



**NASA EXPEDITION 72**  
IN-FLIGHT EDUCATION DOWNLINK  
January 14, 2025

## **Live! From The International Space Station** **Educator's Guide**

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**science**  
**FRIDAY**

## Welcome To Science Friday Live! From The International Space Station

Have you ever wanted to ask an astronaut about what it’s really like to live and work in space? Well, now’s your chance. Science Friday is partnering with NASA for a very special In-Flight Downlink on January 14, 2025 where we’ll connect live with the astronauts [Don Pettit](#) and [Butch Wilmore](#) on the International Space Station.

The [NASA In-Flight Education Downlink](#) program connects K-12 students with astronauts aboard the ISS for live question-and-answer sessions about living and working in space. Learners, working with Science Friday educators and families, will create questions for the [Expedition 72](#) crew and record short videos asking their questions. During the live event, NASA will share these videos, and astronauts will answer them. On average, the crew answers 14-17 questions per 20-minute Downlink event.

Anyone can watch the event, and we encourage you to plan watch parties and celebrate this exciting opportunity! This guide will provide the information you need to craft questions for the astronauts as well as educational activities and projects you can do with your learners. We also have a variety of audio and video content with astronauts, space researchers, and scientists to inspire learners and spark fun conversations.

Need help? Need disability or language accommodations? Send us an email at [educate@sciencefriday.com](mailto:educate@sciencefriday.com).

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## Planning For The Live Event

### How To Watch On January 14, 2025

Tune in on January 14, 2025 between 10:30 am and 12:30 pm ET (NASA will give us the official start time for the downlink on January 7, 2025).

- [NASA Television](https://www.nasa.gov/nasatv): <https://www.nasa.gov/nasatv>  
Access NASA TV through your local provider, as well as through third-party distribution platforms.
- [NASA App](https://www.nasa.gov/nasa-app): <https://www.nasa.gov/nasa-app>
- [NASA Website](https://www.nasa.gov/nasatv): <https://www.nasa.gov/nasatv>
- [NASA+](https://plus.nasa.gov): <https://plus.nasa.gov>

### Plan A Watch Party

- **Invitations:** Do you have special people to invite to your event? Don't forget to send out invitations! All students, teachers, parents, administrators, community leaders, and media from the participating school districts are invited to attend.
- **Decorations:** Anything space-themed! Make star, planet, or spacecraft garland or table centerpieces. Create a photo area with space-themed props.
- **Food:** Serve space-themed food like astronaut ice cream, Moon Pies, Tang, or Bomb Pops.

### Down To Earth Community Lab

Join your fellow space explorers to ask questions, share out-of-this-world ideas, and forge new friendships in a family-friendly online environment. Whether you're a caregiver, facilitator, educator, or learner, this is the perfect launchpad for coming together as a stellar community. We encourage you to join the [Down To Earth Community Lab](#) today, where regular updates on the In-Flight Downlink and related program information will be shared.

### RSVP To Get Updates

Because of the nature of this event—we are trying to set up a Zoom in space after all—the date and time of the event are subject to change. [RSVP for Live: From the International Space Station](#) to make sure you stay updated, get important reminders, and don't miss any exciting opportunities!

## Designing Downlink Questions

This 60-minute activity was adapted from a [Rochester Museum and Science Center](#) class activity. It is designed to help learners formulate questions for the In-Flight Education Downlink program with the International Space Station.

Downlinks are quick! Our question-and-answer session is 20 minutes long - we'll give NASA a list of 18-20 questions, but the astronauts might not have time to get to all of them. How can we make the most of our questions? What would you ask if you were to host a downlink? Here, you'll design your own downlink questions, starting by setting up some guidelines for "good" questions. We've added a couple of suggestions to get you started. Come up with some more rules together (or feel free to move on with these two basic guidelines).

RULE	REASONING
Questions must be in compliance with NASA's <a href="#">no-go question list</a>	Questions have to be approved by NASA's Public Affairs Office. If we submit questions from the no-go list, NASA simply won't answer them!
Questions must be open-ended.	We recommend keeping things open-ended to get the best explanations - in past downlinks, astronauts have even done science demonstrations to explain their answers!
<i>What rule would you add?</i>	

- Next, take a look at the sample questions below. Do they fit the rubric? Why or why not? How can you change them into downlink-worthy inquiries? Revise and share out your edits! (See the bottom of the next page for suggestions.)
  - Does water boil in space?
  - Why does everything float on the ISS?
  - Do you ever get bored on the space station?
- Research the [International Space Station](#) (including [Expedition 72](#) and its crew) to determine primary areas of inquiry. Consider what you already know and what you want to learn more about. Generate a list

of first-draft questions based on your research. Evaluate questions against the rubric above and revise as needed. Write each question on a sticky note with your name, and start organizing and forming categories or connections. What are your favorite questions?

