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April 4, 2024  
John E. Ross, KD8IDJ, [Editor](#)

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## Ham Radio's Many Roles During Solar Eclipse

In one of nature's most spectacular visual displays, on April 8, 2024, the sun will align with the moon and the Earth, casting a shadow that will transit much of North America.

Totality as seen in Madras, Oregon in 2017 [Sierra Harrop, W5DX, photo]

### Spectacular Display and Gathering

Millions will gather along the path of totality - the section where the sun is fully blocked by the moon - to witness something that happens, on average, once every 375 years for any place on our planet. The moon's

The advertisement for Schulman Auction features the company logo and name at the top. Below it, it says "AMATEUR RADIO EQUIPMENT SPECIALISTS". The main text reads "Collections, Estates, Specialty &amp; Premium Gear" and "BUY / SELL Click here for more information." At the bottom, it says "STAFFED BY HAMS FOR HAMS". There are also images of electronic equipment, including a "ZERO II" VNA and a "REAMP" power measurement tool, with a "CLEARANCE 40% OFF" banner.

shadow path will begin over the South Pacific Ocean, and then it will cross into North America, passing over Mexico, the United States, and Canada. Weather permitting, the first location in continental North America that will experience totality is Mexico's Pacific coast, at around 11:07 a.m. PDT. The shadow will exit continental North America on the Atlantic coast of Newfoundland, Canada, at 5:16 p.m. NDT.

Ham radio will be there - operators will participate in scientific experiments, serve local communities that will be overrun with hundreds of thousands of visitors, and provide a valuable tool for communicating if the mobile phone networks become overloaded.



The diamond ring effect of the 2017 eclipse [Sierra Harrop, W5DX, photo]

## Science

Regular sun and moon watchers will be out in force while many scientists, astronomers, and amateur radio operators will be "working" the eclipse. ARRL has partnered with Ham Radio Science Citizen Investigation (HamSCI), a NASA citizen science project, to encourage hams to send and receive signals to one another before, during, and after the eclipse. The project will be led by Nathaniel Frissell, W2NAF, a professor of Physics and Engineering at the University of Scranton in Pennsylvania. HamSCI participants will share their radio data to catalog how the sudden loss of sunlight during totality affects their radio signals. All radio amateurs are welcome to participate in the ionospheric research that is being conducted.

# HamSCI



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Information is available at the [Solar Eclipse QSO Party on the HamSCI website](#).

NASA plans to point a large telescope at the eclipse and broadcast the entire event across North America. The agency will host live coverage of the eclipse from 1:00 to 4:00 p.m. EDT (17:00 to 20:00 UTC) on April 8 on the [NASA YouTube](#) channel. There will be live views of the eclipse from watch parties across the country, and even from NASA's Glenn Research Center in Ohio, which happens to be inside the path of totality.

In addition to NASA's plans, the Super Dual Auroral Radar Network (SuperDARN), a collection of radars located at sites around the world, will bounce radio waves off of the ionosphere and analyze the returning signals. Their data will reveal changes in the ionosphere's density, temperature, and location.

There is also the Radio JOVE project, which is made up of a team of citizen scientists dedicated to documenting radio signals from space, and especially from Jupiter. During the total solar eclipse, Radio JOVE participants will focus on the sun. Using radio antenna kits that they set up themselves, they'll record solar radio bursts before, during, and after the eclipse.

### EmComm

Emergency communications groups, including those affiliated with the [Amateur Radio Emergency Service® \(ARES®\)](#), will be active in the areas near totality. National Weather Service (NWS) offices are closely watching weather patterns in and around the eclipse path for any severe weather that could impact watchers and increase traffic. Many first responders, including law enforcement, medical personnel, and fire departments, will be ready to respond to any emergency that might occur during the eclipse. Those officials represent some of the served agencies that radio amateurs work to support.

Most ARRL Sections within the path of totality have been working with their local served agencies to provide communications volunteers through amateur radio. In New Hampshire, for example, where cell phone and road networks are expected to be overwhelmed, New Hampshire ARES has local groups activated in many communities.

Public Information Coordinator of the ARRL New Hampshire Section Skip Camejo, AC1LC, said members across the state are ready. "A small team



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pulled from several NH-ARES groups will be providing limited communications support for the American Red Cross, using both HF and VHF. We will have an RV-based station in Lancaster, NH, and another in Pittsburg, both at locations provided by the New Hampshire Department of Transportation," he said.

