Expedition Seven
MISSION OVERVIEW

To Improve Life Here, To Extend Life to There, To Find Life Beyond.

That is NASA's vision.

Yuri Malenchenko, Expedition Seven Commander:

"The fact that we are together and that it's an international project allows us to continue this effort. We have the capabilities of different countries that we can put together to continue. I think that our Expedition confirms that, shows that we continue working even in such a difficult time period.

We still have our program. It looks different, but we will continue working. We will continue supporting the station. We will continue performing scientific experiments."

Dr. Ed Lu, Expedition Seven Flight Engineer and NASA ISS Science Officer:

"Oh, obviously it's a great challenge. And, we wouldn't be in this business if we didn't like big challenges. I mean, that's what the whole program is about: doing something that's difficult. And that's why I'm really looking forward to it.

… in 10 or 20 years, when we look back at this, I think … I hope they say, 'Hey, they did a really good job keeping this going. And in the end, look at what they made out of this.' That's kind of our real goal here as this increment is to keep that thing moving. Keep our momentum going."

Malenchenko is a veteran cosmonaut who was commander of the Mir 16 mission in 1994. He also flew on STS-106 in September 2000, during which he performed a 6-hour, 14-minute spacewalk with Lu to connect power, data and communications cables to the newly arrived Zvezda Service Module. Lu, a research physicist, began his astronaut training in 1995, and has flown in space twice. Having flown together previously has uniquely prepared Malenchenko and Lu for their mission.

To understand and protect our home planet
To explore the Universe and search for life
To inspire the next generation of explorers
…as only NASA can.

That is NASA's mission.

A Mission of Education and Science

In late April, Expedition Seven Commander Yuri Malenchenko (Col., Russian Air Force) and NASA International Space Station Science Officer and Flight Engineer Ed Lu will launch on the Soyuz TMA-2 spacecraft for a two-day flight to the space station. Malenchenko and Lu will assume formal control of the station from the Expedition Six crew -- Commander Ken Bowersox, Flight Engineer Nikolai Budarin and NASA ISS Science Officer Don Pettit, after six days of handover activities.

The two-person Expedition Seven crew will focus its activities on station operations and maintenance, though research will continue, as will science-focused education activities and Earth observations.

The crew will devote more than 200 hours to U.S., Russian and other partner research that will focus on human life sciences, as well as physics and chemistry, and their applications in materials and manufacturing processes. The station will also continue to serve as a platform to study the Earth's environment. Indeed, Earth observations are expected to occupy a large share of the crew's time.

Among Expedition Seven's most important functions, however, will be to provide motivation and inspiration for today's youth, the next generation of explorers. One of the crew's experiments allows middle school students to control a camera on the space station to take pictures of the Earth. The students will use these images to study the Earth's geography and environment. These young people will add to human knowledge using information that only the space station can provide.

This crew will also build on the education efforts of Expedition Six ISS Science Officer Don Pettit, whose explanations and activities from his "Saturday Morning Science" demonstrations focused on physical phenomena in microgravity. Lu is expected to continue those demonstrations, taking advantage of available time on orbit to reach out to students and researchers.

Station Work Carries On

The Expedition Seven crewmembers will live and work in a 198-ton space station that is 171 feet long, 240 feet wide and 90 feet high. They will work and live in four modules: the Zvezda Service Module, the Zarya Control Module, the Unity Node and the Destiny Laboratory. They also have the Pirs Docking Compartment and Quest Airlock at their disposal.

Malenchenko and Lu are expected to spend about six months aboard the space station. During that time, they will oversee the upgrade of one or two new station software packages, scheduled to be installed in early summer and in the fall. The first upgrade will prepare the station for the additional truss segments that will be delivered and installed during the STS-115/12A mission. The second will bring the station to the STS-116/12A.1 software configuration, which will involve adding another section to the Integrated Truss Structure. Performing these software upgrades during Expedition Seven

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Station Work

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will give ground controllers extra time to test the new software before the assembly elements are actually brought to the station and installed.

Malenchenko and Lu will also work with the station's robotic arm, the Canadarm2. Their robotics work will focus on continuing observations of the state of the station's exterior, maintaining operator proficiency and completing a checkout of the entire robotics system.

Two unmanned Progress cargo craft are scheduled to dock with the station during Expedition Seven, bringing food, water, clothing, personal items, fuel and equipment. The Progress 11 spacecraft is scheduled to launch in early June, and the Progress 12 is scheduled to launch in late summer. In another station first, when the Progress 11 docks to the station, there will be three Russian vehicles docked at the same time – Progress 10 docked to the aft port of Zvezda, the Soyuz TMA-2 docked to Zarya, and Progress 11 at the Pirs Docking Compartment. Periodic, routine reboosts of the station's altitude can be accomplished by firing the engines on either of the Progress spacecraft.

The first visitors Malenchenko and Lu will likely see will be their replacements, the Expedition Eight crew. That crew is scheduled to be launched aboard the Soyuz TMA-3 in mid-October. After about a week of joint operations and handover activities, Malenchenko and Lu will return to Earth aboard the Soyuz TMA-2 that brought them to the station. The TMA-3 will remain at the station for the use of the Expedition Eight crew.

ISS Expedition Facts

Expedition One

Launch	Oct. 2000
Mission	ISS Flight 2R
Return	March 2001
Duration	137 Days

Expedition Two

Launch	March 2001
Mission	STS-102
Return	Aug. 2001
Duration	148 Days

Expedition Three

Launch	Aug. 2001
Mission	STS-105
Return	Dec. 2001
Duration	117 Days

Expedition Four

Launch	Dec. 2001
Mission	STS-108
Return	June 2002
Duration	181 Days

Expedition Five

Launch	June 2002
Mission	STS-111
Return	Nov. 2002
Duration	171 Days

Expedition Six

Launch	Nov. 2002
Mission	STS-113
Return	May 2003
Duration	TBD

Expedition Seven

Launch	April 2003
Mission	Soyuz TMA-2
Return	Oct. 2003
Duration	TBD

Expedition Seven Commander Yuri I. Malenchenko (left), and NASA ISS Science Officer and Flight Engineer Edward T. Lu pose for their crew portrait while in training at the Gagarin Cosmonaut Training Center in Star City, Russia for their scheduled launch in a Soyuz TMA-2 spacecraft later this year. Malenchenko represents Rosaviakosmos, the Russian Aviation and Space Agency.

Expedition Six, the crew that Expedition Seven is replacing, will be leaving the station on a Soyuz TMA-1 spacecraft and landing in Kazakhstan. Below, from left to right are, Commander Ken Bowersox, Flight Engineer and Russian Cosmonaut Nikolai Budarin and NASA ISS Science Officer and Flight Engineer Don Pettit.