

Expedition 9

MISSION OVERVIEW



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

That is NASA's vision.

Gennady Padalka,
Expedition 9 Commander:

"I think Space Station is neither an American project nor a Russian project. This is an international space project because 16 countries are involved. Space Station is only a tiny part of our planet. But I think this is a great example how our life can be established on the ground in the ideal. If speaking about contribution, I think this is a great example of the peaceful cooperation. I think this is a most valuable contribution. And we are happy that, at last, our countries, our nations, our space agencies, and people themselves have matured in their ability to work together. I think this is the most important contribution in this project."

Mike Fincke,
*Expedition 9 Flight Engineer and NASA
ISS Science Officer:*

"To fly in space, to make a space program, is something that nations undertake. It's not just for the glory and nationalism, but it's also for all of humanity. And that's why we're working on the International Space Station. It shows what human beings can do when we work together constructively and not destructively. It's a symbol for what the 21st century can be compared to what we experienced as a society as a whole in the 20th century. And to be part of that, and to be at the leading edge, at the point of the spear, and fly aboard the Space Station, in a very international sense ... it's a big honor, and it's a big responsibility."

*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.



Related Web Sites:

<http://www.nasa.gov/>
<http://spaceflight.nasa.gov/station/>
<http://spaceflight.nasa.gov/station/science/>
<http://spaceflight.nasa.gov/station/crew/>
<http://spaceflight.nasa.gov/station/assembly/>

An International Orbiting Laboratory

Much of the research complement for Expedition 9 will be carried out with scientific research facilities and samples already on board the International Space Station. Additional experiments are being evaluated and prepared to take advantage of the limited cargo space on the Soyuz or Progress vehicles. The research agenda for the expedition remains flexible. A few perishable samples, such as urine samples and crystals, may be returned to Earth on the Soyuz. Most equipment and samples can remain on board the Station with minimal or no detrimental effects.

Experiments make use of the microgravity environment in the Destiny Laboratory and the orientation of the Station to conduct investigations in a variety of disciplines. Those fields include life sciences, physics and chemistry, and their applications in materials and manufacturing processes. The Station is also used to study the Earth – its environment, climate, geology, oceanography and more. Indeed, Earth observations are expected to occupy a relatively large share of this crew's time for scientific activity.

U.S., Russian and partner experiments and hardware could use 300 hours of crew time that will be prioritized and scheduled as time permits surrounding the spacewalks, Progress dockings, medical operations and system maintenance activities. Some Expedition 8 science activities will be continued. Many of the Expedition 9 Russian science experiments were delivered on the ISS Progress 13 resupply vehicle, which docked to the International Space Station in late January.

Many continuing experiments will use pre-

and post-flight measurements of Expedition 9 crewmembers to study changes in the human body caused by exposure to the microgravity environment. These experiments include "Promoting Sensorimotor Response to Generalizability: A Countermeasure to Mitigate Locomotor Dysfunction After Long-duration Spaceflight (Mobility)," which studies changes in posture and gait after long periods in microgravity; "Biopsy," which allows researchers to take biopsies of their calf muscles before and after their stay on board the Space Station in order to allow scientists to begin developing an in-space countermeasure exercise program aimed at keeping muscles at their peak performance during long missions in space; and "Chromosomal Aberrations in Blood Lymphocytes of Astronauts (Chromosome)," which will study effects of space radiation on humans. The expected results will provide a better knowledge of the genetic risk of astronauts in space and can help to optimize radiation shielding.

A new cadre of controllers for Expedition 9 will replace Expedition 8 colleagues in the International Space Station's Payload Operations Center – the world's primary science command post for the Space Station – at the Marshall Space Flight Center in Huntsville, Ala. Controllers work in three shifts around the clock, seven days a week in the Payload Operations Center, which links researchers around the world with their experiments and the crew on board the ISS.

For fact sheets, imagery and more on Expedition 9 experiments and payload operations, visit <http://scipoc.msfc.nasa.gov>.

The Journey Continues

The next crew to live and work aboard the International Space Station is scheduled to launch at 10:19 p.m. CDT April 18 aboard a Russian Soyuz spacecraft from the Baikonur Cosmodrome in Kazakhstan to replace the American astronaut and the Russian cosmonaut who have been living and working on the Station since October.

