk was assigned by the Canadian Space Agency to NASA's Johnson Space Center in Houston to pursue mission specialist training. This training programme involves advanced instruction on both Shuttle and Space Station systems, EVA (spacewalk), robotic operations, and Russian language. Within the NASA Astronaut Office, Dr. Thirsk serves as a CAPCOM (capsule communicator) for the International Space Station programme. CAPCOMs participate in actual and simulated space missions as a communication link between the ground team at Mission Control and the astronauts in orbit. CAPCOMs speak directly with the Space Station crew, and assist with technical planning for the mission and last-minute troubleshooting.

In 2004, Dr. Thirsk trained at the Yuri Gagarin Cosmonaut Training Centre near Moscow and became certified as a Flight Engineer for the Soyuz spacecraft. He is the backup crewmember to ESA astronaut Roberto Vittori for the ENEIDE mission to the International Space Station.



The Crew

Backup Crew: Mikhail Tyurin (Roscosmos)



Roscosmos cosmonaut Mikhail Tyurin is the backup ISS Commander for Expedition 11 (Image: NASA)

Personal Data:

Mikhail Tyurin lives in Korolev, a city outside of Moscow. He was born 2 March 1960, in Kolomna, Russia (about 60 miles from Moscow) where his parents still reside. He is married to Tatiana Anatolevna Tyurin. They have a daughter, Alexandra, born in 1982. He enjoys sailing in his free time.

Education:

He graduated from the Moscow Aviation Institute in 1984 with a degree in engineering and a specialization in creating mathematical models

related to mechanical flight. He is currently doing graduate work in his field of research.

Experience:

After graduating from the Aviation Institute he began working at the Energia corporation as an engineer. The main subjects of his job have been dynamics, ballistics, and software development. His personal scientific research is connected with the psychological aspects of cosmonauts' training for the manual control of spacecraft motion. In 1993 he was selected to begin cosmonaut training, and in 1998 he started training as a flight engineer for the Expedition-3 crew. He also served as a backup crew member for the first ISS mission.

Space Flight Experience:

Tyurin served as the Flight Engineer for ISS Expedition 3 together with ISS Expedition 3 Commander Frank Culbertson and cosmonaut Vladimir Dezhurov. The 3-man crew were launched on their four-month mission on the International Space Station on board the STS-105 Shuttle mission on 10 August 2001.

During the Expedition 3 tour of duty on the ISS, Tyurin took part in three spacewalks lasting 13 hours and 36 minutes. This included installation of a Strela boom or robotic arm to the Russian Pirs docking module.

The Expedition 3 Crew returned to Earth as part of the STS-108 Shuttle mission, which brought the Expedition 4 Crew to the ISS. STS-108 landed on 17 December 2001. The STS-108 crew included astronaut Daniel Tani the backup ISS Flight Engineer for Expedition 11. Tyurin is currently in training for ISS Expedition 11 activities.



The Crew

Backup Crew: Daniel Tani (NASA)



NASA astronaut Daniel Tani is the backup ISS Flight Engineer for Expedition 11 (Image: NASA)

Personal Data:

Tani was born on 1 February 1961 in Ridley Park Pennsylvania. He is married to Jane Egan from Cork, Ireland and enjoys golf, flying, running, tennis, music, cooking.

Education:

He received a bachelor and a master of science degree in mechanical engineering from Massachusetts Institute of Technology in 1984 and 1988, respectively.

Experience:

After Tani received his bachelor's degree he worked at Hughes Aircraft Corporation in El Segundo, California as a design engineer in the Space and Communications group. In 1986, he returned to the Massachusetts Institute of Technology, and received his master's degree in mechanical engineering in 1988, specializing in human factors and group decision making.

After graduation, Tani worked for Bolt Beranek and Newman in Cambridge, Massachusetts, in the experimental psychology department.

In 1988, Tani joined the Orbital Sciences Corporation in Dulles Virginia, initially as a senior structures engineer, and then as the mission operations manager for the Transfer Orbit Stage. In that role, he served as the Transfer Orbit Stage flight operations lead, working with NASA Johnson Space Center mission control in support of the deployment of the ACTS/Transfer Orbit Stage payload during the STS-51 mission in September 1993.

