SVARA Harmonic

A monthly publication of the
Saginaw Valley Amateur Radio Association

November 2020

- **SVARA Meeting Presentations**
  We are always looking for ideas for meeting presentations. If you have an idea for a presentation or would like to do a presentation after one of our meetings, please contact Mike KD8MMH or any of the board members with your idea.
- **SVARA MONDAY NIGHT 2 METER NET**
  Every Monday at 9:00 PM local time, on the Saginaw repeater – K8DAC 147.24, with a 103.5 PL tone or via EchoLink. All are welcome and encouraged to join in.

Club Meeting Time and Place:
Due to current circumstances club meetings will be held at Harry Brown Airport. The club will meet at the Pavilion at 7 PM. Changes are posted to the club website.

Club Meeting Dates:
All dates are Fridays: January 1, February 7, March 6, April 3, May 1, June 5, August 7, September 4, October 2, November 6, December 4

Club Breakfast Dates (Check club website for location):
The club breakfast is **on hold** until further notice.
All dates are Saturdays. January 2, February 8, March 7, April 4, May 2, June 6, August 8, September 5, October 3, November 7, December 5

Board Meeting Dates (at Biggby Coffee, 3085 Bay Rd.):
Board meetings are **on hold** until further notice. Changes are posted on the club website. All dates are Wednesdays. January 15, February 19, March 18, April 15, May 13, June 17, July 15, August 19, September 16, October 14, November 18, December 16

ARES Members:

Ares members please visit the Ares website http://ares.saginawradio.com/scares_training.htm for training schedule information. Ares training are held the last Thursday of the month.

Weekly Nets Please join us. All licensed operators are welcome.

District 3 Net
145.310
Sunday 6:30 PM

SVARA (Saginaw)
147.240
Monday 9:00 PM

MARC (Midland)
147.000
Thursday 9:00 PM

D3 Digital Training Net
(Olivia 8/500) *Seasonal*
3.586 MHz USB
Sunday 8:00 PM

BAARC (Bay City)
145.310
Tuesday 9:00 PM

MI Digital Traffic Net
(Olivia 8/500)
3.583 MHz USB
Tues, Thurs, Sat 8:00 PM

Saginaw Valley ARA meeting minutes for October 2, 2020

The meeting was called to order by Mike KD8MMH, who lead the pledge of allegiance with 5 members present.

Gordy KC8YVD, made a motion to accept last month's meeting minutes as published in the harmonic news and was seconded by Renee KE8MYJ. The motion passed.

The Treasurer was not present. There was no Treasurer's report.

There are no upcoming swaps.

There was one past event discussed, the ARES Training held September 24th on the Midland Flood from the EOC.

Upcoming events included the Scouts on the Air program, discussed by Bob N8YXR.

The Repeater Committee will meet and discuss equipment purchases.

Ron KC8YVF also discussed the upcoming Ares and County SET exercises on October 4, which is a repeater HT coverage test and October 10, which is a county to county simplex test.

Holidays in the Heart of the City was discussed. This event is most likely going to be cancelled this year due to the ongoing pandemic situation.

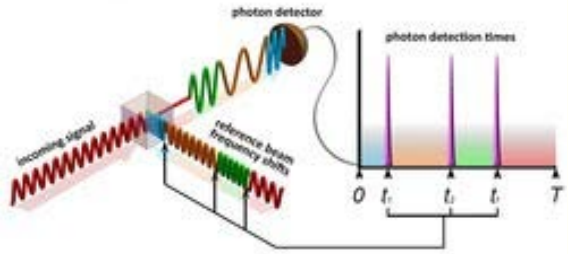
The motion to adjourn was made by Gordy KC8YVD, and seconded by Mike K8AVJ.

Respectfully submitted,
Mike Elias K8AVJ
Secretary

ARRL News

New NIST System Detects Ultra-Faint Signals Using Quantum Physics Principles

Researchers at the National Institute of Standards and Technology (NIST) have devised and demonstrated a system that could dramatically increase the performance of communication networks while enabling record-low error rates in detecting even the faintest of signals. This has the potential to cut the total amount of energy required for state-of-the-art networks by a factor of 10 to 100. The proof-of-principle system consists of a novel receiver and corresponding signal-processing technique, entirely based on the



The incoming signal (red, lower left) proceeds through a beam splitter to the photon detector, which has an attached time register (top right). The receiver sends the reference beam to the beam splitter to cancel the incoming pulse, so that no light is detected. The receiver uses exact times of photon detection. The combination of recorded detection times and the history of reference beam frequencies is used to find the frequency of the incoming signal.

properties of quantum physics and able to handle extremely weak signals with pulses that carry many bits of data.

