



Doc # 19

Amateur Radio on the International Space Station

Committee Report to the ARRL Board of Directors

July 2024

Submitted by:

**ARRL ARISS Committee,
VD Tharp, Chairman**

ARRL ARISS Committee Members for 2024

Director Tharp
Vice Director Nelson
Vice Director Temples
Director Vizcarrondo
Ms. Rosalie White, ARRL representative to ARISS
Mr. Steve Goodgame, ARRL HQ staff liaison

A Summary of the ARISS Program

Amateur Radio on the International Space Station (ARISS) is a well-known international working group that promotes STEM education and Amateur Radio. In 1996 the ARRL CEO tasked ARRL Headquarters staff to meet NASA’s challenge to set up just 1 worldwide ISS ham radio team. The staff began the process of establishing ARISS-International, contacting IARU societies while AMSAT-NA contacted other AMSAT societies. The ARRL has been an ARISS sponsor since 1996. ARISS was built on the shoulders of human spaceflight radio activities since 1983 when national amateur radio groups began working with space agencies to fly Amateur Radio to support educational and ham radio activities on the Space Shuttle (SAREX), Mir (MIREX) and the ISS (ARISS). Each year ARISS helps astronauts earn ham licenses and make multiple Amateur Radio school contacts and sometimes, radio contacts with hams. ARISS activity puts Amateur Radio in the lives of students, educators, media, communities, political leaders, and hams. Hams enjoy making thousands of Amateur Radio contacts each year via the ARISS cross band repeater and using ARISS packet. Hams capture ARISS SSTV images downlinked by ISS crews—very popular with hams and students, and educators enjoy involving their classrooms.

For further details on ARISS’s history, please refer to the ARRL ARISS Committee Report submitted in January 2024 and in previous years.

Authorizing Board Motion to Establish the ARRL ARISS Committee, Minute 27, January 2019

In January 2019 the ARRL Board of Directors established the ARRL ARISS Committee and tasked it with improving ARRL’s support to the ARISS program. The ARRL Board motion:

Be it therefore resolved: A permanent ARISS committee is created by the Board to develop an interactive relationship with ARISS. Said committee should consist of three members of the Board, with assistance of the ARRL Lifelong Learning Manager and the ARRL Communications Manager as consultants, all to be appointed by the ARRL President. The committee will recommend the framework under which the ARRL will support ARISS to include recommendation of the ARRL representative to ARISS, standardized mission support, operational needs, ongoing mentoring and assistance to local Amateur Radio clubs in support of ARISS contacts, and a standardized set of Public Relations messages to ensure consistency of the ARRL message to ARISS, local Amateur Radio groups and the public at large.

ARRL ARISS Committee Activities for January through June 2024

ARRL ARISS Committee Chairman Tharp and Ms. White communicated one or more times a week via email or phone pertaining to school selections, ARISS school contacts, media hits,

ARISS hardware news, the next Axiom crew stay on the ISS and their school contacts, space vehicle launches, docking, and departures that affected school contacts, and more. Director Tharp shared items with the ARRL ARISS Committee.

When NASA named dates for ARISS school contacts and the ARISS news release team wrote the releases, Ms. White notified ARRL Directors, ARRL Vice Directors, and ARRL Section Managers in the respective divisions and sections, and copied Committee Chairman Tharp.

Ms. White collaborated with ARRL News Editor John Ross, KD8IDJ on a news item, per his request. Per the request of *QST* editors, she edited an answer for the “Ask Dave” column.

ARRL and ARISS Goals

The number one goal of ARISS is to be all about education and inspiring youth about STEM, especially space and radio communications. The agreement between ARISS and schools is for them to handle the media in their area; schools do a fine job. ARISS prepares and distributes news releases a few days prior to an ARISS school contact to the ham radio community and aerospace community. Naturally, these news releases have a balanced mix of information on radio and space. Between January and June 2024, ARISS got 43 total media hits! This topped the total of the previous six months.

See Appendix B. for the list of 43 media hits.

