



CHALLENGER LEARNING CENTER

Issue 2 Content

What's happening in space?

Let's take a look at what is happening in space this month!

Astronaut Spotlight

Suni Williams: The woman running the International Space Station

Virtual Missions

Experience space travel in your own classroom! Sign up to be entered to win a free virtual mission!

How do we schedule a visit?

Visit this section to learn more about scheduling a mission!

Science Snapshot

Visit this section for quick and engaging science content focused on space!



Challenger Learning Center Around the Town

As the leaves begin to turn and fall approaches, the Challenger Learning Center of Lake Erie West has been busy engaging with the community, bringing the wonders of science and exploration to life!

AREN Kite Flying Training: Last month, our team took to the skies during the AREN (AEROKATS and ROVER Education Network) Kite Flying Training. This hands-on experience allowed us to dive into atmospheric science, using kites equipped with sensors to gather environmental data. By participating in this unique training, we're bringing exciting new knowledge and skills back to our center, helping inspire future scientists and engineers.

Bringing Science to the Girl Scouts of Western Ohio In partnership with the Girl Scouts of Western Ohio: We were thrilled to attend their Believe in Girls expo. Our table was a hub of excitement as we brought interactive science experiments and demonstrations, sparking curiosity and igniting the passion for learning in the next generation of innovators.

Upcoming: Women in STEM Event at Bowling Green State University: Looking ahead, we're excited to announce our participation in the Women in STEM event at Bowling Green State University this October. This event will celebrate and support women pursuing STEM careers, offering hands-on experiences and mentorship opportunities. We are proud to be part of this important initiative to encourage young women to explore and excel in STEM fields.

Stay tuned for more updates on our missions to educate, engage, and inspire!

Heather Townley
Coordinator of Gifted Innovations
and STEM Learning Experiences

WHAT'S HAPPENING IN SPACE?

What would it be like to go to Mars?

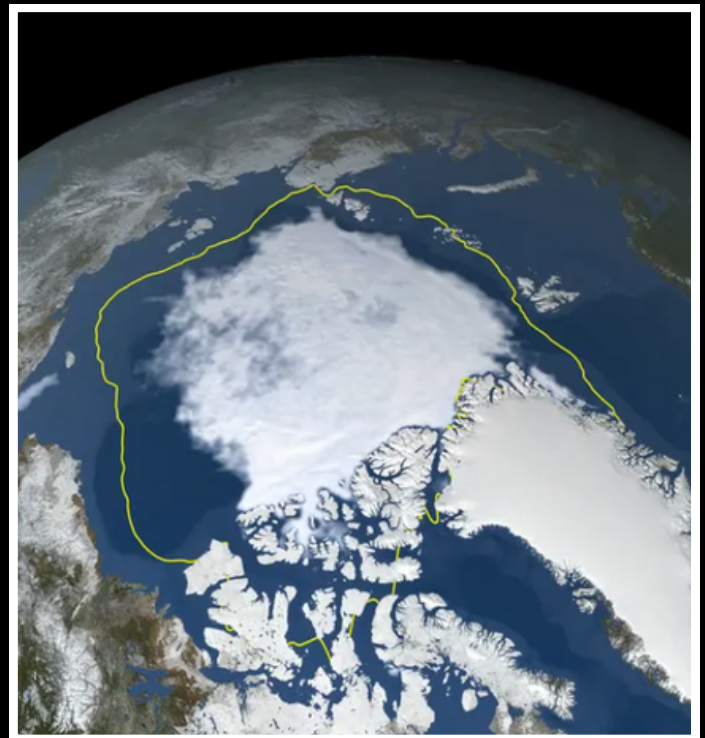


NASA's HERA (Human Exploration Research Analog) crew members enjoy their first glimpse of the outside after a 45-day stay inside the analog environment. From left to right: Sergii Iakymov, Sarah Elizabeth McCandless, Erin Anderson, and Brandon Kent.
NASA/Bill Stafford

NASA's Human Exploration Research Analog (HERA) mission recently concluded with a crew returning from a simulated 45-day trip to Mars. The mission aimed to study the psychological and physiological effects of isolation during long-duration space travel. Inside the habitat, participants faced communication delays, performed tasks replicating Mars exploration, and underwent various experiments. Their experience is part of NASA's ongoing efforts to prepare astronauts for future deep-space missions by understanding human factors in extreme environments. You can read more details [here](#).