3. Once you have finished brainstorming, join your family, group, or class to review and prioritize the questions.
  - a. How did the research and brainstorming process go?
  - b. What categories did you come up with earlier?
  - c. Did others in the group have the same question?
4. Put the questions on a whiteboard or large piece of chart or butcher paper. Take turns sharing questions. Add post-its to your group mind map, forming categories to help group together common questions and themes. Label post-its with students' names. Group together any duplicates!
5. Finally, evaluate the group's questions. Choose group favorites and eliminate others (making sure to discuss the reasoning for each decision). Edit the list until you have your final group of questions.
6. Once you have your question ready, [submit it to Science Friday!](#) We need your response by Tuesday, December 10. Are you an educator working with a group? Use our [handy Google Sheets template](#) to submit your questions. Just click "Make a copy." Then, add your learners' information and questions to the spreadsheet, and then email it to [educate@sciencefriday.com](mailto:educate@sciencefriday.com).

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What is your final question for astronauts on the International Space Station?

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Suggestions to improve the sample questions, above:

- a. Closed-ended question; consider rephrasing with "why" or "how."
- b. Use "International Space Station" or "space station."
- c. Too personal; consider asking about hobbies.

## NASA Public Affairs Office “No-Go” Questions

Per NASA’s Public Affairs Office, questions must meet the following guidelines:

- Avoid referring to the space station as ISS. Use the terms “International Space Station,” “space station,” or “station.”
- No questions about religion or politics.
- No questions about aliens.
- No questions about humanoid robots replacing astronauts or AI replacing astronauts (e.g., Robonaut, Valkyrie).
- No questions about bodily functions, including crying, in space.
- No questions that put astronauts on the spot to share personal or HIPAA-covered information.
- Do not ask an astronaut/NASA to endorse anything; this includes students showing figurines, stuffed animals, or other items that may be trademarked or copyrighted.

## Sample In-Flight Downlink Events

Curious about what an In-Flight Downlink with the International Space Station looks like and what kinds of questions students ask? Check out these videos!

- [Indiana Students](#)
- [RMSC and Dr. Martin Luther King Jr. School](#)
- [JPL/Caltech and Van Buren Elementary](#)
- [Orville Wright STEM Magnet](#)
- [Glenn Research Center](#)
- [Full playlist of NASA In-Flight Education Downlinks](#)

## Science Friday's Down To Earth Program

In October 2024, Science Friday partnered with the [International Space Station National Laboratory](#) to launch a free month-long program and ignite a curiosity for science that'll burn brighter than a rocket booster. That program was called [Down To Earth](#). These projects are a perfect complement to the Science Friday Live: Form the International Space Station event.

Calling all budding environmentalists, space enthusiasts, and Earth-bound innovators! Get ready for an out-of-this-world adventure to combat climate change in your own backyard. We're looking for the next generation of scientists and engineers to solve real-world problems and combat climate change by using cutting-edge space technology in exciting and novel ways. No space suit required!

Designed for middle-school students, [Down To Earth](#) is an anywhere, anytime program for everyone, regardless of prior knowledge of space research. With our online program, you'll get hands-on with engaging weekly design challenges while exploring exciting STEM career paths with real astronauts and space experts. Simply register for Down to Earth and you'll receive all the materials you'll need to propel your cosmic creativity into orbit!

What cutting-edge innovation from space can you harness to transform your community? The answer may be floating 250 miles above your head.

## Down To Earth: Design Challenge Missions

Written by veteran educators, each [Down to Earth](#) activity will include a brief hands-on investigation, background information about related science and technology on the ISS, and an exciting design challenge connected to real-world problems you can solve in your community. Designed for middle school-aged learners, these activities require inexpensive, easy-to-find materials, and can be completed in 45-90 minutes so they're easy to use anywhere, anytime.

