



International Space Station

[MISSION SUMMARY]

EXPEDITION 56 began in June 2018 and ends in October 2018. This expedition includes investigations focused on navigation, microbiology, physics, and a variety of other sciences. Three spacewalks are planned during Expedition 56.

THE CREW:

Soyuz MS-08 Launch: March 21, 2018 • Landing: October 2018

Soyuz MS-09 Launch: June 6, 2018 • Landing: December 2018



A.J. (Drew) Feustel (NASA) – Commander

Born: Lake Orion, Michigan
Interests: auto restoration, automotive and motorcycle racing, guitar, water and snow skiing
Spaceflights: STS-125, STS-134
Bio: <https://go.nasa.gov/2BRK1xn>
Twitter: @Astro_Feustel



Serena M. Auñón-Chancellor (NASA) – Flight Engineer

Born: Indianapolis, Indiana
Interests: volunteering as a doctor in a free clinic, watching baseball, practicing martial arts
Spaceflights: First flight
Bio: <https://go.nasa.gov/2LJJKd6>
Twitter: @AstroSerena



Ricky Arnold (NASA) – Flight Engineer

Born: Cheverly, Maryland
Interests: running, fishing, reading, kayaking, bicycling, guitar
Spaceflights: STS-119
Bio: <https://go.nasa.gov/2BUf7FJ>
Twitter: @Astro_Ricky



Alexander Gerst (ESA) – Flight Engineer

Born: Künzelsau, Germany
Interests: fencing, swimming, running, skydiving, snowboarding, hiking, mountaineering, climbing, and scuba diving
Spaceflights: Exp. 40/41
Bio: <https://go.nasa.gov/1oMphcb>
Twitter: @Astro_Alex



Oleg Artemyev (Roscosmos) – Flight Engineer

Born: Riga, Latvia
Spaceflights: Exps. 39/40
Bio: <https://go.nasa.gov/2CtLpsm>
Twitter: @OlegMKS



Sergei Prokopyev (Roscosmos) – Flight Engineer

Born: Sverdlovsk, Russia
Spaceflights: First flight
Bio: <https://go.nasa.gov/2LKHGfW>

THE SCIENCE:

What are some of the investigations the crew is operating?

During Expedition 56, researchers will study the behavior of atoms in extreme conditions, identify microbial growth aboard the space station, conduct tests to expand navigation capabilities and prepare for future travel far from Earth, and carry out other science ranging from physics to biological studies.

■ Testing Navigation Tools Aboard the Space Station

Sextant Navigation tests use of a hand-held sextant for emergency navigation on missions in deep space as humans begin to travel farther from Earth. The ability to sight angles between celestial objects offers crews another option to find their way home if communications and main computers are compromised.

■ Identifying Microbes Aboard the Space Station

Biomolecule Extraction and Sequencing Technology (BEST) advances the use of sequencing processes to identify microbes aboard the space station that current methods cannot detect and to assess mutations in the microbial genome that may be due to spaceflight. The investigation sequences microbes directly from a sample with minimal preparation, rather than with the traditional technique that requires growing a culture from the sample. Insight from BEST could help protect humans during future space exploration and provide new ways to monitor the presence of microbes in remote locations on Earth.

■ Studying Ultra-Cold Atoms

Cold Atom Lab (CAL) could help answer some big questions in modern physics. This new facility creates a temperature ten billion times colder than the vacuum of space, then uses lasers and magnetic forces to slow down atoms until they are almost motionless. CAL makes it possible to observe these ultra-cold atoms for much longer in the microgravity environment on the space station than would be possible on the ground. Results of this research could potentially lead to a number of improved technologies, including sensors, quantum computers and atomic clocks used in spacecraft navigation.

THE MISSION PATCH:

The Expedition 56 astronaut crew will continue the international collaborative work that has been evolving on the International Space Station during the past 17 years. The expedition comes at a time when private corporations and the governments around the world are rapidly developing crew capabilities for human space exploration. Together, with the experience and continued research on the orbiting laboratory, humans will soon establish a new presence in space beyond low-Earth orbit that will enable us to travel farther into space than ever before.

The Expedition 56 patch portrays a dove carrying an olive branch on its beak. The patch includes images of the Soyuz launch vehicle for the crew and the space station. The Expedition 56 astronauts' names are displayed on the dove's wings and along the limb of Earth at the base of the patch.

The dove's tail is firmly planted on Earth to represent the strong link between our home planet and the humans who are sent into the cosmos. The patch illustrates our hope for peace and love in the world, and the innate human desire to spread our wings and explore into the future, building on the wisdom of the past, for the betterment of humanity. The patch was designed by astronaut Drew Feustel's son.



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