Sidebands

The Newsletter of the EAST GREENBUSH AMATEUR RADIO ASSOCIATION

W2EGB

November 2016

President - Tom Scorsone, KC2FCP
Vice-President - Ridge Macdonald, KB2HWL
Secretary - Russ Greenman, WB2LXC
Treasurer & Newsletter Editor - Bryan Jackson, W2RBJ

The Ultimate QSO: The Milky Way and Beyond

By Bryan Jackson, W2RBJ

Imagine having an antenna that is 82 feet wide and weighs 280 tons. Now imagine having 27 of them stretched across nearly 23 miles and all working together to provide the ability to receive radio signals from billions of miles away. Suddenly, those big beam antennas used by hams don't seem so big anymore.

But travel along Route 60 in the New Mexico desert and that's just what you'll find at the Karl G. Jansky Very Large Array (VLA) National Radio Astronomy Observatory. Astronomers using the VLA have made key observations of black holes and protoplanetary disks around young stars, discovered magnetic filaments and traced complex gas motions at the Milky Way's center, probed the Universe's cosmological parameters, and provided new knowledge about the physical mechanisms that produce radio emissions.

On a recent trip to the Southwest, I had the chance to visit the VLA site and learn about the workings of this amazing piece of radio equipment. The antennas are placed in four standard "Y" configurations, with separations ranging from two-thirds of a mile to just over 22 miles. The 27 antennas are combined electronically to act as one giant receiving antenna.

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A Silent Key Lives on Through Equipment Donation to EGARA

The family of silent key Howard P. Caudle, W2RSU, will keep his spirit alive through the generous donation of his collection of vintage amateur radio equipment to the club. "It will be used to further the educational efforts of EGARA to promote the science of amateur radio," said Steve VanSickle, WB2HPR, who thanked his family on behalf of the club.

Mr. Caudle, who passed away in 2005 at the age of 92, was a self-taught optical engineer at Kodak in Rochester, New York. His inventions included gun sights for tanks during WW II and he held numerous patents. He was especially proud of his work on the camera for the lunar orbiter that took pictures of the moon's surface.

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In This Issue

Save the Date! Next EGARA Monthly Meeting is November 9th

Amateur Radio Volunteers Mustered in Response to Hurricane Matthew

After the longest activation in its more than 50-year history, the Hurricane Watch Net (HWN) secured operations for Hurricane Matthew on October 9. HWN Manager Bobby Graves, KB5HAV, reported that the net was in continuous operation for 6 days, 7 hours, gathering real-time on-ground weather data as the storm passed through the Caribbean and up along the US Eastern Seaboard. The net passed the data along to WX4NHC at the National Hurricane Center (NHC). Various Amateur Radio Emergency Service (ARES) nets also activated along the East Coast. The first major hurricane of the 2016 Atlantic hurricane season and, at one point, a Category 5 storm, Matthew was later downgraded to a post-tropical cyclone as it headed out into the Atlantic.

Amateur radio operators play a special role during hurricane season at the National Hurricane Center in west Miami-Dade.

"Many have perished in Haiti and Cuba as a result of Matthew, and the death-toll rises still," Graves noted. "Many residents in the Bahamas and the US East Coast states of Florida, Georgia, South Carolina, and North Carolina felt the impact of Matthew as well." More than 30 died in the US. FEMA reported that power remained out for thousands of Florida, Georgia, South Carolina, and North Carolina residents through mid-October Cell service also was affected.

The VoIP SKYWARN/Hurricane Net (VoIPWX) attracted a number of visitors, according to net managers. "On board Saturday afternoon, in addition to WX4NHC at the National Hurricane Center, stations representing a number of FEMA regional offices and the National Response Coordination Center monitored the net for actionable intelligence to be used to plan recovery operations," said net Public Affairs Officer Lloyd Colston, KC5FM. The net also activated on October 3.

The net said its Georgia Reflector was linked to the WX-Talk conference, so net managers could help to relay reports to local National Weather Service offices on NWSchat and the NHC.

According to Chief of Operations Dennis Dura, K2DCD, the net established a link up the East Coast into North Carolina and continued to monitor for damage assessment in areas the hurricane had already passed. The net supported the NHC on the WX-Talk Conference, Node #7203 on EchoLink.

The Salvation Army Team Emergency Network (SATERN) on 14.265 MHz also was active for Matthew, handling outbound emergency, priority, or health-and-welfare traffic from hurricane-affected areas.