### [Mission Stellar Health: Train Like An Astronaut](#), by Sandy Roberts

Get ready to train like a space explorer! Discover how astronauts stay fit in the weightlessness of space and explore cutting-edge tech on the ISS that keeps their bones, muscles, and lungs strong. You'll design innovative solutions to help your community stay healthy as the climate changes.

### [Mission Sensor Watch: Cool Your Community](#), by Tiffany Lucey

Join the mission to beat the heat! Explore how the ISS monitors the Earth's surface with high-tech sensors to track rising temperatures. With this knowledge, you'll investigate heat patterns in your neighborhood and design a cool solution to combat "heat islands."

### [Mission Rehydrate: Clean Water For A Thirsty Planet](#), by Kathy Ceceri

Dive into the world of water conservation! Learn how astronauts on the ISS recycle every drop of water and how space tech is helping to solve Earth's water challenges. You'll investigate different materials to design a filter that cleans water efficiently.

### [Mission Tech Force: Robots For A Sustainable Future](#), by Jennifer Swanson

Gear up for an engineering adventure! Explore how robots assist astronauts on the ISS with critical tasks, from docking shuttles to installing equipment. Then, design a robot to tackle climate change, clean up pollution, or build greener, more eco-friendly communities.

Plus, to make implementation as easy as can be, Down to Earth activities include additional resources for educators and parents, such as a materials list, lesson plan, slide deck, assessment tools, and extension activities.



## Down To Earth: Mission Control Live!

Each week of [Down to Earth](#) featured a special online live event: *Mission Control Live!* These fun, interactive sessions were a chance to meet real experts and learn what it's like to work in space science. All the videos are now archived on the [Science Friday YouTube channel](#) for easy access.

### [Friday, October 4 with Dr. Michael Wong](#)

Meet special guest [Dr. Michael Wong](#), an astrobiologist and planetary scientist at Carnegie Science's Earth & Planets Laboratory. He studies planetary atmospheres, habitability, biosignatures, and the emergence of life across the Universe. What do you want to know about life beyond the Earth?

### [Friday, October 11 with Astronaut Cady Coleman](#)

Meet a veteran of the International Space Station! Special Guest [Cady Coleman](#) is a retired NASA astronaut and the author of *Sharing Space: An Astronaut's Guide to Mission, Wonder, and Making Change*. Learn what it takes to be a NASA astronaut. What do you want to know about living in space?

### [Friday, October 18 with Emili Lafleche](#)

In addition to working on her PhD, astrobiologist [Emilie Lafleche](#) is also an analog astronaut. What's that? Analog astronauts simulate multi-week Lunar and Martian missions so scientists can research the effects on humans and test technology before it's launched into space. How do scientists prepare for space from Earth?

### [Friday, October 25 with Dr. Julia Badger](#)

[Dr. Julia Badger](#) headed up the team that built Robonaut—a humanoid robot that helps humans explore space—for the ISS. Now she's the Autonomy and Vehicle Systems Manager (VSM) system manager for the Gateway program at NASA-Johnson Space Center, working to put our first space station in orbit around the Moon. How can robots make life better for humans everywhere in the Universe?

Download our [Scientist Q&A graphic organizer](#) to help your learners share their thoughts.

## Book Suggestions For Students To Learn More

[Jennifer Swanson](#) is an educator, children's book author, and the creator and cohost of the [Solve It! for Kids](#) science podcast. She wrote the [Down to Earth](#) activity, "Mission Tech Force: Robots For A Sustainable Future." We asked her for book suggestions to complement our International Space Station activities. Below are her recommendations.

*Note: This list includes referral links. When you purchase products through the Bookshop.org links on this page, Science Friday earns a small commission, which helps support our educational programs.*

### Train Like an Astronaut

- [Astronaut Handbook](#) by Meghan McCarthy (Dragonfly Books, 2017), Preschool - Grade 2.
- [Chasing Space Young Readers' Edition](#) by Leland Melvin (Amistad BFYR, 2023), Grades 3-7.
- [Spacecare: A Kid's Guide to Surviving Space](#) by Jennifer Swanson (Mayo Clinic Press/Smithsonian, 2023), Grades 2-6.
- [The Astronaut's Guide to Leaving the Planet: Everything You Need to Know, from Training to Re-entry](#) by Terry Virts (Workman Publishing, 2023), Grades 5 and up.