In the event of a mass-casualty incident or a need for emergency sheltering, the teams will travel to the scene with a state police escort. They're expecting 10,000 to 50,000 visitors on Monday in that community alone.

Other ARES groups have been preparing and drilling over the last few months. In the ARRL North Texas Section, a set of criteria has been established as reportable to the local served agencies' emergency operations centers. Look for more details on ham radio involvement during the eclipse in next week's *The ARRL Letter*.

### Outreach

Many groups are holding eclipse festivals. Some amateur radio groups and clubs are taking advantage of these gatherings to get radio in front of the curious public. Vice Director of the ARRL Hudson Division Ed Wilson, N2XDD, is preparing an informational display for an event at his local library.

The Suffolk County Radio Club on Long Island, New York, will be participating in the Solar Eclipse QSO Party from the Moriches Branch Library.

An amateur radio outreach booth at The Big E in Springfield, Massachusetts. [Nancy Austin, KC1NEK, photo]

Wilson saw radio as a perfect addition to the library's eclipse activities. "Another club member and I went down to the librarian and spoke to her about the HamSCI event. We asked if we would be able to set up a ham radio station during the course of the day. They loved the idea and approved it, and they invited us to some other events that they're having in the next few months," he said.

For clubs that may have a public presence during the eclipse, there are [resources on the ARRL website](#) detailing how to help explain the hobby to the uninitiated.

The total solar eclipse will be the last of its kind for more than two decades in the contiguous U.S. The next total solar eclipse on U.S. soil won't occur until March 30, 2033, and it will be viewable only in Alaska.

## Register Now for the 2024 ARRL Youth Rally!

As part of the fun at Dayton Hamvention®, youth attendees are invited to participate in the 2024 ARRL Youth Rally on Saturday, May 18. The day



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will include a special agenda of activities and presentations intended to engage and inspire young hams and young newcomers to amateur radio.

The Youth Rally is intended for students who are 11 to 21 years of age. While Hamvention offers free tickets for junior high and high school students, advance registration for the Youth Rally is recommended. A preliminary Youth Rally agenda and registration instructions are on the ARRL website, at [www.arrl.org/expo](http://www.arrl.org/expo). The Youth Rally registration fee is \$20 and includes a tee shirt (to wear on Saturday), a badge, a lanyard, and a reusable tote bag.



Member-volunteer Cyndi Goodgame, K5CYN, with student member Liam Gazeley, KI5JXQ, at the 2023 ARRL Northwestern Division Convention, SEA-PAC.

The Youth Rally promises a full day of activities, discovery, sharing, and fun. Rally day begins at 9:15 AM on Saturday with the annual Dayton Youth Forum -- open to all Hamvention attendees - - moderated by well-known amateur radio educator Carole Perry, WB2MGP.



Young people working on a kit.

The forum includes presentations from young hams covering a variety of amateur radio activities, topics, and technology.

After lunch (on your own), Youth Rally registrants will gather in Forum Room 3 to get to know each other and explore a variety of amateur radio interests and activities. Learn about satellite communications, participate in a short sprint contest, contact a parachute mobile station, and participate in other fun! Bring a 2-meter handheld if you have one. The afternoon activities will be led by ARRL Education and Learning Manager Steve Goodgame, K5ATA, and will include other guests representing well-known amateur radio youth programs.

Students with a homemade antenna.

The Youth Rally will wrap up on Saturday with a forum for the ARRL Collegiate Amateur Radio Program (CARP).

The 2024 ARRL Youth Rally is just part of the fun planned for the 2024 ARRL National Convention at Hamvention. Visit [www.arrl.org/expo](http://www.arrl.org/expo), where you can find the full listing of ARRL-sponsored forums, exhibits,

and activities. Hamvention is May 17 - 19, 2024, at the Greene County Fair and Expo Center, in Xenia, Ohio; [hamvention.org](http://hamvention.org).



## ARRL Seeking Applicants for Assistant Education and Learning Manager

ARRL is working to engage the next generation of radio amateurs right in the classroom. Many young people have become active hams because of the [ARRL Teachers Institute on Wireless Technology](#).

This donor-funded effort brings teachers from across the United States together to get them excited about radio through hands-on experiments. The Institute then trains them on how to take that excitement back to their classrooms as they incorporate amateur radio into science, technology, engineering, and mathematics (STEM) learning.



Teachers downlink from a weather satellite outside ARRL Headquarters.

Now, we're looking for the right candidate for a position that will help us grow that program. In a posting at [www.arrl.org/employment-opportunities](http://www.arrl.org/employment-opportunities), potential candidates can find the entire list of criteria we're looking for in the Assistant Education and Learning Manager.

