



Sinewaves



STONEWALL JACKSON AMATEUR RADIO ASSOCIATION

Meetings: 3rd Thursday of each month, 1930 hrs at Saint Marks Lutheran Church RT19/98 Clarksburg

SJARA Tuesday Night Net

This net meets each Tuesday evening at 2100 hours utilizing the N8FMD Repeater on 147.210 MHz with PL Tone of 103.5

December 17, 2016

<u>Net Control</u>	<u>Date</u>
1. K8TPH.....	December 20, 2016
2. N8FMD	December 27, 2016
3. WD8NSC	January 3, 2017
4. KC8AJH	January 10, 2017
5. K8PEC / K8TPH.....	January 17, 2017

Minutes SJARA Meeting November 17, 2016

Meeting called to order by President KA5NYN at 7:30PM

Minutes were presented by Secretary K8TPH as were entered for October, a motion was made by KC8AJH and 2nd by N8FMD to accept October Minutes to be accepted a listed in November Sinewaves. Passed by unanimous vote.

Treasurer's report was presented by Treasurer KD8IZC with a balance of \$931.72, motion to accept treasurer's as read by WV8TIM 2nd by N8FMD, passed by unanimous vote.

OLD BUSINESS:

Reservation confirmed for Christmas Dinner at Eat'n Park. Ceil needs confirmation by December 8th to get a number of attendants. Red Cross/OEM Reception center communication: No further action has been taken by the Red Cross and

it was discussed and recommended that the new President form a committee to further the Reception Center Communications. Discussion about past and future plans.

A Motion was mad by N8FMD and 2nd by N8FWD as follows: Drop any other plans for emergency communication in association with the Red Cross Reception centers until approached by the American Red Cross as to definite locations throughout Harrison County. Pasted by unanimous vote.

By Laws changes or additions submitted by N8FMD (By Law committee) and will be posted on the SJARA Web Site and/or emailed to all members. Changes will be voted on at the January Meeting.

NEW BUSINESS:

A drill will be held on establishing Hospital communication from the Harrison County Health Department involving six counties, Monongalia, Marion, Harrison, Doddridge, Preston, and Taylor. Ramona Swiger, Harrison County Health Department will be contacted by

N8FMD/WV8TIM to determine what will be needed to assist in the exercise on December 8th at the Health Department. The Amateur representative for the excursive contacted is WD8MGZ, Randy Williams.

N8FMD presented a donation in the form of a check from the Sons of the American Legion for \$500.00 for the purpose to purchase a new Repeater Controller 7330 for the 147.210 Mhz Repeater in Clarksburg, WV. The cost of the controller is \$524.00 and a check was approved to be issued by SJARA Treasurer to S-Com LLC PO Box 1546 LaPorte, CO 80535-1546 for the purchase. A motion was made to approve the payment by SJARA by N8FMD and 2nd K8YLA and past by a unanimous vote.

Due to time restraints voting for SJARA officers will be accomplished at the December Meeting.

Attendance at Meeting:
N8FWD, N8FXJ, N8FMD, K8PEC,
WD8NSC, WV8TIM, K8YLA,
KC8AJH, K8BNC, N8YPD,
KD8IZC, KA5NYN, WD8NSC,
K8TPH, Sandra, Harley.

Meeting adjourned at 8:45PM.

Minutes SJARA Meeting December 15, 2016

SJARA Christmas Dinner

The SJARA December meeting was called to order at 6PM in the dining room at Eat'n Park by President KA5NYN.

The reading of the November minutes and Treasurer Report were not read since the meeting would only be held to install the new Club Officers. The names were read by KA5NYN as follows; President, KC8AJH; VPresident WV8TIM; Secretary, K8YLA; Treasurer, KD8IZC; Executive Committee, N8FMD, K8PEC, WD8NSC. A motion was made to accept the slate with no more nominations and it was passed by an unanimous vote. The new officers will preside at the January meeting on January 19, 2017.

The evening proceeded with 21 in attendance at Eat'n Park. Members and guest present were: K85NYN, KD8IZD, N8YPE, KC8HUE, K8TPH & guest, WV8TIM, K8YLA, N8BBD & wife, WV8REX & wife, K8RAS, K8EAS, WD8NSC, K8PEC, WV8CC, K8QVC & wife with two guests. A good time was had by all. It was a very cold night with temperatures in the low teens.