### Cool Your Community

- [A Kid's Guide to Saving the Planet: It's Not Hopeless and We're Not Helpless](#) by Paul Douglas (Author), Chelen Ęcija (Illustrator) (Beaming Books, 2022), Grades 4-6.
- [Our World Out of Balance: Understanding Climate Change and What We Can Do](#) by Andrea Minoglio (Author) Laura Fanelli (Illustrator) (Blue Dot Kids Press, 2021), Grades 3-4.
- [Geoengineering Earth's Climate: Resetting the Thermostat](#) by Jennifer Swanson (Twenty-first Century Books, 2017), Grades 6-12.
- [Heroes of the Environment: True Stories of People Who Help Protect Our Planet](#) (NRDC) by Harriet Rohmer (Chronicle Books, 2009), Grades 4-9.

### Water for a Thirsty Planet

- [National Geographic Kids WATER!: Why every drop counts and how you can start making waves to protect it](#) by Lisa M. Gerry (NGKids, 2023), Grades 3-7.
- [When the World Runs Dry: Earth's Water in Crisis](#) by Nancy F. Castaldo (Algonquin Young Readers, 2022), Grades 4-7.

- [Clean Water \(Sally Ride Science\)](#) by Beth Geiger (Flashpoint, 2009), Grades 3-7.
- [We Are Water Protectors:](#) (Caldecott Medal Winner) by Carole Lindstrom (Author), Michaela Goade (Illustrator), Preschool and up.

### Robots for a Sustainable Future

- [Beastly Bionics: Rad Robots, Brilliant Biomimicry, and Incredible Inventions Inspired by Nature](#) by Jennifer Swanson (NGKids Books, 2020), Grades 3-7.
- [DK Eyewitness Books: Robot: Discover the Amazing World of Machines from Robots that Play Chess to Systems that Think](#) by Roger Bridgman, Grades 3-7.
- [Making Simple Robots: Easy Robotics Projects for Kids Using Everyday Stuff](#) by Kathy Ceceri, Grades 2-8.
- [My Antarctica: True Adventures in the Land of Mummified Seals, Space Robots, and So Much More](#) by G. Neri (Author) Corban Wilkin (Illustrator) (Candlewick Press, 2024), Grades 2-5.

## Solve It! For Kids Science Podcast

*Solve It! For Kids* gives you a peek into the world of real-life, experienced scientists, engineers, and experts. As you listen to their podcasts, you will learn how these professionals solve problems in their everyday jobs. This podcast is not just for students; it is also for parents and teachers seeking new ideas to teach their kids. These episodes support the topics discussed in the Down To Earth program.

- [How Do You Live in Space?](#) With Astronaut Dr. Cady Coleman
- [What is an Atmospheric River?](#) With Dr. Kristine Harper
- [How Do We Restore Our Connection to Water?](#) With Dr. Kelsey Leonard
- [How Do You Create a Robot Babysitter?](#) with Dr. Julia Badger

## Science Friday's Sun Camp Program

The center of our solar system and our closest star, the Sun is so much more than a light bulb in the sky. It's a dynamic system, constantly changing. Those changes affect us here on Earth in many ways, some obvious and some mysterious. But understanding the Sun and how it works may hold the key to discovering new living worlds in our Universe. The [Sun Camp](#) educational program features all-ages, easy-to-do, hands-on STEAM activities for families and educators curious about Sun science.

### [Make A Swirling Shaving Cream Sun Model](#)

Model our closest star, the Sun, with this crafty hands-on science activity using shaving cream and food coloring. learn about sunspots, solar flares, and coronal mass eruptions.

### [Gravity And Centripetal Force In Our Solar System](#)

Gravity, inertia, and centripetal force keep our solar system in motion. Explore with a series of kid-friendly gravity and force experiments to test different phenomena. Then, put your new knowledge to use as you take on our design challenges.

### [The Science Of Sunlight And Shadows](#)

Discover how the Earth's movement affects the movement of light on the planet. Track sunlight and shadows as you investigate the science behind day and night, the seasons, and eclipses.

### [The Awesome Energy Of The Sun](#)

The Sun generates immense amounts of electromagnetic radiation. That heat and light travel to Earth to keep you warm, brighten your days, grow your food... and give you sunburn! Experiment with the effects of ultraviolet light as you explore the electromagnetic spectrum from the Sun.