Among activities in Georgia, ARES District Emergency Coordinator and MARS member Tom Holcomb, K5AES, reported that WX4GMA, the Georgia Emergency Management Agency ARES team station, was activated on October 7, running 12-hour shifts. Operation was on HF as well as on D-STAR and EchoLink.

HF message traffic included shelter updates from coastal counties and periodic NHC weather updates via WX4NHC, which were passed along to the GEMA director. Coastal county-related traffic and weather updates also were handled via D-STAR. WinLink was used to pass periodic status updates from the Georgia State Defense Force, a volunteer component of the Georgia Department of Defense. The EchoLink Georgia Conference node provided updates on storm-related conditions. On October 6, ARES and Army MARS personnel were called on to provide technical assistance to, and an operator for, a FEMA SHARES station in Atlanta.

Among activities in South Carolina, ARES volunteers staffed evacuation shelters, with radio amateurs coming from outside the affected areas to help. "Overall, I believe the radio operators that were available for the event did an outstanding job and I am proud to know them," said South Carolina Section Emergency Coordinator Joe Markey, AJ4QM.

The Hurricane Watch Net activated again for several hours on October 13 for Hurricane Nicole, after a hurricane warning went into effect for Bermuda. “While we do hope this is the last hurricane for this season, let us not forget we are still in Hurricane Season,” the HWN’s Graves said. The Atlantic Hurricane Season ends on November 1.

EGARA October Board Meeting Minutes

Board of Director's Meeting - October 10, 2016

- President, Tommy Scorsone called the meeting to order at 7:30pm;
- Members in attendance included: President Tommy Scorsone – KC2FCP, Steve VanSickle – WB2HPR, Joe Soulier -KD2BSV, Secretary Russ Greenman – WB2LXC, Treasurer Bryan Jackson – W2RBJ and Director Dave Gillette, KC2RPU
- VE Exam sessions – Tommy Scorsone raised several points regarding the EGARA sponsored VE sessions and the need for more club VEs to participate in the three sessions held annually in January, May and October. It was also recommeneded that we should hold a refresher course for our VEs on proper exam proceedures. Tommy will reserve room for the next exam and notify ARRL;
- Run For Literacy – Tommy Scorsone suggested using the .11 repeater (with a 94.8 pl) that is located at Hudson Valley Community College;
- Repeater Maintenance / repair – Tommy expressed the need to have other members be knowledgable and readily available to do timely repairs and maintenance on EGARA's repeater systems.
- 147.27 Repeater – Tommy Scorsone stated that soon the CW ID will be coming off of the .27 repeater and replaced with a voice ID. He also stated that in the long term – the computer equipment - that supports Echo Link will be moved to Tommy's house for easier maintenance.
- Treasurer's report - Bryan Jackson presented his report showing that the club is in a good financial state.
- Christmas / Holiday Party Radio Raffle – When Tommy mentioned that we would buy a radio for raffle, Joe Soulier offered to donate the unused radio that he won last year. There were no objections and Tommy Scorsone acknowledged his generosity;
- Hamfest – Steve VanSickle and Tommy stated that the location at the Phillips Road Firehouse has been reserved for our May 13th 2017 Hamfest. A discussion followed that focused on enhancing the food sold as part of the Hamfest fundraiser and the pricing strategy for the next event;

Respectfully submitted,
Russ Greenman - Secretary

October EGARA Meeting Brings Mini-Hamfest

What's better than EGARA's regular Hamfest? Easy! Its Mini-Hamfest!

VLA: The Ultimate QSO

The antenna configuration is changed approximately once every four months by using special transporter vehicles to move the antennas along dual sets of railroad tracks across the site, placing them on concrete pads distributed along the arms of the "Y".

Radio astronomy depends upon receiving extremely weak signals from celestial objects. The signals detected by the VLA are millions or even billions of times weaker than those used by regular communication systems. For example, a 100-milliwatt transmitter using an omni-directional antenna on the moon would produce a signal on Earth that would be considered quite strong by radio astronomers.

The author stands at the base of one of the 27 VLA antennas. Each dish has a diameter of 82 feet and weighs 230 tons.

The VLA can receive celestial radio waves in one of eight different frequency bands, each using discrete receivers: 1) 72-74 MHz, 2) 300-340 MHz, 3) 1270-1730 MHz, 4) 4300-5100 MHz, 5) 7600-9000 MHz, 6)14300-15700 MHz, 7) 21700-24500 MHz, and 8) 40000-50000 MHz. The VLA receiving system can switch among these frequency bands in about 20 seconds, making it a very powerful instrument for observing a given celestial source at many different frequencies nearly simultaneously.