The position is perfect for someone with an education background, but the most important trait is being able to authentically share a passion for amateur radio, according to ARRL Education and Learning Manager Steve Goodgame, K5ATA. "We want someone energetic and passionate about amateur radio - willing to hit the streets at conferences to get teachers fired up. This person is going to help run the Teachers Institute and be a champion for engaging youth in amateur radio," he said.

Someone who has a passion for educating will be a great fit. According to the listing, the incumbent will develop schedules, choose material and

coursework, and understand the needs of education program students. The Assistant Manager will work to facilitate and instruct Teachers Institute sessions.

If you're interested in the job, email Goodgame at [sgoodgame@arrl.org](mailto:sgoodgame@arrl.org). ARRL is an equal-opportunity employer.

## 2024 ARRL Field Day Poster Released

A poster promoting 2024 ARRL Field Day has been released on the Field Day web page, [www.arrl.org/field-day](http://www.arrl.org/field-day). The two-sided informational poster features this year's theme "Be Radio Active". It includes a space for clubs to fill in information about their planned activation so that members of their community can come visit the site.

More resources for promoting 2024 ARRL Field Day are being developed and will be available soon. ARRL Field Day always occurs on the fourth full weekend in June. This year, it happens on June 22 - 23.



## Amateur Radio in the News

ARRL Public Information Officers, Coordinators, and many other member-volunteers help keep amateur radio and ARRL [in the news](#).

["Monitoring the Moon when it happens: Ham radio scientists to monitor eclipse"](#) / WEWS (Ohio) April 1, 2024 -- *The Case Amateur Radio Club is an ARRL Affiliated Club.*

["Amateur operators of ham radios chase storms, offer service"](#) / Tahlequah Daily Press (Oklahoma) April 1, 2024 -- *The Pottawatomie County Amateur Radio Club is an ARRL Affiliated Club.*

[Share](#) any amateur radio media hits you spot with us.

## ARRL Podcasts

## On the Air

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### Contribute to Science While You Operate

The Solar Eclipse QSO Party (or SEQP) is an on-air event coming up on April 8, the same day as the next total solar eclipse. The SEQP is a great opportunity for hams to contribute data to studies of Earth's ionosphere, the part of our atmosphere that makes radio communications possible, and all you have to do is get on the air and operate as you normally would. The lead organizer of Ham Radio Science Citizen Investigation (HamSCI), Dr. Nathaniel Frissell, W2NAF, joins us in this episode to explain how to get involved.

### ARRL Audio News

Listen to [ARRL Audio News](#), available every Friday. ARRL Audio News is a summary of the week's top news stories in the world of amateur radio and ARRL, along with interviews and other features.



The On the Air podcast and ARRL Audio News are available on blubrry, iTunes, and Apple Podcasts -- [On the Air](#) | [ARRL Audio News](#).

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The advertisement for 'The ARRL Antenna Book 25th Edition' features the ARRL logo on the left. The main text reads 'The ARRL Antenna Book 25th Edition' in large, bold letters. Below this, it says 'The ultimate reference for antennas, transmission lines, and propagation.' and 'ORDER NOW!'. On the right, there are two images of the book: one standing upright and one lying flat. A 'NEW!' badge is placed above the standing book.

## Announcements

**ARRL Resumes Accepting Life Membership Applications.** ARRL is again accepting new applications for Life Membership. Applications for Life Membership were paused last year, pending the approval of an adjusted, revenue-neutral program. Life Membership rates have now been established based on the current term dues amount and the applicant's age (requires verification). Payment can be made in full, or paid in 24 - monthly installments by credit card. ARRL Life Membership includes the benefits of membership for life. Print magazine subscriptions are sold separately. Visit the ARRL website for a complete list of [dues rates](#). Life



Membership can be purchased at [www.arrl.org/join](http://www.arrl.org/join) (current members should login to the ARRL website first).

**The [National Trail Amateur Radio Club](#) (NTARC) will participate in a special event to commemorate the death of former U.S. President Abraham Lincoln on April 12 - 15, 2024.** Special event call sign W9L will be in operation from 0001Z - 2359Z on 20 - and - 40 meters SSB, each day of the event. The club will operate from a recreated log cabin at the Lincoln Log Cabin State Historic Site, an 86-acre history park located eight miles south of Charleston, Illinois. The cabin is where Lincoln's father and stepmother once lived, and Lincoln often visited the site. President Lincoln died on April 15, 1865, one day after being shot by John Wilkes Booth. A QSL card will be available from NTARC/K9UXZ, P.O. Box 903, Effingham, IL 62401.