Earth, NASA's Most Popular Planet

What planet do you think NASA has explored the most? If you said Earth, you were right! In September, NASA discovered some not so great news when studying the Arctic Sea Ice. This reduction in sea ice is primarily driven by rising global temperatures, which have been exacerbating ice melt over the years. Meanwhile, Antarctic sea ice, which used to exhibit more variability, has also been showing an alarming downward trend. The continuing loss of ice in both regions has major implications for global climate patterns, ecosystems, and sea level rise. For more details, you can check out the full article on NASA's website [here](#).



This image, taken from a data visualization, shows Arctic sea ice minimum extent on September 11, 2024.

The yellow boundary shows the minimum extent averaged over the 30-year period from 1981 to 2010.

Download high-resolution video and images from NASA's Scientific Visualization Studio:
svs.gsfc.nasa.gov/5382

NASA's Scientific Visualization Studio/Trent L. Schindler

SUNITA "SUNI" WILLIAMS



Roscosmos cosmonaut Oleg Kononenko and NASA astronaut Suni Williams shake hands during a change of command ceremony aboard the International Space Station, Sep. 22, 2024. (Image credit: NASA)

NASA astronaut Sunita "Sunni" Williams has taken command of the International Space Station (ISS) for Expedition 71 after originally being scheduled for an eight-day mission aboard Boeing's Starliner spacecraft. Due to technical issues with Starliner, Williams' mission was extended to eight months. During a change of command ceremony, Russian cosmonaut Oleg Kononenko passed leadership to Williams. She is now set to return to Earth in 2025 aboard a SpaceX Crew Dragon capsule. This marks Williams' second time commanding the ISS.

For more, visit [Space.com](https://www.space.com).



Did you know?

- In 2007, astronaut Sunita Williams became the first person to run a marathon in space after she registered for the Boston Marathon.
- Suni Williams holds the record for most space walks by a woman, with a total of seven space walks. That is over 50 hours outside of the ISS in space!
- Sunita Williams was the second U.S. astronaut of Indian heritage to go into space.

VIRTUAL MISSIONS

Travel to space without leaving your classroom!

Investigate our presence on the surface of Mars and the Moon.

Virtual Missions are space-themed virtual experiences delivered to students in real-time by Challenger Learning Center Flight Directors using video conference technology—perfect for in-person, remote, and hybrid classrooms. Students practice critical 21st century skills including teamwork, collaboration, and problem-solving, while establishing a presence on Mars and the Moon



What to Expect

- Approximate program time: 1 hour
- Delivered in real-time by Challenger Learning Center Flight Directors
- Closed captioning available
- Next Generation Science Standards (NGSS) aligned
- Common Core State Standards (CCSS) aligned

Learn more about Destination Mars [HERE!](#)

Learn more about Destination Moon

[HERE!](#)

[CLICK HERE](#) for a chance to win a FREE virtual mission!

SCHEDULE A MISSION!



Begin your visit with mission orientation where astronauts receive their mission details and job assignments.

Join your fellow astronauts as the mission begins on the Spacecraft where research must be completed in order to meet the mission goals.



Lead your crew through a successful mission from Mission Control. Keep the crew safe and you never know, soon you might be in the Spacecraft!

[Schedule a mission or request information!](#)

SCIENCE SNAPSHOT:

K-4

Looking for an engaging lesson on physical vs chemical change?

Check out this NASA eClip! As a result of watching the Spotlite video, learning the vocabulary collaboratively, and discussing the differences between physical and chemical change, students will be able to explain the difference between a physical change and a chemical change.



Image Credit: www.nasa.gov/multimedia/imagegallery/

5-8

Evidence of Chemical Change

Learn about the characteristics of chemical changes!
Explore and develop an understanding of the chemical process of rusting and the factors that affect rusting. Using the interactive Frayer Models, learn key vocabulary that will help you explain why Mars is red.



Image Credit: NASA/JPL-Caltech

9-12

Stars

Objective: In this activity, students will explain how a star's color indicates its surface temperature as a result of watching the NASA Spotlite video, learning the vocabulary collaboratively, and discussing a star's size and the position in its lifespan.