Using radio wavelengths to "see" the sky, the VLA produces images of the universe. Both the pointing and the data collection of the antennas are controlled by computers in real time. Initial processing of the collected data is done on-site, with calibration, post-processing and image production later.

Location, Location, Location

Before building any radio telescope, location is the primary concern. Because cosmic radio waves are billions of times fainter than man-made radio waves, radio telescopes must be placed where they can collect the most cosmic radio waves without any radio interference from man or nature.

The site of the VLA is on the Plains of San Agustin in New Mexico, northwest of Socorro, and is a flat stretch of desert with no major cities in sight. The Plains are ringed by a natural fortress of rock that keeps out any traveling radio pollution from cities even hundreds of miles away.

The desert climate of the San Agustin Plain is also critical to the success of the VLA. Humidity is a real problem in radio astronomy, because water molecules distort the radio waves passing through them. They also give off their own radio waves that pollute data in certain frequencies.

Construction of the VLA system began in 1976 and was completed in 1980. Recently, the entire system was updated with new electronics that improved its sensitivity by up to 8,000 times over its previous capabilities.

The VLA is a multi-purpose instrument designed to allow investigations of many astronomical objects, including radio galaxies, quasars, pulsars, supernova remnants, gamma ray bursts, radio-emitting stars, the sun and planets, astrophysical masers, black holes, and the hydrogen gas that constitutes a large portion of the Milky Way galaxy as well as external galaxies. In 1989 the VLA was used to receive radio communications from the Voyager 2 spacecraft as it flew by Neptune.

Despite depictions in popular culture such as the movie ***Contact***, the VLA is not used to assist in the search for extra-terrestrial intelligence.

Join the Nightly Ragchew

EGARA members are invited to join the club's 6 meter ragchew every weeknight at 6 pm on 50.125 Mhz.

It's a great way to catch up on club news and events, as well as keeping in touch with other club members. Tune in!

EGARA October VE Session Produces Success for Five

EGARA's third VE session of the year saw on October 8th resulted in one new Tech and four new General licensees. The session was held at the East Greenbush Community Library.

The October 8th VE session saw all five applicants either upgrade or get their first amateur license.

A total of six EGARA members with VE certifications administered the tests. The team included:

- Tom Scoresone, KC2FCP
- Steve VanSickle, WB2HPR
- Bob Stark, KA2EXK
- Dave Williams, N2VLQ
- Steve "Doc" Sconfienza, NC2S
- Bryan Jackson, W2RBJ

EGARA's next scheduled exam session will be held on January 7th at the East Greenbush Library.

Dave Williams, N2VLQ and Bob Stark, KA2EXK check test scores during the VE session.

Silent Key Lives On

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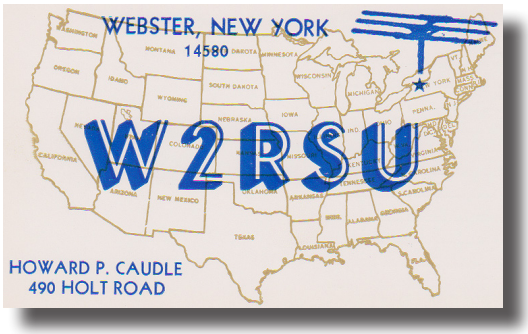
These lunar pictures were used to pick a landing spot for the first astronauts on the moon. His four daughters are proud of his many scientific contributions in the fields of optics, printing and photography.

Mr. Caudle first became involved in ham radio in the 1930s, when most equipment was home built. Later, like many hams of his era, he built a number of Heathkits.

Howard Caudle, W2RSU, in his shack at his home in Webster, New York

At his home in Webster, New York, he erected a rhombic antenna that allowed him to speak with ham operators all over the world, including researchers in Antarctica.



Over the years, he collected an impressive array of QSL cards that documented his many international and domestic contacts. He enjoyed being an active member of the ham community and was a member of the Rochester Amateur Radio Association.

The EGARA gratefully recognizes Mr. Caudle's contributions to ham radio and the donation of his amateur radio equipment to the club by his family.

EGARA President Tom Scoresone checks out a Kenwood TS 930 transceiver graciously donated to the club by the family of silent key Howard Caudle.