ARISS Radio Contacts in the first half of 2024

Each of the five ARISS Regions gets 20% of all school contacts. The ARISS-US Region always gets more than its 20% allocation. ARISS radio contacts in the first half of 2024 were (the * designates the US schools and students):

IC Statale Villa Guardia – Italy

Istituto Comprensivo Anna Rita Sidoti – Italy

Aznakaevsky district schools – Russia

Ömer Cemile Güler Imam Hatip Secondary School – Turkiye

Bandırma Şehit Güvenç Anatolian High School – Turkiye

Bilingual Montessori School of Lund – Sweden

*Alabama School of Cyber Technology and Engineering, Huntsville, AL

*Lilburn Elementary School, Lilburn, GA

School of Telecommunications Engineering-Valebcua – Spain

B. Russell High School – Italy

Immanuel Kant Baltic Federal University – Russia

*Girl Scout Troop 1089 with other troop young ladies, Sacramento, CA

*Youth at 40th Anniversary of Human Spaceflight Amateur Radio Conference, Kennedy Space Center, FL

IES Pedro Simón Abril High School - Spain

Second Chance School of Orestiada – Greece
St. John’s School-NL – Canada
Southwestern State University – Russia
Amur State University – Russia
Ryazan State Radio Engineering University - Russia
*Embry-Riddle Aeronautical University & 3 middle schools, Daytona Beach, FL
Collège Théodore Monod – France
Volga State University - Russia
*Tooele County School District schools, Tooele, UT
Scuola Secondaria I grado A. Moro – Italy
Mrs Ethelston’s CE Primary Academy – UK
*Mountain View Elementary, Marietta, GA
American International University – Kuwait (*includes students from the US)
*Pleasant Knoll Middle School, Ft. Mill, SC
*Thrive Home School Academy & District 2 schools, Colorado Springs, CO
*Centennial Campus Magnet Middle School Center for Innovation, Raleigh, NC
Bundaberg High School – Australia
Eric Knows Community Interest Company - UK
Voskresensk Children's School of Arts – Russia
Pugachev Center For Development Creativity of Children - Russia
*Belmont Elementary School, Woodbridge, VA
Escolas Dr. Serafim Leite – Portugal
Educativo Nuestra Señora de Fátima #1139 & #8119 - Argentina

ARRL ARISS Committee Travel at Conventions, Conferences

Director Tharp provided handouts for ARISS and the ARISS-STAR program along with ARRL materials at a table exhibit at the Mike and Key Electronic Swap meet in March, and at SEAPAC in late May-early June.

See Appendix A. for a table on ARISS volunteers’ outreach at ham conventions, hamfests, club talks, education conferences, aerospace conferences, and events.

ARRL *STAR* update

The STAR robot had an issue with following a command to turn in one particular direction, and the STAR team worked on this and got it resolved. The team that has been moving STAR forward includes our ARISS Director of Education, a college freshman intern, and a retired professor. They each live in different states, Illinois, Texas, and Pennsylvania.

They had great success with their work, followed by recent testing, of their STAR robots: each of them was at home with their robot and could control the other person's robot that was at their home. This is preparation for classroom lessons that emulate NASA's control of rovers on Mars and NASA robots on the International Space Station.

ARISS educators on the ARISS-US Education Committee have been demonstrating the STAR robot at several national educator conferences and will be doing demos at an August education workshop/conference.

The ARISS STAR team members are now working toward STAR's ability to be controlled by ARISS packet APRS.

Thank You, ARRL

ARISS thanks ARRL for its support of ARISS and for generous funding it has provided in past years. ARRL is greatly appreciated.

Respectfully submitted,

Mark J. Tharp, KB7HDX
ARRL ARISS Committee Chair

Rosalie White, K1STO
ARRL ARISS Representative

Appendix A.: Outreach Events

US Events for Hams, the General Public, Youth, the Space Industry
Winchester Academy CAP, ARISS lessons - Virginia
Ham Nation Talk by Frank Bauer - virtual
Lake Monroe ARS ARISS Talk - Florida
AIAA SciTech Forum Education Workshop - Florida
GARS TechFest exhibit & education activities - Georgia
Today Show YouTube on ARISS - virtual
Embry Riddle Aeronautical University Visit by ARISS Mentor - Florida
Daytona Beach ARS ARISS Talk – Florida
North Fulton ARL ARISS Talk – Georgia
Cow Town Hamfest ARISS exhibit - Texas
Astronaut Candidate Class, ARISS Talk - Texas
Bishop Oconnell HS – ARISS-related STEM lessons - Virginia
Space Exploration Educators Conference – ARISS booth, forum - Texas
Orlando HamCation booth & forum - Florida