Meeting adjourned, dinner followed.

SJARA 2016 Secretary Comments from K8TPH:

This is my last report as Secretary of the Stonewall Jackson Amateur Radio Association. It has been an enlightening experience for the last 12 years. I have held the offices of Treasurer, President, and Secretary and want to thank everyone for their cooperation and assistance in the SJARA. Merry Christmas and Happy New Year and all the best for SJARA in 2017.
73 Dick K8TPH

Amateur Radio Parity Act Bill Unable to Overcome Florida Senator's Objections

The Amateur Radio Parity Act, H.R. 1301, suffered an unbecoming demise on December 9 as the 114th Congress drew to a close. After passing the House of Representatives on a unanimous vote earlier this fall, the bill stalled in the Senate due to the intervention of only one member, Sen. Bill Nelson (D-FL). The measure would have directed the FCC to extend its rules relating to reasonable accommodation of Amateur Service communications to private land-use restrictions, such as covenants, conditions, and restrictions (CC&Rs) imposed by homeowner's associations.

"[During 2016] Nelson received thousands of e-mails, letters, and phone calls from concerned constituents asking for his support of H.R. 1301. Numerous meetings were held with his

senior staff in an effort to move the legislation forward," ARRL said in a [news release](#). "Negotiations, which led to an agreement with the Community Associations Institute ([CAI](#)), the national association of homeowner's associations and publicly supported by CAI and ARRL, were brushed aside by Sen. Nelson as irrelevant."

In a final meeting with Nelson's staff as the 114th Congress neared adjournment, it became clear that no matter what was said or done, the Senator would oppose the bill and refuse to allow it to move forward.

Because the measure had not been put on the floor schedule, the only way it could have passed the Senate would have been through a process called "unanimous consent." A Senate member may request unanimous consent on the floor to set aside rules and expedite proceedings. If any single Senator objects, though, the request is rejected.

The unhappy ending followed nearly 2 years of intense effort on the part of ARRL and thousands of its members, who contacted their Congressional representatives to urge their support of the measure on Capitol Hill. The ARRL Board of Directors is expected to discuss the future of the initiative at its January meeting.

IARU Continues Preparations for World Radiocommunication Conference 2019

Work already is under way by the International Amateur Radio Union ([IARU](#)) to address agenda

items of interest to Amateur Radio during the run-up to the 2019 World Radiocommunication Conference ([WRC-19](#)). The International Telecommunication Union ([ITU](#)) convenes WRCs every 3 or 4 years; the last WRC was in 2015. The IARU's prime focus is spectrum privileges -- gaining or retaining spectrum for the Amateur Radio services and spectrum protection -- making sure that amateur spectrum remains available for use and free from serious man-made interference. The IARU works within international standards organizations and with regional telecommunication organizations to accomplish its goals.

In the past month, IARU representatives have attended the European Conference of Postal and Telecommunications Administrations ([CEPT](#)) Electronic Communications Committee (ECC), CEPT's policy-making body. IARU was also present at ITU Working Parties under Study Group 5 (SG5), which studies matters related to terrestrial radiocommunication services, including the Amateur Service. Working Party 5A met November 7-17, preparing for WRC-19 with a focus that includes the Amateur Radio Services. Among other things, the panel:

- Completed revisions to Recommendation ITU-R [M.1732](#) dealing with parameters to be used in sharing studies regarding the compatibility of Amateur Service operations with other radio services, mainly in the 50-54 MHz band.

- Continued work on sharing and compatibility studies required for WRC-19 Agenda Item 1.1, which addresses an Amateur Radio allocation at 50-54 MHz in ITU Region 1, in common with what already is available in Regions 2 and 3. Sharing studies consider criteria under which spectrum can be shared among different radio services.
- Addressed other WRC-19 agenda items that could impact the Amateur Service.
- Updated the WP5A web document, "[Guide to the use of ITU-R texts relating to the Amateur and Amateur-Satellite services.](#)"

IARU will continue to be active in ITU and regional telecommunication organizations as preparations go forward for WRC-19. In the coming weeks, IARU plans to participate in CEPT's Conference Preparatory Group for WRC-19 and in its Project Team meetings. Read [more](#).

