

# Talk to an Astronaut in Space!



## AMATEUR RADIO on the INTERNATIONAL SPACE STATION



### What does ARISS offer?

ARISS organizes and schedules interviews between ISS crew members and educational organizations.

With the help of experienced amateur radio volunteers and coordination from the ARISS international team, astronauts speak by radio directly with large youth audiences in a variety of public forums — school assemblies, science museums, scouting events, and space camps — where students, educators, parents, and communities learn about space, space technologies, and amateur radio.

The ARISS program offers schools and educational organizations an opportunity to use NASA and amateur radio STEM education resources tied to the impact of a memorable event.

Visit [www.ariss.org](http://www.ariss.org) for more information.

### Learn about...

- Challenges of space exploration
- Space research and space communications
- Radio science and radio technology with amateur radio

### How can you participate?

- Review the ARISS Proposal Guide and find our Proposal Form at [www.arrl.org/hosting-an-ariss-contact](http://www.arrl.org/hosting-an-ariss-contact)
- Contact a local amateur radio group in your community
- Develop an education plan
- Submit a proposal during our Spring or Fall proposal window



Offered by AMSAT and ARRL, in partnership with NASA, CASIS, and amateur radio organizations and space agencies around the world.



**ARRL** The national association for  
AMATEUR RADIO®





**Your ARISS education plan might include:**

- Learning about the research projects under way on the ISS
- Investigating the biographies of astronauts and information about their training
- Learning about other NASA space research projects as well as other space agency research
- Investigating what is involved with space travel and space/satellite communications
- Exploring orbital mechanics
- Exploring radio science, wireless technologies, and amateur radio
- Learning about other ISS educational activities that you might employ before or after your event as part of the Space Station Explorers program



**The goal:**

To engage students in STEM content areas, encourage them to develop thoughtful questions based on what they have learned for the interview with the astronaut, and inspire their curiosity to learn more!

**One example:**

**ARISS Contact Brings Lab to Life**

Kopernik Observatory & Science Center in Vestal, New York, offered week-long STEM-focused camps during the summer of 2016. One of the camps, “Robots on the ISS,” offered fourth and fifth graders an exciting opportunity to learn about various aspects of robot hardware and software design and function. Their “lab” was the International Space Station and, working in teams, they designed robots that might be able to help astronauts do their jobs. What better way to design a project than to speak directly with an astronaut on the ISS? Kopernik was able to secure an amateur radio on the International Space Station (ARISS) contact during the camp. While the ISS was in range, 18 students were able to ask astronaut colonel Jeff Williams about how robots are used on the ISS, and about work and life there. In addition to rehearsing for the contact, portions of the camp week were dedicated to explaining radio communication, satellite tracking, and amateur radio.

Another camp, “Journey to the Edge of Space,” offered to middle school students, involved students in designing, building, testing, and launching a payload on a weather balloon. The payload included an amateur radio beacon reporting the balloon’s flight path. Students learned how to interpret the raw packets from the beacon to map the information into a 3-D model of the flight path.

**Comments from participants**

*This was an absolutely amazing experience—one that my students and I will not forget. It was a great experience with our whole school community involved, as well as members of the community at large.*

**Evansville Day School, Evansville, IN**



*The experience deepened our understanding of science as it relates to the space program in so many ways... Many students had questions about the day to day life in space before the contact. After the contact students had more questions about the research they are doing on the ISS and why. It's led to even more inquiry! The second big learning experience was about amateur radio.*

**Bay View Elementary School, Burlington, WA**

*These are once-in-a-lifetime opportunities for young people to learn and experience something unique from the perspective of trained professionals with exciting outcomes; science that has practical applications.*

**Duluth Children’s Museum, Duluth, MN**

*This was an incredible event. We were able to bring our entire school in on this and it was a pivotal moment for our school year, and perhaps the lives of those in attendance.*

**Anacapa School, Santa Barbara, CA**

*It was a wonderful experience. As a result of this experience, my students want to start an amateur radio club.*

**Lew Wallace STEM Academy, Gary, IN**



ARISS is a non-profit volunteer activity supported by its sponsors and donations from interested parties. If you would like to help, please go to [www.amsat.org](http://www.amsat.org) and click on the ARISS “Donate” button to contribute.