ARISS 40th Anniversary Education Conference & Exhibit - Florida
Centennial Campus Magnet M.S. ARISS-related STEM lessons – North Carolina
Irving Hamfest exhibit - Texas
Mountain View El. Sch. ARISS-related lessons – Georgia
Clark County ARC ARISS talk – Washington
Mike & Key Hamfest exhibit - Washington
Galileo STEM Academy STEM Night ARISS activities – Idaho
Goddard Space Science Symposium ARISS talk - Maryland
National Science Teachers Association National Conference - Colorado
Winchester STARBASE Academy ARISS talk to middle schoolers - Virginia
Shenandoah University ARISS talk - Virginia
Family STEM Night at 5 Afterschool Facilities, ARISS lessons to parents - Ohio
Afterschool Youth, ARISS lessons to kids - Ohio
El Rincon School Balloon Launch & ARISS lessons - California
Eclipse Symposium, ARISS talk - California
Belmont Elementary School ARISS-related lessons – Virginia
Greenville Jr H.S. ARISS lessons - Illinois
American Rocketry Challenge ARISS exhibit - Virginia
Hamvention forums, exhibit, talks - Ohio
Atlanta Hamfest ARISS table & forum cameo - Georgia
SEAPAC ARISS exhibit - Oregon
ARISS Student talk on ARISS to Westchester ARA - Michigan
Space Port Area Conference for Educators-ARISS exhibit & talk - Florida
ATARA STEM Trailer with ARISS exhibits at Youth Camp - Ohio

Appendix B: List of 43 Known Media Hits from Second Half 2023

Between January and June 2024, ARISS ‘s total media hits topped the previous six months’ total hits. This time there were 43!

ARISS’s school events likely resulted in many more media hits than the ones ARISS is aware of. Also, this report does not include all of the stories and posts that the ARISS team volunteers

develop for the ARISS web page, ARISS Facebook, ARISS Twitter, ARISS Instagram, ARISS Mastodon, ARISS Threads, and ARISS LinkedIn.

Here are the 43 media hits!

Hometown News Volusia - Volusia students will talk to International Space Station astronaut
https://www.hometownnewsvolusia.com/news/volusia-students-will-talk-to-international-space-station-astronaut/article_22786894-f050-11ee-9992-c70c570b065d.html

WNDB Students in Daytona Beach
<https://newsdaytonabeach.com/stories/volusia-students-to-talk-to-international-space-station,74713>

Newsbreak Students to talk to ISS
<https://www.newsbreak.com/news/3389502168007-volusia-county-students-to-talk-to-iss-astronaut-matthew-dominick>

ERAU News - Embry-Riddle Aeronautical University Amateur Radio Club President said, It's a spectacular opportunity for learning
<https://news.erau.edu/headlines/local-students-talk-with-astronauts-at-embry-riddle-event>

Flagler News Weekly amateur radio operators on the ground connect students with the ISS
<https://www.flaglernewsweekly.com/?p=21215>

Amateur Radio Daily ARISS is seeking education institutions to host an Amateur Radio contact
<https://daily.hamweekly.com/2024/01/ariss-seeking-education-institutions-host-amateur-radio-contact/>

FOX21 Amateur Radio on the International Space Station-ARISS, students from Stratton Meadows
<https://www.fox21news.com/top-stories/d2-students-to-chat-with-the-international-space-station/>

Yahoo News The student pictured is just 1 among many with the biggest smile
<https://www.yahoo.com/news/harrison-students-glimpse-space-earth-015615586.html>

KRDO Between 60 and 80 of these special amateur radio contacts happen
<https://krdo.com/news/2024/01/29/astronauts-visit-colorado-springs-elementary-schools-ahead-of-iss-contact-event/>

Sacramento Bee Sacramento Girl Scout Troop selected to build ham radio and communicate with
<https://www.sacbee.com/news/local/article285331402.html>