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## In Brief...

**April 1 - 7, 2024, is World Autism Awareness Week, and April 2 was designated as [World Autism Awareness Day](#).** To celebrate both, Russian amateur radio operator Raisa Skrynnikova, R1BIG, and Canadian amateur radio operator Robert Noakes, VE3PCP, will be operating their remote stations starting at 9:00 AM local time (13:00 UTC) as part of the [W2A International group](#) special event. There will be many worldwide special event stations taking part in the celebrations, including United States amateurs. Live streams will be available on YouTube at <https://www.youtube.com/@ve3pcp> and [QRZ.com](http://QRZ.com). Those interested in becoming a volunteer operator for the event can email [hamradioevents@gmail.com](mailto:hamradioevents@gmail.com) to apply. The weeklong celebration focuses on sharing stories and providing opportunities to increase understanding and acceptance of people with autism, as well as fostering worldwide support.

**The Annual 13 Colonies Special Event organizers are looking for amateur radio volunteers.** The event honors the 13 original British colonies that rebelled against Great Britain and founded the United States of America in July 1776. The event will use all amateur radio frequencies and modes, and it runs from July 1 to 7, 2024. During this time, there will be special event stations on the air corresponding to each of the 13 colonies, in addition to two bonus stations with 1 x 1 call signs. Volunteers will need to be available to work for several hours on each of the seven days, and they will need to maintain a log using a computer. The deadline for volunteer applications is May 1, 2024. All applications should be emailed to Larry Krainson, W1AST, at [wb1dby@gmail.com](mailto:wb1dby@gmail.com). Anyone participating in the event can receive a certificate by working any of the 13 colony stations, and a clean sweep certificate will be available for those who work all 15 stations. In 2023, the Massachusetts station, K2H, made

19,209 contacts. For more information, visit the [13 Colonies](#) Special Event website.



## The K7RA Solar Update

Tad Cook, K7RA, of Seattle, Washington, reports for this week's ARRL Propagation Bulletin, ARLP0014:

With the big increase in sunspot numbers and solar flux reported in last week's bulletin, I hoped the trend would continue. But, the numbers this week were lower.

This solar disk image was taken on April 4, 2024. [Photo courtesy of NASA SDO/HMI]

Five new sunspot groups emerged: one each day from March 30 through April 3.

Average daily sunspot numbers went from 147 to 60, and average daily solar flux declined from 191.9 to 136.9.

Geomagnetic numbers were much quieter. Average daily planetary A index softened to 7.6 from 25.4.

Predicted solar flux is 112 and 114 on April 4 - 5; 115 on April 6 - 8; 120 on April 9 - 10; 140 on April 11 - 13; 150 on April 14 - 16; 160 on April 17 - 18; 170 on April 19 - 24; 160, 150, and 140 on April 25 - 27, and 130 on April 28 through May 4.

The predicted flux values for this week are much lower than in last week's forecast for the same period.

Predicted planetary A index is 18 on April 4 - 5; 8, 5, and 5 on April 6 - 8; 8 on April 9 - 11; 5 on April 12 - 18; 8 and 10 on April 19 - 20; 8 on April 21 - 23; 5 on April 24 - 26; 10 on April 27 - 28; 8 on April 29, and 12 on April 30 through May 2.

Watch footage of a long-duration flare at <https://www.dailymotion.com/video/x8w8viq>.

Chip Sufitchi, N2YO, sent this email last week:

"Thanks for your excellent ARRL propagation bulletins! I also [have been] running a weekly propagation bulletin for more than 20 years (in the Romanian language). The bulletin is available on the web, distributed online by email, and read during the "Info DX" QTC on 80 meters each Thursday in Romania. All bulletins are available here: <https://www.radioamator.ro/misc/buletinepropagare.php>. On the first of each month, I update a page of propagation charts in certain directions centered on Romania (YO) at

[https://www.radioamator.ro/misc/grafice\\_propagare.php](https://www.radioamator.ro/misc/grafice_propagare.php). I also run a YO DX cluster, which is powered by a DXSpider server and hosted by a Raspberry Pi in my basement. They feed the web page at <https://www.radioamator.ro/yocluster/>. In fact, I run the whole [radioamator.ro](http://radioamator.ro) website, which is the most popular YO ham radio resource on the internet. This year, the website will have its 20<sup>th</sup> anniversary."

