



International Space Station

[MISSION SUMMARY]

EXPEDITION 62 began in February 2020 and ends in April 2020. This expedition will include research investigations focused on biology, Earth science, human research, physical sciences and technology development, providing the foundation for continuing human spaceflight beyond low-Earth orbit to the Moon and Mars.

THE CREW:



Oleg Skripochka (Roscosmos) – Commander

Born: Nevinnomyssk, Russia
Spaceflights: Exp. 25/26, Exp. 47/48, Exp. 61
Bio: <https://go.nasa.gov/2UHhCCR>



Chris Cassidy (NASA) – Flight Engineer

Born: Salem, Massachusetts
Spaceflights: STS-127, Exp. 35/36
Bio: <https://go.nasa.gov/2NsLd0s>
Instagram: @Astro_SEAL



Andrew Morgan (NASA) – Flight Engineer

Born: Morgantown, West Virginia
Interests: Distance running, swimming, weightlifting and reading space and military history
Spaceflights: Exp. 60/61
Bio: <https://go.nasa.gov/2Su7ESF>
Twitter: @AstroDrewMorgan



Anatoly Ivanishin (Roscosmos) – Flight Engineer

Born: Irkutsk, Russia
Spaceflights: Exp. 29/30, Exp. 48/49
Bio: <https://go.nasa.gov/2uy7DqK>



Jessica Meir (NASA) – Flight Engineer

Born: Caribou, Maine
Interests: Skiing, hiking, running cycling, soccer and scuba diving
Spaceflights: Exp. 61
Bio: <https://go.nasa.gov/20IErqq>
Twitter: @Astro_Jessica



Ivan Vagner (Roscosmos) – Flight Engineer

Born: Severoonezhsk, Russia
Spaceflights: First flight

THE SCIENCE:

What are some investigations the crew is operating?

During Expedition 62, researchers will conduct microgravity cell biology and physical sciences research, examine fire growth in different materials and environmental conditions, study and identify crew and vehicle-threatening microscopic particles found on the space station and evaluate the water droplet formation, water flow and perceived pressure of shower heads in use on Earth.

■ Mobile SpaceLab

The Mobile SpaceLab is a tissue and cell culturing facility that launches and returns on space station resupply vehicles to offer investigators a quick-turnaround, high-throughput platform to perform sophisticated microgravity biology experiments. The Mobile SpaceLab can perform a biology experiment autonomously for up to a month on the space station without the need for crew operations.

■ Spacecraft Fire Experiment-IV

Understanding how fires spread in space is vital for developing flame-resistant materials and fire prevention measures, but it is difficult to perform flame growth and prevention experiments aboard a spacecraft. The Spacecraft Fire Experiment-IV (Saffire-IV) investigation uses the Cygnus resupply vehicle after it leaves the space station to examine fire growth in different materials and environmental conditions. It also demonstrates fire detection, monitoring and post-fire cleanup capabilities.

■ Mochii

Mochii is a miniature scanning electron microscope that helps in rapid identification of particles found on the space station, many invisible to the naked eye. Such particles can cause vehicle and equipment malfunctions and threaten crew health, but currently, samples must be returned to Earth for analysis, leaving crew and vehicle at risk. Mochii also provides a powerful new analysis platform to support novel microgravity science and engineering.

■ Bartolomeo

The European external platform Bartolomeo is an enhancement of the European Columbus Module, aiming to attract new European users to the space station, including a community of start-ups and space entrepreneurs. As companies piggyback off existing space station resources to reduce cost, new commercial opportunities will arise. Designed to meet user requirements from the commercial and institutional sector, Bartolomeo will provide affordable, quick and easy access to space for Earth observation and telecommunications, exobiology and space weather research.

■ Droplet Formation Study

This project seeks to evaluate the water droplet formation, water flow, and, indirectly, the perceived pressure of Delta Faucet's current shower head technology versus the industry-standard use of jet nozzles. This study will examine droplet size and speed, and how they affect the feeling of increased pressure for the end user. The study will evaluate how best to control the output of water droplets to create a better performing shower device that provides an improved experience for the end user while also conserving water and energy. By conducting research in microgravity, Delta Faucet seeks to gain a better understanding of the upper limit of what can be achieved and determine if and how the technology can be improved.

THE MISSION PATCH:

The Expedition 62 patch embodies two main themes: first, the importance of the global partnership on which the International Space Station was founded, and second, the paradigm shifting perspective provided by seeing our planet Earth from above with human eyes. Based on a vintage mosaic found near the headquarters of the Gagarin Cosmonaut Training Center, the two space explorers flying in formation represent friendship between space agencies and the people that work in them. The shining star in the hand is a symbol of unity under a common quest for discovery, as this partnership continues to burn bright into the future. Generated by the flying astronauts, the shock wave signifies the powerful impact of human space exploration and the scientific research conducted on the space station, strengthened when we work as a team, side by side with all of our international partners. The backdrop of the large sun behind our planet Earth reminds us that we are but a very small component of our solar system and our universe. The sun is also responsible for fueling life on Earth, sustaining the biosphere (symbolized by the leaf) surrounded by the precious, fragile atmosphere (represented by the clouds). This imagery reminds us of our duty to protect our home planet, to preserve our environment and to carry principles of responsible environmental stewardship with us as we explore the universe. This birch leaf combines the principal elements, embodying nature, science and the global alliance, as these trees are indigenous to regions that crewmembers from all sides call home.



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