### [Use Magnetic Fields To Understand Space Weather](#)

The Sun's solar wind stretches billions of miles to the edge of the solar system. The Earth's magnetic field protects us from the radiation from the solar wind. The interaction between the Sun's solar winds and the Earth's magnetic fields creates beautiful auroras. Learn why with hands-on experiments.

### [Use Engineering To Design A Solar Space Probe](#)

You'll learn about satellites and probes—what they do and how they are constructed. Then, get hands-on as you use the engineering design process to build a solar space probe to investigate the Sun.

## Additional Science Friday Space Activities

### **Bring The Artemis Mission Home With Hands-On Activities**

Grab some supplies and try these hands-on STEM activities right at home to celebrate the Artemis mission to the Moon. All ages.

<https://www.sciencefriday.com/educational-resources/artemis-home-activities/>

### **Design A Glove Fit For An Astronaut**

In this engineering design challenge, invent space gloves that will allow astronauts to collect samples on future missions to Mars. Grades 6-10.

<https://www.sciencefriday.com/educational-resources/design-a-glove-fit-for-an-astronaut/>

### **Will Future Astronauts Need To Worry About Moonquakes?**

Analyze real evidence of seismic activity on the lunar surface to advise the next generation of crewed missions to the moon. Grades 6-10.

<https://www.sciencefriday.com/educational-resources/future-astronauts-moonquakes/>

### **Eclipse Party Activities**

Spice up your eclipse party with these hands-on activities—and learn a little something about our Sun, Moon, and Earth in the process. All ages.

<https://www.sciencefriday.com/educational-resources/eclipse-party-activities/>

### **Splat! Model Lunar Impacts Using Water Balloons**

In this resource from International Observe the Moon Night, use water balloons to model how the moon's largest impact basins were created. Grades 3-5.

<https://www.sciencefriday.com/educational-resources/splat-model-lunar-impacts-using-water-balloons/>

### **Go Out And Observe the Moon!**

Celebrate lunar science and moon exploration with STEAM investigations, simulations, and fun art activities. Grades 3-5.

<https://www.sciencefriday.com/educational-resources/go-out-and-observe-the-moon/>

### **Scale Solar System Orbits—And Satellites!**

[www.sciencefriday.com/download](https://www.sciencefriday.com/download)

Use planetary orbits and scale ratios to draw scale solar system orbits while exploring gravitational forces. Grades 6-8.

<https://www.sciencefriday.com/educational-resources/scale-solar-system-orbits-and-satellites/>

### **What Causes Some Aurora To Appear In Discrete Lines?**

Why do some auroras appear in discrete lines, while others fill the sky with diffuse light? Grades 9-12.

<https://www.sciencefriday.com/educational-resources/some-aurora-appear-in-discrete-lines/>

### **Model Eclipses**

Model solar and lunar eclipses by making your own physical, proportional representations of the Earth and Moon. Grades 6-12. <https://www.sciencefriday.com/educational-resources/model-eclipses/>

## Science Friday Space Station Stories to Share

### Audio Stories

#### **Astronaut Cady Coleman On ‘Sharing Space’**

Cady Coleman discusses her reaction to seeing Earth from orbit and the challenges of her path into space. (17 minutes)

<https://www.sciencefriday.com/segments/cady-coleman-astronaut-book-sharing-space/>

#### **3D-Printed Coffee Cups Help Liquids Defy Gravity**

The cups work using capillary action: Simply press your lips to the rim, and you get a sip, whether you want one or not. (12 minutes)

<https://www.sciencefriday.com/segments/3d-printed-coffee-cups-help-liquids-defy-gravity/>

#### **A ‘Dune’-Inspired Space Suit To Turn Astronaut Pee Into Water**

Researchers developed a prototype of the system, which could replace the high-absorbency diapers that astronauts wear on space walks. (6 minutes)

<https://www.sciencefriday.com/segments/space-suit-turns-astronaut-pee-into-clean-water-5-6-minutes/>

#### **Making A Meal Fit For An Astronaut**

NASA’s team of food scientists must make food nutritious, delicious, and fit for spaceflight. (12 minutes)

<https://www.sciencefriday.com/segments/nasa-chef-astronaut-food/>

#### **Views From Aloft: The Art of Space Photography**

Astronaut Don Pettit has taken thousands of mesmerizing images during his three missions to the International Space Station. (17 minutes)

<https://www.sciencefriday.com/segments/views-from-aloft-the-art-of-space-photography/>

