National Aeronautics and Space Administration

International Space Station

[MISSION SUMMARY]

EXPEDITION 36 begins May 13 and ends Sept. 11. This expedition will continue the research being conducted on the orbiting laboratory with experiments such as the Japanese experiment Aniso Tubule and the European Space Agency's SOLAR. Two U.S. spacewalks are planned by NASA's Chris Cassidy and the European Space Agency's Luca Parmitano, and three Russian spacewalks are planned for Fyodor Yurchikhin and Alexander Misurkin.

THE **CREW:**

Soyuz TMA-08M • Launch: March 28, 2013 • Landing: Sept. 11, 2013

Pavel Vinogradov (Roscosmos) - Commander
(PA-vel VIN-o-grad-ov)

Born: Magadan, Russia
Interests: Sports, aviation and cosmonautics history and astronomy
Spaceflights: Mir-24, Exp. 13, Exp. 35/36

Aleksander Misurkin (Roscosmos) – Flight Engineer
(ALEK-sander MIH-sur-kin)

Born: Yershichi, Smolensk Region, Russia
Interests: Badminton, basketball and downhill skiing
Spaceflights: Exp. 35/36 is his first mission

Chris Cassidy (NASA) – Flight Engineer

Born: Salem, Mass., but considers York, Maine, to be his hometown
Spaceflights: STS-127, Exp. 35/36

Soyuz TMA-09M • Launch: May 28, 2013 • Landing: Nov. 10, 2013

Karen L. Nyberg (NASA) – Flight Engineer

Born: Vining, Minn.
Interests: Running marathons and sewing
Spaceflights: STS-124, Exp. 36/37
Twitter: @AstroKarenN

Fyodor Yurchikhin (Roscosmos) - Flight Engineer
(fee-YOH-dur yur-CHEE-kihn)

Born: Batumi, Georgia
Interests: Collecting stamps and space logos, sports, history of cosmonautics, reading
Spaceflights: STS-112, Exp. 15, Exp. 24/25, Exp. 36/37

Luca Parmitano (ESA) - Flight Engineer
(LU-ka par-muh-TAN-oh)

Born: Paternò, Italy
Interests: Scuba diving, snowboarding, skydiving, weight training, swimming, reading, and music
Spaceflights: Exp. 36/37 is his first mission
Twitter: @astro_luca

THE **SCIENCE:**

What's the crew working on?

Expedition 36 will continue to take advantage of the space station's unique microgravity environment and expand the scope of research. The crew will perform experiments that cover technology development, physical sciences, human research, biology and biotechnology and Earth observations. The crew also will engage in educational activities.

DOD SPHERES-RINGS (NASA)

The Department of Defense Synchronized Position, Hold, Engage and Reorient Experimental Satellites-Resonant Inductive Near-field Generation System (DOD SPHERES-RINGS) investigation uses the SPHERES facility and is designed to demonstrate and test, in a complex environment, enhanced technologies and techniques related to micro electromagnetic formation flight and wireless inductive power transfer. By advancing the knowledge base of inter-satellite attitude control and wireless power transfer, future systems can expect enhanced attitude control performance between separate satellites and potentially the ability to efficiently transfer power efficiently at a distance, possibly alleviating the need for alternate or expendable (i.e., batteries) power sources.

Italian Combustion Experiment for Green Air (ESA)

The Italian Combustion Experiment for Green Air (ICE-GA) is the study of the evaporation and combustion regimes of renewable liquid fuels. Single droplet imaging is used to perform the study. The experiments are carried out on two selected fuels by varying the pressure and the oxygen content. The fuels are second- and third-generation biofuels or fundamental biofuel surrogates.

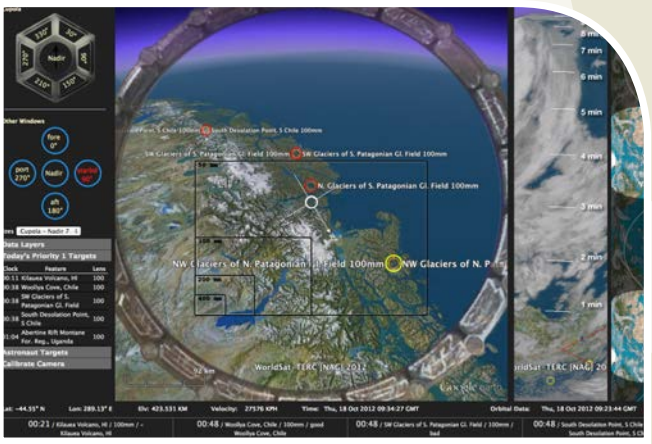
Prospective Observational Study of Ocular Health in ISS Crews (NASA)

The Observation Study of Ocular Health in International Space Station Crews (Ocular) aims to gather physiological data to characterize the risk of microgravity-induced visual impairment and intracranial pressure on crew members in orbit for six months. The purpose of this study is to collect evidence to characterize the risk and define the visual and central nervous system changes observed during a six-month exposure to microgravity, including post-flight time. The information obtained may be relevant for patients suffering from eye diseases such as glaucoma and diseases of the brain like hydrocephalus and idiopathic intracranial hypertension.

NASA astronaut Suni Williams performs Panoptic eye imaging with the help of Japan Aerospace Exploration Agency (JAXA) astronaut Akihiko Hoshide. (NASA)

Windows on Earth (NASA)

Windows on Earth is a suite of software tools to help students, scientists and astronauts explore Earth from space. It provides an augmented-reality system to manage Earth observation targets, support in-orbit photography and help scientists and the public explore the wealth of images available. The Earth visualization engine creates views of Earth as seen from orbit with realistic features, colors, topography, day-to-night transitions and targets for Earth observation and photography.



Windows on Earth user interface design, with (left to right) user controls, main window, ten-minute projection and two-orbit projection. (TERC)

THE MISSION **PATCH:**

The dynamic design of the Expedition 36 patch portrays the International Space Station's iconic solar arrays. The slanted angles denote a kinetic energy leading from Earth in the lower right to the upper left tip of the triangular shape of the patch, representing the infinite scientific research, education and long-duration spaceflight capabilities the orbiting lab provides with each mission, as well as our goal for future exploration beyond the space station. The numbers "3" and "6" harmoniously intertwine to form expedition number 36 and its gray coloration signifies the unity and neutrality among all of the international partners of the station. The blue and gold color scheme of the patch represents the subtle way the central gold orbit wraps around the number "36" to form a trident at its lower right tip. The trident also symbolizes the sea, air, and land all of which make up the Earth from where the trident originates in the design.

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