"We built the communication test bed using off-the-shelf components to demonstrate that quantum-measurement-enabled communication can potentially be scaled up for widespread commercial use," said Ivan Burenkov, a physicist at the Joint Quantum Institute, a research partnership between NIST and the University of Maryland. Burenkov and his colleagues reported the results in *Physical Review X Quantum*.

"Our effort shows that quantum measurements offer valuable, heretofore unforeseen advantages for telecommunications leading to revolutionary improvements in channel bandwidth and energy efficiency," Burenkov added.

Modern communications systems work by converting information into a laser-generated stream of digital light pulses in which information is encoded -- in the form of changes to the properties of the light waves -- for transfer and then decoded when it reaches the receiver. The train of pulses grows fainter as it travels along transmission channels, and conventional electronic technology for receiving and decoding data has reached the limit of its ability to precisely detect the information in such attenuated signals.

The signal pulse can dwindle until it is as weak as a few photons -- or even less than one on average. At that point, inevitable random quantum fluctuations, called "shot noise," make accurate reception impossible by normal ("classical," as opposed to quantum) technology because the uncertainty caused by the noise makes up such a

large part of the diminished signal. As a result, existing systems must amplify the signals repeatedly along the transmission line, at considerable energy cost, keeping them strong enough to detect reliably.

The NIST team's system can eliminate the need for amplifiers because it can reliably process even extremely feeble signal pulses: "The total energy required to transmit one bit becomes a fundamental factor hindering the development of networks," said Sergey Polyakov, senior scientist on the NIST team. "The goal is to reduce the sum of energy required by lasers, amplifiers, detectors, and support equipment to reliably transmit information over longer distances."

ARRL Podcasts Schedule

The latest episode of the *On the Air* podcast (Episode 10) includes an interview with ARRL Lifelong Learning Manager Kris Bickell, K1BIC, about ARRL's new "Learning Network" webinars.

The latest edition of *Eclectic Tech* (Episode 20) features an interview with ARRL Emergency Preparedness Director Paul Gilbert, KE5ZW, about the future of amateur radio technology in public service, and will also cover a new power source that uses diamonds and nuclear waste.

The *On the Air* and *Eclectic Tech* podcasts are sponsored by Icom. Both podcasts are available on iTunes (iOS) and Stitcher (Android), as well as on Blubrry -- On the Air | Eclectic Tech.

Do you need help programming your HT? Come to the next meeting, bring your HT, any manuals you have, and we will do our best to help. Don't have a manual? We'll still give it a try.

2020 SVARA Officers

President Mike Doherty KD8MMH

Vice-President Brian Kleinfeld K8HY

Secretary Mike Elias K8AVJ

Treasurer Mike Linton N8XPS

Board Member Tom Schmidt N8EUI
Term expires 2020

Board Member Mary Paquette WB8LZA
Term expires 2021

Board Member Renee' Paquette KE8MYJ
Term expires 2022

2020 SVARA Appointments

Newsletter Editor
To subscribe or submit articles, please send requests to
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Ron Huss, KC8YVF 989-799-2679 kc8yvf@rhuss.cncfamily.com

Public Info Officer
Tom Schmidt N8EUI 989-270-8974 tschmidt50@charter.net

Repeater Committee
Ron Huss, KC8YVF
Dave Paquette, W8DW (Trustee)
Brian Kleinfeld, K8HY
Rick Schattilly, KC8VOA
Jeff Metiva, KB8SWR

SVARA Elmers

CW (Morse Code)	Dave Paquette, W8DW	w8dw@qsl.net
Contesting	Dave Paquette, W8DW	w8dw@qls.net
Hamnet/Meshnet	Mike Elias, K8AVJ	ke8avj@gmail.com

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