The Doctor Will See You Now!

"Antenna System Troubleshooting." is the topic of the latest (December 1) episode of the "[ARRL The Doctor is In](#)" podcast. Listen...and learn!

Sponsored by [DX Engineering](#), "ARRL The Doctor is In" is an informative discussion of all things technical. Listen on your computer, tablet, or smartphone -

- whenever and wherever you like!

Every 2 weeks, your host, QST Editor-in-Chief Steve Ford, WB8IMY, and the Doctor himself, Joel Hallas, W1ZR, will discuss a broad range of technical topics. You can also e-mail your questions to doctor@arrl.org, and the Doctor may answer them in a future podcast.

Enjoy "ARRL The Doctor is In" on [Apple iTunes](#), or by using your iPhone or iPad podcast app (just search for "ARRL The Doctor is In"). You can also listen online at [Blubrry](#), or at [Stitcher](#) (free registration required, or browse the site as a guest) and through the free Stitcher app for iOS, Kindle, or Android devices.

If you've never listened to a podcast before, download our [beginner's guide](#).

National Parks on the Air Update

The ARRL National Parks on the Air ([NPOTA](#)) program is on the verge of making history. With less than 2 weeks to go until the program concludes on December 31, NPOTA Activators have made more than 995,000 contacts from National Park Service units this year, and it appears certain that the count will top 1 million before year's end.

National Parks on the Air has proven to be one of the most successful and popular on-air activities ARRL has ever created. Tens of thousands of radio amateurs made at least one contact with an NPOTA Activator in 2016, and nearly 1,400

Activators went out and transmitted from a park. One million contacts from portable operations -- many of them using under 100 W and simple wire antennas -- is an amazing feat. Congratulations to every NPOTA Activator who hit the trail this year and helped NPOTA to reach its goal!

But the fun isn't over yet! More than 30 NPOTA activations are scheduled through the end of 2016, including Fort Scott National Historic Site in Kansas, and the Amistad National Recreation Area in Texas. NPOTA Activators have promised a burst of activity all across the country in the final week, especially all day on Saturday, December 31. Work as many NPOTA stations as you can!

[Details](#) about these and other upcoming activations can be found on the NPOTA Activations calendar. Keep up with the latest NPOTA news on [Facebook](#). Follow NPOTA on [Twitter](#) (@ARRL_NPOTA).

Commemorative Special Event Reenacts 1921 Amateur Radio Transatlantic Reception

Radio amateurs in the US and in Scotland have reenacted the first successful transatlantic reception of a shortwave Amateur Radio signal nearly a century earlier. Special event station [N1BCG](#) in Greenwich, Connecticut, and GB2ZE in Ardrossan, Scotland, completed contacts on SSB and

on CW during the December 11 event. ARRL, the Radio Society of Great Britain ([RSGB](#)), and the Radio Club of America ([RCA](#)) partnered to support the activity, organized by ARRL CEO Tom Gallagher, NY2RF, and Clark Burgard, N1BCG, who loaned his history-rich call sign for the



Clark Burgard, N1BCG, was one of the organizers of the special event. [Bob Inderbitzen, NQ1R, photo]

occasion.

On December 11, 1921, in Ardrossan, Scotland, reception of a radio signal transmitted from an RCA test station -- located in a small shack on the Greenwich, Connecticut, property of Minton Cronkhite, 1BCG -- helped to usher in the age of global communication. In Scotland, American Paul Godley, 2ZE, clearly heard the signal using a receiver of his own design.

"These events are fun, because they're timely and cause us to focus on the history and on the people who made history," Gallagher said. "We were very pleased with the tenor of it and with the media coverage, and we were happy to make the connection with GB2ZE, although we would have preferred to have made it on 160 meters, where it would have been closer to the frequency

used in 1921." The 1921 transatlantic test, on CW, was conducted on a wavelength of 230 to 235 meters (about 1.3 MHz). The ARRL transatlantic tests proved the value of the shorter wavelengths, which had long been considered worthless for long-distance communication.