On the Beam
News & Notes

ARRL: Current Rules Holding Hams Back from Adopting State-of-the-Art Technology

In comments filed on October 12 with the FCC, ARRL reiterated its case that the FCC should impose a 2.8 kHz limit on symbol rate for digital modes, arguing that its approach is both balanced and necessary. ARRL had asked the FCC to change the rules to delete the symbol rate limits in Section 97.307(f) and replace them with a maximum bandwidth for data emissions of 2.8 kHz on amateur frequencies below 29.7 MHz. In a July Notice of Proposed Rule Making (NPRM) in WT Docket 16-239, the FCC proposed to eliminate the current baud rate limitations for data emissions, consistent with ARRL's Petition, but it declined to propose a bandwidth limitation for data emissions in the MF and HF bands to replace the baud rate limitations.

ARRL told the FCC in its comments that the current HF symbol rate "speed limit" reflects 1980s technology and has no place in an experimental radio service in which modern protocols could be efficiently deployed in crowded RTTY/data subbands.

"The symbol rate limit was created in order to maximize the efficient use and reuse of that crowded, shared spectrum, but the assumptions made at the time are no longer valid," ARRL said, "and the rules now prohibit radio amateurs from utilizing state-of-the-art technology, thus precluding or substantially inhibiting any meaningful contribution to the advancement of the radio art in this area." ARRL said earlier assumptions are no longer valid mainly because there is no correlation between the data rate and the occupied bandwidth in the rules now.

The League said present rules in the HF data subbands promote inefficiency, allowing data transmissions of unlimited bandwidth as long as the symbol rate is sufficiently low, and it stressed that there must be some limit on occupied bandwidth for HF data emissions.

"Eliminating the symbol rate limitations for data emissions and substituting a maximum authorized bandwidth would permit the utilization of all HF data transmission protocols presently legal in the Amateur Radio Service, as well as state-of-the-art protocols that fall within the authorized bandwidth," the League said. The deadline to file reply comments in the proceeding -- that is responses to comments already filed -- is November 10.

Antenna Fire Knocks Out Historic Long Wave Station

A fire in early October at the SAQ Alexanderson alternator long-wave station is under investigation following an antenna fire. The historic site is owned and operated by the Grimeton World Heritage Foundation in Grimeton, Sweden. The fire, attributed to antenna arcing, was quickly extinguished, and no injuries occurred. The Foundation said that determining the extent of damage and completing repairs could take a while.

“There is a risk that the incident will affect the planned CW transmissions with the long-wave transmitter SAQ for some time to come,” a Foundation announcement said. The fire kept SAQ off the air for a scheduled UN Day transmission on October 24. SAQ, which operates on 17.2 kHz, also typically schedules transmissions on Christmas Eve and other occasions.

Dating from the early 1900s, the Alexanderson alternator — essentially an ac generator run at extremely high speed — can put out 200 kW but typically is operated at less than half that power level. Once providing reliable transatlantic communication, it is now a museum piece and only put on the air on special occasions. It operated in regular service until 1996.

Should U.S. ham tests be given abroad?

By Dan Romanchik, KB6NU

A couple of weeks ago, I received an e-mail from a reader who wanted my opinion about a thread on the HamRadioHelpGroup mailing list. The e-mail that started the discussion was a message from an American living in Italy who wanted to take the Technician Class exam. In her e-mail, she told of her troubles finding a test session, and then when she did find one, what she perceived as “irregularities” in the testing process. Reading the thread was a little disconcerting, and I blogged about this issue (http://www.kb6nu.com/u-s-amateur-radio-license-exams-given-outside-u-s/).

I understand why foreign national go to the trouble of taking the U.S. license exam. Some of them even buy my study guides. About a year ago, for example, I swapped some e-mail with a guy from Malaysia about why he purchased my study guide and why he wanted a U.S. license. He said that it was because a neighboring country offered reciprocal operating privileges to U.S. licensees, but not Malaysian licensees! He mentioned that he tested for the license in Thailand.

Basically, my Malaysian friend was using the U.S. licensing process to circumvent the Malaysian licensing process. Australians seem to do this, too. Apparently, according to one of the VKs who commented on the thread, getting a U.S. Tech license is easier than testing for an Australian Foundation license. So, some Australians get a U.S. Tech license first, then get the Australian government to issue them a VK Foundation license based on the reciprocal operating agreement between the U.S. and Australia.

Another reason that some outside the U.S. obtain U.S. amateur radio licenses is the challenge. That’s the reason Martin Butler, M0MRB/W9ICQ, of ICQPodcast fame, gave when I spoke to him about this recently.

Are these reasons "good enough" to continue this program of licensing non-U.S. citizens? My first reaction was that no, it's not good enough, and I questioned whether or not the ARRL VEC should sanction non-U.S. VEs and whether or not the FCC should even allow testing outside of the United States.