KOAA due to the efforts of Amateur Radio on the ISS, ARISS...
<https://www.koaa.com/news/covering-colorado/district-2-students-speak-with-astronauts-in-the-iss-using-amateur-radio>

NBC Today editor contacted ARISS
<https://x.com/TODAYshow/status/1743262180550521310?s=20>

NBC Instagram Reel
[A high school club in Pennsylvania is making waves — radio waves, that is — by making contact with the International Space Station](#)

Atlanta News First Lilburn Elementary School students speak with Astronauts
<https://www.atlantaneWSfirst.com/2024/02/11/lilburn-elementary-school-students-speak-with-astronauts-international-space-st>

The Tooele County School District set up a press conference so that media outlets would get time with students and the teacher. At the press conference, reporters came from: Telemundo, Fox 13 Utah, Tooele Transcript Bulletin, KSL News Radio KSL TV, ABC 4 Utah, Deseret News. The ARISS PR team found 5 of them:

1. ABC4 Utah – Students out of this world
<https://www.abc4.com/news/local-news/utah-students-to-have-out-of-of-this-world-conversation-with-astronaut-in-space/>
2. Yahoo News - Organizers of the event facilitated “amateur radio experiments” in classes
<https://www.yahoo.com/news/utah-students-world-conversation-astronaut-195945453.html>
3. Fox 13 "There's nothing more manual than an amateur radio contact with the ISS
<https://www.fox13now.com/news/local-news/tooele-students-have-out-of-of-this-world-conversation-with-astronaut>
4. Deseret News - The students used a ham radio to talk to an astronaut on the ISS
<https://www.deseret.com/utah/2024/04/08/tooele-students-interview-astronauts-on-international-space-station/>
5. KSL News - Students communicated with the astronaut on the ISS via ham radio
<https://kslnewsradio.com/2093617/utah-students-speak-with-iss-astronaut/>

Other media hits:

Kottke.org A Michigan ham radio operator used a homemade setup with a handheld
<https://kottke.org/24/02/man-in-backyard-talks-to-orbiting-astronaut-using-homemade-antenna>

KCRA Communication was made via ham radio with help from River City ARCS
<https://www.kcra.com/article/northern-california-girl-scouts-contact-space-station/46912670>

Yahoo News - Radio communication for Girl Scouts
<https://news.yahoo.com/northern-california-girl-scouts-live-005912000.html>

FOX40 Each year, the Amateur Radio on the International Space Station
<https://fox40.com/news/local-news/sacramento-area-girl-scout-troop-speaks-with-nasa-astronaut-on-international-space-station/>

Carmichael Times Via Amateur Radio on the International ... Garland was the volunteer
<https://www.carmichaeltimes.com/2024/02/28/482654/local-girl-scouts-reach-outer-space->

WCNC TV NBC Charlotte, NC story titled "SC Students make Contact with ISS"
<https://www.wcnc.com/article/tech/science/aerospace/international-space-station-earth-day-fort-mill-pleasant-knoll-middle-school/275-f3f3fa9c-af0a-44a5-a62d-124a2b6c8fc6>

ALSO, a 2nd WCNC item: Fort Mill middle school makes contact with International Space Station
<https://www.wcnc.com/video/tech/science/aerospace/275-96b82173-559b-4c9e-8bbf-79bfde85ff1c>

Queen City News YouTube Pleasant Knoll Students Talk to Astronaut
<https://www.youtube.com/watch?v=xpsc8yqbGFo>

PBS North Carolina Each year, the group conducts about 100 **amateur radio** contacts between students &
<https://www.pbsnc.org/blogs/science/nc-students-experience-an-out-of-this-world-science-lesson/>

11Alive Mountain View elementary students speak through Amateur Radio
<https://www.11alive.com/video/news/local/mountain-view-elementary-students-speak-to-astronauts-through-radio/85-cc4d9b1c-0984-40c9-b02d-0836d3fc4d0d>

FOX 5 Atlanta Metro Atlanta students will use amateur radio to
<https://www.fox5atlanta.com/video/1443458>

Cobb County School District News Mountain View Gets Spaced Out, ham radio
<https://www.cobbk12.org/ci/p/97720>