Radio Club of America Board Member Mike Clarson, WV2ZOW (left), and ARRL Field Services Manager Dave Patton, NN1N, operate the N1BCG special event. [Bob Inderbitzen, NQ1R, photo]

Burgard spoke on 20-meter SSB with GB2ZE, operated by Jason O'Neill, GM7VSB, in Ardrossan. A bit later, ARRL Field Services Manager Dave Patton, NN1N, chatted with GB2ZE on CW. "After working GB2ZE on 20 meters, I was reminded of how much of a challenge the RCA ops had using 200 meters," Patton said. "Hearing signals in Europe from across the Atlantic had to be a tremendous thrill for Godley and the others listening."

The first message sent by Burgard from Greenwich to Ardrossan on Sunday morning repeated the original 1921 text. Patton retransmitted the message 30 minutes later on CW.

Describing the special event as "a rewarding experience," Patton said the entire team worked together to build a Field Day-style station in wintry weather. The complement of equipment

included what he called "a few fully armed vintage AM stations," as well as modern gear. Among the older pieces was a 1950s-era transmitter owned by rocker Joe



Bruce Godley Littlefield and his sister Janice Taylor are grandchildren of Paul Godley, 2ZE, who was at the Ardrossan, Scotland, receiving station in 1921.

Walsh, WB6ACU, of the Eagles.

The antennas were simple dipoles.

With about a dozen operators active, the special event logged nearly 525 contacts, more than 100 of them on AM, through conditions that were only fair.

To highlight the historical nature of the occasion, Godley's grandchildren Bruce Godley Littlefield and his sister, Janice Taylor, visited, and Littlefield brought his grandfather's complete log books of the experiment, as well as numerous photos and letters from ARRL.

"We enjoyed the opportunity to reconnect the Godley history with that of ARRL and the Radio Club of America," Littlefield said afterward. Read [more](#).

Radio Amateurs Assist in Wake of Indonesian Earthquake

Radio amateurs provided emergency communication support during the response to a December 7 magnitude 6.5 earthquake in Indonesia's Aceh Province. The death toll was reported at 100, with nearly 300 injured. The IARU Region 3 Disaster Communications Committee's Dani Hidayat, YB2TJV, reported that it took 2 hours for the ham radio group from the Indonesian Amateur Radio Organization ([ORARI](#)), Aceh Region, to reach the earthquake zone.

A team led by Abdullah Ali, YB6AA, and Ismul Huda, YB6AG, and others supported emergency communications in the field at Pidie Jaya. Zainal Abidin, YC6FZ, was injured when his house collapsed, but his family was said to be safe; Huda took Abidin to the Banda Aceh Hospital for treatment. YB2TJV reported that 40 meters and 2 meters were used for emergency traffic. The quake flattened houses and buildings, caused infrastructure damage, and left large cracks in roads in the worst-affected districts of Pidie Jaya and Pidie.

Search-and-rescue teams checked the rubble of hundreds of structures, and displaced residents took shelter in a makeshift refugee camp. -- *Thanks to Jim Linton, VK3PC, chairman, IARU Region 3 Disaster Communications Committee*

ARRL Celebrates 20th Anniversary, Plans for Future of Amateur

Radio in Human Spaceflight

ARRL-International delegates celebrated 20 years of Amateur Radio on the International Space Station ([ARRL](#)) when they met November 15-18 at the International Space Center Conference Facility in Houston, Texas, to continue planning for the years ahead. More than 50 delegates and guests from Russia, Japan, Italy, Germany, the UK, and North America took part, and teleconferencing let individuals unable to attend in person to join the proceedings. An international group interested in installing and operating an Amateur Radio station on the ISS first met in November 1996 at Johnson Space Center, and ARRL was born as a result of that gathering.

"The international partners celebrated the dedication and contributions of volunteers who have sustained it over the challenges of the past 20 years," said ARRL Education Services Manager Debra Johnson, K1DMJ, who attended on behalf of ARRL. "It was clear that the vision to make the excitement of space exploration accessible to students and the challenge of participating in space activities through Amateur Radio is still very much alive." Rosalie White, K1STO, also represented ARRL at the gathering.