I didn't see the need for conducting these test sessions or the desirability (to the U.S.) of licensing foreign nationals. I reasoned that not only was there a greater possibility of test fraud, this program could lead to foreign authorities claiming that the U.S. was meddling in their affairs.

This post garnered a lot of comments. Several of them took me to task for voicing this opinion and were in favor keeping the current licensing program in place. There were a variety of reasons.

One of the reasons in favor of using the U.S. licensing process is that in many countries, amateur radio license exam sessions are not very frequent. Another is that they often are quite expensive. This creates an artificial barrier to getting an amateur radio license. Using the U.S. licensing system breaks through this barrier and allows many more to enjoy amateur radio.

Of course, for everything to be on the up and up, the foreign authorities would have to condone the use of U.S. license tests. Apparently, this is the case in Thailand and Australia. I don't know about Italy, but I'm guessing that the authorities there don't really care about Italians obtaining U.S. licenses.

Perhaps the best comment came from Thida, HS1ASC/KH6ASC. He noted that the tests in Thailand were administered very strictly, and says, "The U.S. may lose some callsigns, but what the U.S. and U.S. hams get from us is goodwill, very positive feeling. Everyone who gets U.S. license is so proud, and others look at them respectfully." Since Part 97.1(e) lists as one of the purposes of amateur radio, "Continuation and extension of the amateur's unique ability to enhance international goodwill," I'm now all in favor of offering U.S. ham tests abroad.

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Dan, KB6NU, is the author of the "No Nonsense" amateur radio license study guides, and blogs about amateur radio at KB6NU.Com, and you can contact him by e-mailing cwgeek@kb6nu.com. When he's not pondering the vagaries of the U.S. licensing system, you'll find him working CW on the HF bands.

CALENDAR

November 9, 2016 - EGARA Monthly Membership Meeting - Masonic Temple, East Greenbush @ 7 pm;

December 11, 2016 -VE Exam Session - Capital Area Radio Enthusiasts, Shaker Road Fire Department 550 Albany Shaker Rd. Time: 11:00 AM (Walk-ins allowed)

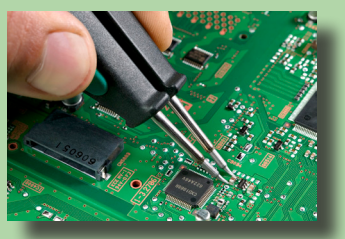
December 14, 2016 - EGARA Holiday Party, Moscatiello's Restaurant at 99 North Greenbush Road (Route 4) in Troy.

January 7, 2017 - EGARA VE Session - East Greenbush Library at 10 am.

May 13, 2017 - EGARA Hamfest 2017 - East Greenbush Fire Deptartment

Ham It Up

Solder Seminar Set for November EGARA Meeting



Soldering may seem like a pretty simple thing to do, but there's a right way and a wrong way. And a mistake can make toast out of an expensive piece of equipment. Come to the November meeting of the EGARA for some helpful tips on how to make your solder joints perfect every time!

For Sale

- ***Yaesu FT 950*** -- $ 800.00;
- ***Icom 746*** -- $ 600.00;
- ***Heathkit DX 60*** -- $ 75.00;

For above items, contact Tom Scorsone by e-mail at: ***kc2fcp@nycap.rr.com***.

- ***Vibroplex "Original" bug*** - ca. 1963 – Like "new" condition – Chrome works over gray wrinkle base - $170;
- ***Ameritron Model Al-811H*** – Linear amplifier uses (4) 811's – with manual – great condition - $700 obo;
- ***Kenwood Ts-480 Hf Rig*** – 200 w PEP output, w/manual, cable, and microphone – like new - $800 obo;
- ***Used 6146'S*** – various brands – tested - $7 each;

For above items, contact: Steve WB2HPR at ***326-0902***.

For Free

- ***Various ham radio books.*** See Steve VanSickle at the next EGARA membership meeting.

Looking to Buy, Sell or Swap?
Send your info to W2RBJ@outlook.com

The East Greenbush Amateur Radio Association

Organized in 1998, by Bert Bruins, N2FPJ, SK and Chris Linck, N2NEH, the East Greenbush Amateur Radio Association, an ARRL affiliate, is committed to providing emergency services, educational programs, and operating resources to the amateur radio operators and residents of the Capital Region of New York State. The club station is W2EGB. The club also has several VHF and UHF repeaters open to club members and the public.