Russian Commander Gennady Padalka, 45, a Russian air force colonel, and Flight Engineer and NASA ISS Science Officer Mike Fincke, 37, a U.S. Air Force lieutenant colonel, will launch on the ISS Soyuz 8

spacecraft for a two-day flight to dock to the nadir port of the Station's Zarya Control Module. Docking is scheduled for midnight CDT April 21. Hatch opening is scheduled for 1:25 a.m. CDT.

Padalka and Fincke will be joined aboard the Soyuz by European Space Agency astronaut André Kuipers of the Netherlands, 45, who will spend nine days aboard the ISS performing scientific experiments under a commercial contract between ESA and the Federal Space Agency (of Russia). Kuipers will return to Earth on April 29

(CDT) with Expedition 8 Commander and NASA Science Officer Michael Foale and Flight Engineer Alexander Kaleri. They will land in Kazakhstan in the ISS Soyuz 7 capsule which is docked to the Pirs Docking Compartment.

Padalka and Fincke will assume formal control of the Station at the time of hatch closure (scheduled for 12:34 p.m. CDT April 29) before the Expedition 8 crew and Kuipers undock the Soyuz 7 craft from Pirs. Undocking is scheduled for 3:46 p.m. CDT. With Kaleri at the controls of Soyuz, he, Foale and Kuipers will land in the steppes of north Kazakhstan to wrap up more than six months in orbit. Kuipers' mission will span 11 days. Landing is scheduled for 7:09 p.m. CDT April 29.

Padalka and Fincke are expected to spend more than 180 days aboard the ISS. Padalka, a veteran cosmonaut, is making his second flight into space, having accumulated 198 days in orbit on a previous mission on the Mir space station from August 1998 to February 1999. Padalka is also a veteran of two spacewalks.

Fincke is making his first flight into space after spending several years in training in Russia while helping to develop Station crew procedures.

Kuipers is also making his first flight into space.

American and Russian planners are developing plans for two spacewalks Padalka and Fincke would conduct during their mission to continue the external outfitting of the Zvezda Service Module and to install cameras, communications gear and navigational aids to Zvezda for next year's arrival of the European Space Agency's unpiloted Automated Transfer Vehicle, a cargo ship in some ways similar to the Russian Progress vehicle.

During more than six months aloft, Padalka and Fincke will monitor the arrival of two Russian Progress resupply cargo ships filled with food, fuel, water and supplies. They will also upgrade the software in the Station computers. Progress 14 is scheduled to reach the ISS in late May, and Progress 15 is earmarked to fly to the ISS at the end of July. The Progress craft will link up to the aft port of Zvezda.

Also on the crew's agenda is work with the Station's robotic arm, Canadarm2. Robotics work will focus on observations of the Station's exterior, maintaining operator proficiency and completing the schedule of on-orbit checkout requirements that were developed to fully characterize the performance of the robotic system.



Joining Expedition 9 for the launch to the ISS is European Space Agency astronaut André Kuipers (center). Kuipers will have an 11 day mission on his first spaceflight.



Expedition 1

Launch.....Oct. 2000
Mission.....ISS Flight 2R
Return.....March 2001
Duration.....136 Days



Expedition 2

Launch.....March 2001
Mission.....STS-102
Return.....Aug. 2001
Duration.....149 Days



Expedition 3

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



Expedition 4

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



Expedition 5

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



Expedition 6

Launch.....Nov. 2002
Mission.....STS-113
Return.....May 2003
Duration.....160 Days



Expedition 7

Launch.....April 2003
Mission.....ISS Soyuz 6
Return.....Oct. 2003
Duration.....182 Days



Expedition 8

Launch.....Oct. 2003
Mission.....ISS Soyuz 7
Return.....April 2004
Duration.....TBD



Expedition 9

Launch.....April 2004
Mission.....ISS Soyuz 8
Return.....Oct. 2004
Duration.....TBD



Expedition 9 Flight Engineer and NASA ISS Science Officer Edward M. (Mike) Fincke (left), and Mission Commander Gennady I. Padalka pose for their crew portrait. They were at the Gagarin Cosmonaut Training Center in Star City, Russia, preparing for their scheduled launch in the ISS Soyuz 8 spacecraft in mid-April 2004. Padalka, a Russian cosmonaut, represents the Federal Space Agency.

Below are Expedition 8 crewmembers Michael Foale (left) and Alexander Kaleri. Foale, commander and NASA ISS Science Officer, and Kaleri, flight engineer, will return to Earth in the Soyuz 7 spacecraft, which is the vehicle that brought them to the Space Station.