Hardware sessions discussed finalizing designs for the Kenwood TM-D710GA dual-band radio and interoperable radio system, which includes a new power supply. Participants also heard a review of educational outcomes. Ronny Risinger,

KC5EES, a government teacher at Language Arts and Sciences Academy in Austin, Texas, discussed classroom integration of ham radio and student outcomes. Delegates also saw a demonstration of a standardized HamTV ground receiver constructed by Ciaran Morgan, M0XTD.



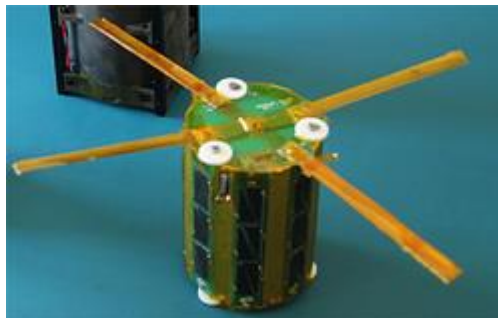
More than 50 delegates from ARISS-participating countries attended the November ARISS-International meeting. [Dave Jordan, AA4KN, photo]

"A vision of Amateur Radio in space exploration beyond the ISS was also discussed and action taken to develop a position statement about the program's intention to be involved in future journeys into space," Johnson recounted. "This position statement will be used as a basis for discussions with key industry leaders involved in projects in development for the next journeys to the Moon and to Mars."

Contributions to ARISS are welcome via the [ARISS](#) website (click on the "Donate to the ARISS Annual Fund" button) or via the [AMSAT](#) website (click on the "ARISS Donate" button). Read [more](#). -- *Thanks to ARISS via AMSAT News Service for some information*

Middle School Students' "TubeSat" Set for ISS Deployment; Other Launches Pending

The cargo ship carrying the Tancredo-1 "TubeSat" -- so called because of its cylindrical form factor -- launched on schedule from Japan on December 9. Built by 10- to 14-year-old middle schoolers in Brazil, Tancredo-1 carries an Amateur Radio payload. Tancredo-1 went into space inside the TuPOD TubeSat deployer, which is expected to be ejected into space from the ISS on December 19 by the JEM Small Satellite Orbital Deployer (J-SSOD). It will, in turn, eject Tancredo-1 into orbit on December 21. Once in space, Tancredo-1 should start transmitting telemetry.



The Tancredo-1 TubeSat.

Tancredo-1 is the first satellite of the [UbatubaSat](#) Project, a STEM initiative at Tancredo Neves Public School in Ubatuba, São Paulo, Brazil. The project is supported by the Brazilian Institute for Space Research and the Brazilian Space Agency. Tancredo-1 will initially have the same orbit as the ISS. The UbatubaSat project team and AMSAT-BR has asked for

reception reports. Tancredo-1 will transmit on 437.200 MHz using 1,200 bps AFSK AX.25. [Submit](#) reports via e-mail. According to information filed with the IARU Satellite Coordinator, Tancredo-1 has an onboard voice recorder that will transmit a message chosen through a competition among students from schools in



Young students learn about satellite assembly in the Brazilian Institute for Space Research lab.

Ubatuba.

The December 9 launch also carried Turkey's UBAKUSAT CubeSat. Equipped with a 145/435 MHz (V/U) SSB/CW Amateur Radio transponder and a CW beacon, UBAKUSAT will be deployed from the ISS next year. The satellite is being developed by Istanbul Technical University's Space Systems Design and Test Lab (SSDTL) along with the Turkish Amateur Satellite Technologies Organization ([TAMSAT](#)) and other entities, including the Ministry of Transportation, Communication and Maritime, in collaboration with the Japanese government.

On December 26, the China Center for Aerospace Science and Technology's BY70-1 satellite is expected to launch from Jiuquan Satellite Launch

Center into a 530-kilometer Sun-synchronous orbit. The 3-axis stabilized 2U CubeSat will carry a Mode V/U FM transponder, with an uplink on 145.920 MHz, and a downlink on 436.200 MHz

China's CAMSAT is reported to be working closely with a Beijing government aerospace contractor to build two microsatellites with Amateur Radio linear transponders -- CAS-4A and CAS-4B. Each spacecraft will carry a 70-centimeter/2-meter (U/V) 100 mW SSB/CW linear transponder, a 2-meter CW 50 mW telemetry beacon, and an AX.25 4.8 kbps GMSK 100 mW telemetry downlink. The transponders will have the same technical characteristics, but will employ different frequencies for their 70-centimeter uplinks and 2-meter downlinks. Launch is anticipated in late March. -- *Thanks to AMSAT News Service, IARU*

In Brief...

