National Aeronautics and Space Administration

NASA

20 Years on the International Space Station

INTERNATIONAL SPACE STATION

EXPEDITION 62

Soyuz MS-15 Launch: September 25, 2019*
Landing: April, 2020

JESSICA MEIR (NASA)
Flight Engineer

Born: Caribou, Maine
Interests: Skiing, hiking, running, cycling, soccer, and SCUBA diving
Spaceflights: First flight
Bio: https://go.nasa.gov/2OlErqd
Twitter: @Astro_Jessica

DREW MORGAN (NASA)
Flight Engineer

Born: New Castle, Pennsylvania
Interests: Running, swimming, reading, and family travel
Spaceflights: First flight
Bio: https://go.nasa.gov/2Su7ESF
Twitter: @AstroDrewMorgan

OLEG SKRIPOCHKA (Roscosmos)
Flight Engineer

Born: Nevinnomyssk, Russia
Spaceflights: Expedition 25/26, 47/48
Bio: https://go.nasa.gov/2MWfDJU

*Drew Morgan launched to Space Station aboard Soyuz MS-13 on July 20, 2019.

EXPEDITION 62

Expedition 62 began in February 2020 and ends in April 2020. This expedition will include research investigations and technology demonstrations not possible on Earth to advance scientific knowledge of Earth, space, physical and biological sciences. Stay up to date with the mission at the following web page:
https://www.nasa.gov/mission_pages/station/expeditions/expedition62/index.html

SCIENCE ON THE ISS

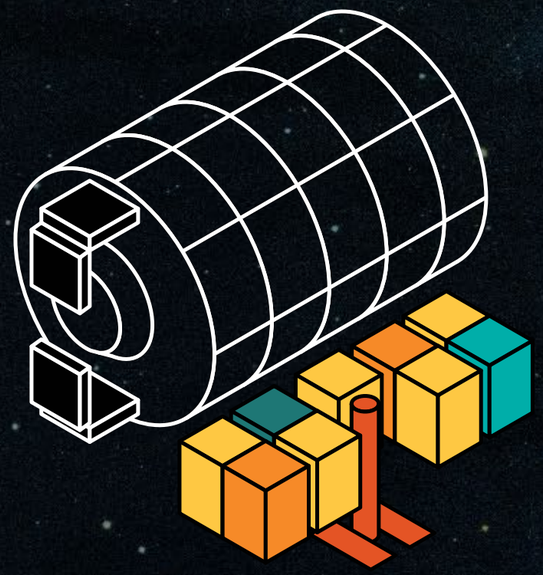
During Expedition 62, astronauts aboard the space station will include research investigations focused on biology, Earth science, human research, physical sciences and technology development, providing the foundation for continuing human spaceflight beyond low-Earth orbit to the Moon and Mars.
Follow the latest ISS Research and Technology news at: **www.nasa.gov/stationresearchnews**

MVP Cell-03

This investigation examines whether microgravity increases the production of heart cells from human-induced pluripotent stem cells (hiPSCs). Scientists induce these cells to generate heart precursor cells and culture those cells on the space station and on Earth for analysis and comparison. HiPSCs are adult cells genetically reprogrammed back into an embryonic-like state where they can become several different types of cells. Scientists can use them to provide various types of human cells for research or therapeutic purposes. Heart cells or cardiomyocytes (CMs) could help treat cardiac abnormalities caused by spaceflight or to replenish cells damaged or lost due to cardiac disease on Earth.

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.



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.

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.

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.

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 who 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.

INSPIRE - ENGAGE - EDUCATE - EMPLOY
The Next Generation of Explorers

NASA Education & Web Resources for

Expedition 62

ISS National Lab Space Station Research Explorer At any given time aboard the space station, a large array of different experiments are underway within a wide range of disciplines. Here, you can search the database of experiments to learn more about each experiment's objectives, descriptions, results, and imagery, as well as find links to additional information beyond this database.

https://www.spacestationexplorers.org/educational-programs/

STEMonstrations STEMonstrations fit the need for students and educators to have high quality, informative videos that cover the wide range of topics outlined in the Next Generation Science Standards (NGSS). Astronauts film videos instructing students in biology, chemistry, physics, Earth science, and space science. The videos align to a "Try This" one- to two-page lesson plan where students and educators can make connections to topics they are working on in the classroom.

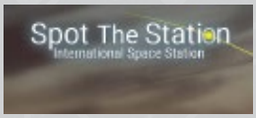
https://www.nasa.gov/stemonstrations

Citizen Science Projects For years, solar system and exploration have brought excitement and inspiration to people of all ages. This is especially true now, with new opportunities for students and citizen scientists to directly participate in expanding our knowledge of the solar system. Amateur astronomers and students with wide ranges of equipment and expertise are making valuable contributions toour growing understanding of our nearest celestial neighbor. Learn how you can become part of the adventure!

https://science.nasa.gov/citizenscientists

Sally Ride EarthKAM Sally Ride EarthKAM (Earth Knowledge Acquired by Middle school students) is a NASA educational outreach program that enables students, teachers, and the public to learn about Earth from the unique perspective of space. Students can "program" the camera to take pictures of the Earth from space and study the images they receive.

https://www.earthkam.org/



Spot the Station Watch the International Space Station pass overhead from several thousand worldwide locations. It is the third brightest object in the sky and easy to spot if you know when to look up. Visible to the naked eye, it looks like a fast-moving plane only much higher and traveling thousands of miles an hour faster!

https://spotthestation.nasa.gov/

In-flight Education Downlinks Wouldn't it be great if students could talk with an astronaut aboard the International Space Station about what it is like to live and work in space? Well, they can! Educational organizations located in the United States can host an in-flight education downlink with space station crew members. Students pose questions and watch as astronauts answer the questions and demonstrate science, technology, engineering and mathematics concepts in ways that are impossible on Earth.

https://www.nasa.gov/audience/foreducators/stem-on-station/downlinks.html

Expeditionary Skills for Life Expeditions are journeys made by people who share a definite purpose and specific experiences. To make their expeditions successful, NASA works with astronaut crews on skills that prepare them to live and work together during space missions. Some of these same skills are useful in everyday life here on Earth. This series of activities is designed to take you through various educational expeditions that will help you learn and practice skills that you can apply in almost every aspect of life.

https://www.nasa.gov/education/4H

Space Station Research and Technology To learn about all the different types of Science Research and Technology Demonstrations taking place on the International Space Station, or read about the results from some of those investigations, or maybe just watch cool video of the astronauts performing science visit:

https://www.nasa.gov/iss-science

Research & Technology

https://www.nasa.gov/stemonstation