

# EXPEDITION 12 MARKING FIVE YEARS OF ONGOING ISS WORK

As the 12th crew to live and work on the International Space Station, United States Astronaut William McArthur and Russian Cosmonaut Valery Tokarev will mark the completion of five years of ongoing work aboard the orbiting laboratory.

The Expedition 12 crew lifted off aboard Soyuz TMA-7 from the Baikonur Cosmodrome in

Kazakhstan on September 30, 2005. With them was Gregory Olsen, who spent eight days on the Station under a contract with Roscosmos, the Russian Federal Space Agency. Olsen is the third private citizen to visit the Station.

McArthur, who will serve as Expedition 12 commander and ISS science officer, and Tokarev, who will serve as flight engineer and Soyuz commander, spent more than a week working with their predecessors, Expedition 11 Commander Sergei Krikalev and NASA Science Officer John Phillips, to transition operations on the ISS to its new inhabitants. Krikalev and Phillips, who had been in space since April 14, 2005, returned to Earth with Olsen on Expedition 11's Soyuz spacecraft in early October.

During their six-month-plus stay, McArthur, a retired U.S. Army colonel, and Tokarev, a Russian Air Force colonel, will focus on preparations for continued Station assembly and science in microgravity. Station operations and maintenance also will take up a considerable share of the Expedition 12



*This view of the International Space Station was taken following the undocking Space Shuttle Discovery's STS-114 mission. The background area includes the upper part of the Caspian Sea. The dark area on the lower right is the Volga River delta.*



*Expedition 12 Commander William McArthur, left, and ISS Flight Engineer Valery Tokarev participate in Human Research Facility Rack training in the ISS laboratory/trainer at Johnson Space Center's Space Vehicle Mockup Facility.*

## CREW PROFILE



William McArthur

**William McArthur, Jr. (Col. U.S. Army, Ret.)**  
**Expedition 12 Commander & ISS Science Officer**

**Born:** July 26, 1951 in Lauring, N.C., but considers Wakulla, N.C. his hometown

**Education:** Graduated from the U.S. Military Academy in 1973 with a degree in applied science and engineering and earned a masters in aerospace engineering from the Georgia Institute of Technology in 1983.

**Experience:** Selected as an astronaut in 1990, McArthur has three previous Space Shuttle flights including missions to the Russian Space Station Mir and the STS-92 flight to the ISS.

**Valery Tokarev (Col. Russian Air Force)**  
**Expedition 12 Flight Engineer & Soyuz Commander**

**Born:** October 29, 1952, in Kap-Yar, Astrakhan Region

**Education:** Graduated from the Stavropol Higher Military Aviation School for pilots and navigators in 1973 and the Gagarin Military Aviation Academy in 1993. In 1997 he earned a masters degree in state administration from the National Economy Academy.

**Experience:** Selected as a cosmonaut in 1993, Tokarev was aboard the Space Shuttle Discovery for a 1999 mission to the ISS.



Valery Tokarev



crew's time, but science-oriented education activities, Earth observation and scientific experiments, both with and without crew involvement, will steadily continue.

Operation of individual experiments is expected to total several thousand hours, adding to the more than 100,000 hours of experiment operation time already accumulated aboard the Station. Some of the experiments from earlier expeditions remain on board the Space Station and will continue to benefit from the long-team research platform provided by the orbiting laboratory. Much of the research will focus on changes in the human body caused by exposure to the microgravity environment of space.

One study aims to mitigate changes in posture and gait after long-duration space flight. The results are expected to aid in developing an in-flight treadmill-training program for Station crewmembers. The goal is to facilitate more rapid recovery of functional mobility after long missions.

Plans also call for space walks by McArthur and Tokarev to continued outfitting of Station hardware and electrical systems and preparing external hardware for the addition of new ISS elements.

McArthur and Tokarev's tour of duty will end in April 2006 when they will be replaced by the Expedition 13 crew.

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