ARRL Rookie Roundup CW is Sunday, December 18: The 2016 CW [Rookie Roundup](#) is right around the corner on Sunday, December 18. Rookies can take up their Morse keys (or keyboards) and "pound some brass" in pursuit of Rookies and Non-rookies alike. Rookies -- anyone licensed for 3 years or less -- get on the air and call "CQ RR," so other participants can find them. Grizzled CW veterans call "CQ R" (CQ Rookies). Veteran operators are encouraged to invite new hams to use their stations and give CW a try, or to invite several newbies over and have a multiop. This is also great practice for Straight Key Night on New Year's Eve, so limber up those sending skills

and help to introduce the joys of CW to a new generation of hams! This also an excellent opportunity to try out contesting in an event designed for newcomers. Rookie entrants are encouraged to read "[HF Contesting - Good Practices, Interpretations, and Suggestions](#)." To register teams or submit scores, visit the [ARRL Rookie Roundup Contests](#) web page.

Next Kids Day is Saturday, January 7: The first Saturday in January is Kids Day -- the time to get youngsters on the air to share in the joy and fun that Amateur Radio can provide. Kids Day gets under way on Saturday, January 7, at 1800 UTC and concludes at 2359 UTC. Sponsored by the Boring (Oregon) Amateur Radio Club, this event has a simple exchange, suitable for younger operators: First name, age, location, and favorite color. After that, the contact can be as long or as short as each participant prefers. Kids Day is the perfect opportunity to open your shack door and invite kids over to see what Amateur Radio has to offer. [Details](#) are on the ARRL website.

60 Meter News from Europe and Elsewhere: The 60 Meter DX Group reports that Swedish Post and Telecom is issuing temporary (6-month) "experimental" licenses for access to 5,351.5-5,366.5 kHz, replacing four channels, 5,310, 5,320, 5,380, and 5,390 kHz. There is a fee. The WRC-15 recommendations regarding 5 MHz have not yet been implemented, but that may happen by January 2018, when the next national band plan is released. In the interim,

apparently anyone, even non-hams, can apply for an experimental license. Sweden's experimental band permits 15 W EIRP. In Denmark, radio amateurs now have "VFO access" to 5,250-5,450 kHz, all modes, at a maximum power of 1 kW at the antenna feed point. In Finland, radio amateurs gained access on December 9 to 5,351.5 to 5,366.5 kHz, with 15 W EIRP. Previously only club stations could obtain special permission to use seven 5-MHz channels with a maximum power of 50 W on USB. Valid special club licenses will continue in effect until the end of the license term. Switzerland's USKA has [announced](#) that 5,351.5 to 5,366.5 kHz will become available on January 1, 2017, with 15 W EIRP. From Dominica, Walter Aebi, HB9WTA, is active until February 2017 as J79WTA. Luxembourg, Latvia, Belarus, and Andorra recently announced Amateur Radio access -- or revisions to amateur access -- to 60 meters. -- *Thanks to [The Daily DX](#) and the 5 MHz Newsletter*

Dave Kalter Youth DX Adventure Offering Complete Ham Station to Essay Contest Winner: The Dave Kalter Youth DX Adventure (YDXA) has announced an exciting [essay competition](#) for young radio amateurs. Due to the generosity of the 2016 raffle winner Paul Ewing, N6PSE, and the co-founders of the YDXA, the winner of the essay contest will receive a complete Amateur Radio station. The prize includes an Alinco SR8T HF, a 12 V, 30 A power supply (Jetstream or equivalent), vertical antenna (Jetstream JTV680 or

equivalent), and 100 feet of coax feed line fitted with PL-259 connectors. Eligibility is limited to Technician class or higher US licensees 12 to 18 years old, residing in the 48 contiguous US states. Entrants are to submit an essay of up to 500 words describing their involvement in, personal future plans for, and importance of Amateur Radio. All entries must be postmarked (or system dated, in the case of e-mail entries) by December 23, 2016. The winner will be announced no later than January 31, 2017. Entrants should adhere to all contest [rules](#).