#### **To Get Ready For Mars, NASA Studies How The Body Changes In Space**

Spending time in space affects everything from eyesight to bone health. NASA’s CIPHER program will measure these changes and more. (9 minutes)

<https://www.sciencefriday.com/segments/nasa-cipher-space-body-study/>

### **After A Year in Space, Subtle But Lingering Changes**

How astronaut Scott Kelly's gene expression changed after a year on the ISS. (21 minutes)

<https://www.sciencefriday.com/segments/after-a-year-in-space-subtle-but-lingering-changes/>

### **The Most Unusual Laboratory (Not) on Earth**

Floating 200 miles above the Earth, and speeding at nearly five miles per second, the International Space Station may be the most unusual lab available to science. (19 minutes)

<https://www.sciencefriday.com/segments/the-most-unusual-laboratory-not-on-earth/>

### **As Space Exploration Expands, So Will Space Law**

A new generation of space lawyers will broker deals and handle disputes between countries as the world enters a new era of space exploration. (18 minutes)

<https://www.sciencefriday.com/segments/space-exploration-law/>

### **Date Set For International Space Station's Burial At Sea**

In 2031, the International Space Station will join the Mir station and other orbiters in the ocean's "spacecraft cemetery." (12 minutes)

<https://www.sciencefriday.com/segments/international-space-station-end/>

### **The (Not So) Easy Guide To Getting To Space**

In a new book, astronaut Mike Massimino reflects on his time in space, and what it taught him about succeeding on Earth. (33 minutes)

<https://www.sciencefriday.com/segments/nasa-astronaut-book/>

### **Ask an Astronaut: Don Pettit and Jeff Hoffman on Spaceflight**

Two astronauts answer questions and discuss the many curiosities of living in space. (26 minutes)

<https://www.sciencefriday.com/segments/ask-an-astronaut-don-pettit-and-jeff-hoffman-on-spaceflight/>

### **Boeing's Starliner Leaves Astronauts Stuck On The Space Station**

The Boeing capsule is having issues with its thrusters and cannot bring astronauts back to Earth, leaving NASA scrambling for alternatives. (12 minutes)

<https://www.sciencefriday.com/segments/boeings-starliner-leaves-astronauts-stuck-on-the-space-station/>



### **Are Space Elevators Really A Possibility?**

The space elevator has long been a part of science fiction, but could soon be a reality? (17 minutes)

<https://www.sciencefriday.com/segments/space-elevator-possibility/>

### **Cleaning Up Earth's Space Junkyard**

Satellites and other launches have left over 100 million small particles floating in low Earth orbit.

<https://www.sciencefriday.com/segments/space-junk/>

### **Keeping An Eye On The Climate, From Space**

As the government focuses more attention on climate issues, NASA has appointed a 'senior climate advisor.'

<https://www.sciencefriday.com/segments/nasa-climate-change-advisor/>

## Written Articles

### **'Slingshot' And The Mental Battle Of Long Space Missions**

How is NASA preparing for the challenges of long-term space travel?

<https://www.sciencefriday.com/articles/slingshot-movie-astronaut-mental-health/>

### **The Deep Roots Of Astronomy In Latin America**

By observing the cosmos, Indigenous peoples precisely measured natural phenomena like solar eclipses, leap years, and El Niño.

<https://www.sciencefriday.com/articles/deep-roots-of-astronomy-in-latin-america/>

### **Return Of The GEDI: Scanning The Amazon With Lasers**

Data collected by an instrument on the International Space Station gives scientists insight into deforestation in the Amazon rainforest.

<https://www.sciencefriday.com/articles/gedi-mission-deforestation-carbon-amazon/>

### **The State Of Space Research In Latin America**

Sustainable development is the driving force of space research across the region, which has a lack of investment but no lack of talent.

<https://www.sciencefriday.com/articles/state-of-space-research-in-latin-america/>

### **What Will Emerge From The Wreckage Of The Arecibo Telescope?**

In 2020, Puerto Rico's massive Arecibo radio telescope collapsed. The research facility may now be on the cusp of a new chapter.

<https://www.sciencefriday.com/articles/arecibo-c3-astronomy-legacy-in-puerto-rico/>

### **Latina Space Scientists Want To Stop Being The Exception**

Three leaders in space science from Guatemala, Costa Rica, and Argentina on battling sexism and innovating in their fields.

