



International Space Station

[MISSION SUMMARY]

EXPEDITION 57 began in October 2018 and ended in December 2018. This expedition hosted a variety of investigations and technology demonstrations spanning the physical, biological and chemical sciences to leverage the unique microgravity test environment available aboard the International Space Station. One spacewalk occurred during Expedition 57.

THE CREW:

Soyuz MS-09 Launch: June 6, 2018 • Landing: December 20, 2018



Alexander Gerst (ESA) – Commander

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



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

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



Sergei Prokopyev (Roscosmos) – Flight Engineer

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

Soyuz MS-11 Launch: December 3, 2018 • Landing: June 2019



Anne McClain (NASA) – Flight Engineer

Born: Spokane, Washington
Interests: weightlifting, rugby, golf, biking, crossfit and running
Spaceflights: First flight
Bio: <https://go.nasa.gov/2s8ryrB>
Twitter: @AstroAnnimal



David Saint-Jacques (CSA) – Flight Engineer

Born: Saint-Lambert, Quebec
Interests: mountaineering, cycling, skiing and sailing
Spaceflights: First flight
Bio: <https://go.nasa.gov/2VbcqAu>
Twitter: @Astro_DavidS



Oleg Kononenko (Roscosmos) – Flight Engineer

Born: Türkmenabat, Turkmenistan
Spaceflights: Exp. 17, 30/31, 44/45
Bio: <https://go.nasa.gov/2QviZ3S>

THE SCIENCE:

What are some of the investigations the crew operated?

Expedition 57 investigations looked at everything from observations of Earth's forests to helping us understand how carbon processes affect climate change to studying endothelial cells in microgravity to improve testing methods for cancer treatment on Earth.

■ GEDI

The **Global Ecosystem Dynamics Investigation (GEDI)** provides high-quality laser ranging observations of the Earth's forests and topography required to advance the understanding of important carbon and water cycling processes, biodiversity and habitat. GEDI is mounted on the Japanese Experiment Module's Exposed Facility (JEM-EF) and provides the first high-resolution observations of forest vertical structure at a global scale. These observations quantify the aboveground carbon stored in vegetation and changes that result from vegetation disturbance and recovery, the potential for forests to sequester carbon in the future, and habitat structure and its influence on habitat quality and biodiversity.

■ Angiex Cancer Therapy

The investigation Endothelial Cells in Microgravity as a Model System for Evaluation of Cancer Therapy Toxicity (**Angiex Cancer Therapy**) aims to culture endothelial cells (ECs) in a space environment to improve testing methods for cancer treatment on Earth. Angiex has developed

a treatment that targets both tumor cells and vasculature, but needs a better model on which to test it. The study may facilitate a cost-effective method that does not require animal testing and which may help develop safer and more effective vascular-targeted drugs.

■ Cimon

The pilot study with the **Crew Interactive MObile companioN (Cimon)** is a technology demonstration project, and an observational study, that aims to obtain the first insights into the effects on crew support by an artificial intelligence (AI), in terms of efficiency and acceptance during long-term missions in space. Spaceflight missions put the crew under a substantial amount of stress and workload, and an AI may help provide operational support to crew members.

THE MISSION PATCH:

Humans are explorers. We live on a cosmic island. Setting sails towards new worlds has always been our nature, and it is key to our survival. As soon as our ancestors learned how to build ships, they not only used them to sail up and down the coasts, but ultimately they set out to travel beyond the horizon, to discover new continents. The time of space exploration has just begun, a mere blink of an eye in the eon-long history of human exploration. And yet we already have successfully built great ships to sail the black heavenly seas, and we have dared adventurous journeys into the unknown.

The Expedition 57 patch is a tribute to human exploration. It depicts an explorer's ship leaving for the unknown as our early ancestors did, and is shaped like an arrow, heading out to new cosmic horizons. It highlights the purpose of the International Space Station as a world class science laboratory for the benefit of mankind and international cooperation, as well as humanity's flagship in space, preparing us for the amazing voyages ahead.

The Expedition 57 patch is dedicated to all those thousands of humans who make this journey possible through the contribution of their passion, hard work and courage to one of the most fascinating projects in human history.



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