NASA Blog Barratt teamed with Flight Engineer Loral O'Hara to conduct an ISS Ham
<https://blogs.nasa.gov/spacestation/2024/03/20/immunology-studies-and-robotics-for-orbital-residents-as-crew-and-cargo-crafts-count-down-to-launch/>

ISS Daily Summary Report – 3/20/2024 – ISS On-Orbit Status Report

<https://blogs.nasa.gov/stationreport/2024/03/20/iss-daily-summary-report-3-20-2024/>

Yahoo Movies Canada the session was from the Amateur Radio on the ISS

<https://ca.movies.yahoo.com/news/world-kangiqsualujjuag-students-radio-canadian-110000357.html>

WGEL The selection process is through the **Amateur Radio** on the International Space Station group

<https://wgel.com/news/2024/04/jr-high-selected-for-space-station-talk/>

MSN Huntsville Alabama ASCTE hosts radio conversation with astronaut

<https://www.msn.com/en-us/news/technology/ascte-hosts-radio-conversation-with-astronaut-on-the-international-space-station/ar-BB1hDjbG?apiversion=v2&noservercache=1&domshim=1&renderwebcomponents=1&wco=1&batchservertelemetry=1&noservertelemetry=1>

WAFF 48 ASCTE STEM pep rally

<https://www.waff.com/video/2024/02/01/ascte-hosts-radio-conversation-with-astronaut-international-space-station/>

WJTV - Students will talk with an astronaut on the International Space Station through amateur radio

<https://www.wjtv.com/news/education/mississippi-school-receives-nasa-moon-tree/>

Prince William Living magazine Belmont Elementary students in live radio conversation with astronaut

https://princewilliamliving.com/tag/dr-jeanette-epps/#google_vignette

Prince William County Public Schools News Thanks to the school radio club & Amateur Radio on the ISS

https://www.pwcs.edu/news/2024/06/out_of_this_world_communication

KOIN 6 Camas High School's amateur radio club made contact Saturday with the International Space Station

<https://www.koin.com/news/education/camas-high-radio-club-talks-with-iss-astronaut-mike-barratt/>

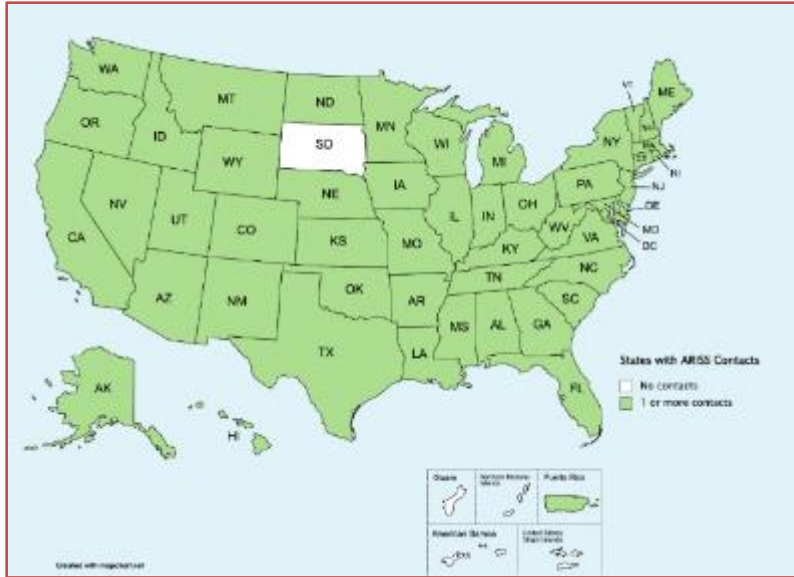
KOIN YouTube Students at Camas High School

<https://www.youtube.com/watch?v=ccgtTJFRWHQ>

The Citizen Amateur Radio on the International Space Station uses interns

<https://thecitizen.com/2024/06/11/one-of-our-interns-did-work-that-traveled-to-the-iss-why-you-should-hire-interns/>

Appendix C: (STILL) Looking for a South Dakota School Interested in ARISS



US ARISS Contacts—only missing S.D.—from Dec 21, 2000 to June 30, 2024