The K7RA Solar Update

Tad Cook, K7RA, Seattle, reports: Average daily solar indices over the past week were lower than the previous 7 days, with the average daily sunspot number declining from 40.9 to 13, and the average daily solar flux dropping by 10 points from 82.2 to 72.2.

Geomagnetic indicators were higher, with the average daily planetary A index rising from 4.9 to 13.3, and the mid-latitude A index from 3.4 to 9.

Predicted solar flux is 70 on December 15-17; 75 on December 18-20; 80 and 86 on December 21-22; 88 on December 23-27; 86 on December 28-29; 88 on December 30-January 1; 86 on January 2-3; 84 and 82 on January 4-5; 80 on January 6-7; 73 on January 8-9; 75 on January 10-14; 82 on January 15-16; 86 on January 17-18; 88 on January 19-23, and 86 on January 24-25.

Predicted planetary A index is 5 on December 15-16; 8 on December 17-18; 15 on December 19-20; 25, 30, 12, 10, and 8 on December 21-25; 5 on December 26-January 1; 8, 10, 20, and 22 on January 2-5; 16 on January 6-7; 8 on January 8; 5 on January 9-12; 8 on January 13-14; 12, 16, 22, and 30 on January 15-18; 12, 10, and 8 on January 19-21, and 5 for the remainder of the 45-day forecast.

Sunspot numbers for December 8 through 14 were 14, 12, 0, 13, 13, 14, and 25, with a mean of 13. The 10.7-centimeter flux was 74.8, 72.9, 72.2, 71.4, 70.8, 71.2, and 72.4, with a mean of 72.2. Estimated planetary A indices were 23, 25, 16, 15, 6, 4, and 4, with a mean of 13.3. Estimated mid-latitude A indices were 14, 18, 11, 11, 5, 2, and 2, with a mean of 9.

[Send](#) me your reports or observations, especially from the ARRL 10 Meter Contest.

Upcoming ARRL Contests:

- December 16 -- AGB-Party Contest (CW, phone)
- December 16-17 -- Russian 160-Meter Contest (CW, phone)
- December 17 -- Feld Hell Sprint
- December 17 -- OK DX RTTY Contest
- December 17 -- RAC Winter Contest (CW, phone)
- December 17-18 -- Croatian CW Contest
- December 17-18 -- Stew Perry Topband Challenge (CW)
- **December 18 -- [ARRL Rookie Roundup \(CW\)](#)**
- December 19 -- Run for the Bacon QRP Contest (CW)
- December 22 -- NAQCC CW Sprint

See the [ARRL Contest Calendar](#) for more information. For in-depth reporting on Amateur Radio contesting, subscribe to [The ARRL Contest Update](#) via your ARRL member profile e-mail preferences.

Upcoming ARRL Section, State, and Division Conventions

- January 8 -- [New York City/Long Island Section Convention](#), Bethpage, New York
- January 14 -- [TechFest 2017 Convention](#), Lawrenceville, Georgia
- January 20-21 -- [North Texas Section Convention](#), Forest Hill, Texas
- January 21 -- [Georgia ARES Convention](#), Forsyth, Georgia
- January 22-28 -- [QuartzFest Convention](#), Quartzsite, Arizona
- January 27-28 -- [Mississippi State Convention](#), Jackson, Mississippi
- January 27-29 -- [Puerto Rico State Convention](#), Hatillo, Puerto Rico
- February 3-4 -- [Southern Florida Section Convention](#), Ft. Lauderdale, Florida
- February 4 -- [South Carolina State Convention](#), North Charleston, South Carolina
- February 4 -- [Virginia State Convention](#), Richmond, Virginia
- February 10-12 -- [Southeastern Division Convention](#) (HamCation), Orlando, Florida

- February 17-18 -- [Arizona Section Convention](#), Yuma, Arizona
- February 18 -- [Arkansas Section Convention](#), Hoxie, Arkansas
- February 25 -- [West Central Florida Section Technical Conference](#), Sarasota, Florida
- February 25 -- 2017 [New Mexico Tech Fest](#), Albuquerque, New Mexico

Find conventions and hamfests [in your area](#).