Tani then moved to the Pegasus programme at the Orbital Sciences Corporation as the launch operations manager. In that capacity, he served as lead for the development of procedures and constraints for the launching of the air launched Pegasus unmanned rocket. Tani was also responsible for defining, training, and leading the team of engineers who worked in the launch and control room.

Selected as an astronaut candidate by NASA in April 1996, Tani reported to the Johnson Space Center in August 1996. Having completed two years of training and evaluation, he qualified for flight assignment as a mission specialist in 1998. He held technical duties in the Astronaut Office Computer Support Branch, and EVA Branch and has served as a Crew Support Astronaut for ISS Expedition 2.

Space Flight Experience:

Tani served as a mission specialist on the STS-108 Shuttle mission (5-17 December 2001). This was the 12th Shuttle flight to visit the International Space Station. The crew delivered the Expedition-4 crew and returned the Expedition-3 crew, which included Expedition 11 backup commander Mikhail Tyurin. The crew unloaded over 3 tons of supplies, logistics and science experiments from the European-built Raffaello Multi-Purpose Logistics Module. During the mission Tani performed a space walk lasting 4 hours and 12 minutes to wrap thermal blankets around ISS Solar Array Gimbals.

Tani is currently in training for ISS Expedition 11 activities.



Returning Crew

Leroy Chiao (NASA) is the ISS Expedition 10 Commander and Salizhan Sharipov (Roscosmos), the ISS Expedition 10 Flight Engineer. They arrived at the ISS on 16 October 2004 in the Soyuz TMA-5 spacecraft with Russian cosmonaut Yuri Shargin who returned with the Expedition 9 Crew 8 days later. The Expedition 10 Crew will return with Roberto Vittori in the Soyuz TMA-5 spacecraft currently docked at the ISS.



Leroy Chiao (NASA) (Image: NASA)

Leroy Chiao was born on 28 August 1960, in Milwaukee, Wisconsin and enjoys flying, basketball, racquetball, and skiing. A graduate in chemical engineering, he received his chemical engineering doctorate from the University of California in 1987.

Before becoming an astronaut in 1991, his work included process, manufacturing and engineering research on advanced aerospace materials, and a joint NASA/Hexcel project for the development of precision space telescope equipment. Chiao has logged over 2000 flight hours in a variety of aircraft.

Prior to his six month role as ISS Commander, Chiao had been among the crew for three separate Space Shuttle missions: In July 1994 he was a mission specialist on the STS-65 mission. The seven-man crew conducted more than 80 experiments into materials and life sciences research. In January 1996, Chiao was a mission specialist on the STS-72 Mission. During the mission Chiao carried out two spacewalks, totalling 13 hours, to demonstrate tools and hardware for evaluation of ISS assembly techniques. In October 2000 Chiao was a mission specialist on board the STS-92 mission. During the mission, the crew attached the Z1 Truss section and Pressurized Mating Adapter 3 to the ISS. Chiao carried out two spacewalks.



Cosmonaut Salizhan Sharipov (Image: NASA)

Salizhan Sharipov was born on 24 August 1964 in the Uzgen, Oshsk region of Kyrgyzstan, which borders Kazakhstan, China, Tajikistan and Uzbekistan. His wife is called Nadezhda and they have one daughter and one son. Salizhan enjoys football and likes to read books.

In 1987, he graduated from the Air Force Pilot School after which he worked as a pilot-instructor. He has logged a total of over 950 hours flying time with experience in flying MiG-21 and L-39 aircraft. In 1994, he graduated from Moscow State University with a degree in cartography.

Selected by the Gagarin Cosmonaut Training Center (GCTC) Sharipov became a cosmonaut-candidate in 1990. In 1992, he completed general space training and became a cosmonaut. As a member of the group he has completed a full course of training for Mir Space Station flights as a crew commander.

Prior to his six-month role as ISS Flight Engineer, Sharipov flew one mission as a mission specialist on the crew of STS-89 (22 to 31 January 1998), the eighth Shuttle-Mir docking mission during which the crew transferred more than 3½ tonnes of scientific equipment, logistical hardware and water from Space Shuttle Endeavour to Mir. Another part of this mission was the last exchange of NASA astronauts stationed on Mir.