<https://www.sciencefriday.com/articles/latinas-in-astronomy-and-space-science/>

### **The Feat Of Building The World's Largest Telescope**

The Extremely Large Telescope is under construction on a mountaintop in Chile's Atacama Desert. It could revolutionize astronomy.

<https://www.sciencefriday.com/articles/worlds-largest-telescope-elt-atacama-chile/>

### **Two Last Names: Reflections From A Colombian Astronomer**

Countries across Latin America have very different struggles, and successes, in producing and retaining astronomy talent.

<https://www.sciencefriday.com/articles/retrospective-latin-american-astronomy/>

### **Witnessing Environmental Change From Space**

From deforestation to algal blooms, NASA earth scientist Africa Flores-Anderson monitors the planet through satellite images and data.

<https://www.sciencefriday.com/articles/africa-flores-anderson-environment/>

## International Space Station Trivia

Test your knowledge of space, NASA, and the International Space Station with these fun questions!

1. In what year did astronauts first start to live on the International Space Station?
  - a. 1993
  - b. 2000
  - c. 2008
  - d. 2019
2. About how far above the Earth does the ISS orbit?
  - a. 120 feet
  - b. 380 meters
  - c. 250 miles
  - d. 1 light year
3. What is the name of the NASA astronaut who spent 1 year living on the ISS, in order to help scientists study the effects of living in space on the human body?
4. TRUE OR FALSE: The International Space Station is visible from Earth.
  - a. True
  - b. False
5. What is the primary source of power for the ISS?
  - a. Solar
  - b. Nuclear
  - c. Wind
6. We aren't ready to send humans to Mars yet... but NASA has sent 5 rovers to the Red Planet! They were named Sojourner, Spirit, Opportunity, Curiosity and... what is the name of the newest rover on Mars?

7. How fast does the International Space Station travel around Earth?
  - a. 5 miles per hour
  - b. 60 miles per hour
  - c. 3,800 miles per hour
  - d. 17,900 miles per hour
  
8. Complete this common phrase about our planet: “Earth: the \_\_\_\_\_ rock from the Sun.”
  
9. What country created the robotic arm now used on the outside of the ISS, which helps capture visiting spacecraft, move equipment, and assist astronauts during spacewalks?
  - a. USA
  - b. Canada
  - c. Russia
  - d. China
  
10. About how many months does an average mission last for astronauts aboard the International Space Station?

## Trivia Answers

1. B. 2000

Learn more about the construction of the ISS at "[About the International Space Station.](#)"

2. C. 250 miles

Learn more with this article, "[What Is the International Space Station?](#)"

3. Scott Kelly

Learn more about [NASA's Twins Study.](#)

4. True

Use the [Spot the Station app](#) to [Track the ISS](#) from Earth.

5. Solar

Discover how engineer power the space station with "[The ISS Engineering Feat: Power and Cooling.](#)"

6. Perseverance

Learn more about [Perseverance](#), or the other rovers [Sojourner](#), [Spirit and Opportunity](#), or [Curiosity](#).

7. D. 17,900 miles per hour

Read about this and other [amazing station facts!](#)

8. Third

Discover the planets in the article, "[Planet Sizes and Locations in Our Solar System.](#)"

9. B. Canada

[Canadarm2](#) is a 17-metre-long robotic arm on the ISS.

10. 6 months

Learn more as you "[Imagine You're an Astronaut.](#)"

## Further Resources

### International Space Station Facts

Below are useful resources for connecting participants to the International Space Station and its purpose.

- [Space Station Facts and Figures](#)
- [20 Breakthroughs from 20 Years of Science Aboard the Space Station](#)

### Expedition 72

- [Mission website](#)
- [Don Pettit](#), Flight Engineer
- [Butch Wilmore](#), Flight Engineer
- [Photo Gallery](#)



### NASA Videos

- [ISS Fly-through Tour](#)
- [ISS Promo Video](#)
- [Sound of Silence-Earth Views from Station Music Video](#)
- [Everything about the Space Station \(rapid fire questions\)](#)
- [Space Station Assembly Animation](#)
- [How to Use the Bathroom in Space](#)
- [Life on Station](#)

### NASA STEM Engagement Activities

- [Explore NASA STEM](#)
- [NASA Next Gen STEM](#)
- [NASA STEM on Station](#)
- [NASA STEMonstrations](#)