See a recent video from Space Weather Woman Dr. Tamitha Skov, WX6SWW, at <https://youtu.be/yKNB1YRX7kq>.

Sunspot numbers for March 28 through April 3, 2024, were 101, 79, 60, 50, 50, 35, and 45, with a mean of 60. The 10.7-centimeter flux was 172.7, 167.3, 139.6, 133.6, 120.4, 112.8, and 111.7, with a mean of 136.9. Estimated planetary A indices were 7, 6, 5, 9, 11, 8, and 7, with a mean of 7.6. Middle latitude A index was 6, 4, 4, 8, 9, 7, and 10, with a mean of 6.9.

Send your tips, questions, or comments to [k7ra@arrl.net](mailto:k7ra@arrl.net).

A comprehensive K7RA Solar Update is posted Fridays on the ARRL website. For more information concerning radio propagation, [visit](#) the ARRL Technical Information Service, [read](#) "What the Numbers Mean....," and [check out](#) the Propagation Page of Carl Luetzelschwab, K9LA.

A propagation bulletin [archive](#) is available. For customizable propagation charts, visit the [VOACAP Online for Ham Radio](#) website.

[Share](#) your reports and observations.

A weekly, full report is posted on [ARRL News](#).

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## Just Ahead in Radiosport

- April 4 -- NRAU 10m Activity Contest (CW, phone, digital)
- April 6 - 7 -- PODXS 070 Club PSK 31 Flavors Contest (digital)
- April 6 - 7 -- EA RTTY Contest (digital)

- April 6 - 7 -- RSGB FT4 International Activity Day (FT4)
- April 6 - 7 -- Georgia State Parks on the Air (CW, phone, digital)
- April 6 - 7 -- Louisiana QSO Party (CW, phone, digital)
- April 6 - 7 -- Mississippi QSO Party (CW, phone, digital)
- April 6 - 7 -- VHF/UHF Missouri QSO Party (CW, phone, digital)
- April 6 - 7 -- Florida State Parks on the Air (CW, phone, digital)
- April 6 - 7 -- SP DX Contest (CW, phone)
- April 7 -- WAB 3.5/7/14 MHz Data Modes (digital)
- April 8 -- Solar Eclipse QSO Party (CW, phone, digital)
- April 8 -- RSGB 80m Club Championship (CW)
- April 9 -- DARC RTTY Sprint (digital)

Visit the [ARRL Contest Calendar](#) for more events and information.

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## Upcoming Section, State, and Division Conventions

- April 12 - 13 | [Green Country Hamfest 2024](#), hosting the ARRL Oklahoma State Convention, Claremore, Oklahoma
- April 20 | [Delmarva Amateur Radio and Electronics Expo](#), hosting the ARRL Delaware State Convention, Georgetown, Delaware
- May 11 | [ARRL Nebraska State Convention](#), Lincoln, Nebraska
- May 17 - 19 | [Dayton Hamvention](#), hosting the ARRL National Convention, Xenia, Ohio
- May 31 - June 2 | [SEA-PAC](#), hosting the ARRL Northwestern Division Convention, Seaside, Oregon

- June 1 | [Atlanta Hamfest](#), hosting the ARRL Georgia Section Convention, Marietta, Georgia
- June 9 | [BreezeShooters Hamfest](#), hosting the ARRL Western Pennsylvania Section Convention, Butler, Pennsylvania
- June 15 | [ARRL Maine State Convention & Hamfest](#), Augusta, Maine
- June 15 | [Knoxville Hamfest and Electronics Convention](#), sponsoring the ARRL Delta Division Convention, Knoxville, Tennessee

Search the [ARRL Hamfest and Convention Database](#) to find events in your area.

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## Have News for ARRL?

Submissions for the ARRL Letter and ARRL News can be sent to [news@arrl.org](mailto:news@arrl.org). -- *John E. Ross, KD8IDJ, ARRL News Editor*

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- Listen to [ARRL Audio News](#), available every Friday.
- *The ARRL Letter* is available in an accessible format, posted weekly to the [Blind-hams Groups.io](#) email group. The group is dedicated to discussions about amateur radio as it concerns blind hams, plus related topics including ham radio use of adaptive technology.
- [NCJ -- National Contest Journal](#). Published bimonthly, features articles by top contesters, letters, hints, statistics, scores, NA Sprint, and QSO parties.



- [QEX -- A Forum for Communications Experimenters](#). Published bimonthly, features technical articles, construction projects, columns, and other items of interest to radio amateurs and communications professionals.

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