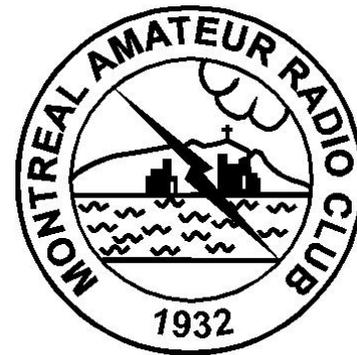


# marcOgram

Official Publication of The Montreal Amateur Radio Club Inc.  
Box 53047 - RPO Dorval, Dorval Quebec H9S 5W4



Volume 67, Number 6

March 2021

## NEXT MEETING

**Tuesday 30 March 2021 at 20:00 via ZOOM.**

**THIS MONTH:** Norm, VE2BQS, on Packet Radio, the very early days.

General meetings are being held via the Zoom platform. Below are the details you need to join the meeting. A rag-chew session starts at 19:30 with the formal meeting starting at 20:00.

Join Zoom Meeting: <https://zoom.us/j/92218952458?pwd=S0t0aytSMUZTUHVXNkY3SHpZOGxuUT09>

Meeting ID: 922 1895 2458 Passcode: 898003 Or by phone 438-809-7799 using the above meeting ID and passcode.

Important: Please use a headset or headphones and make sure to test your mic/camera ahead of the meeting.

We hope to see you there.

## FROM THE EDITOR'S DESK

Welcome to Sprint 2021! Let's hope this year turns out better than the last one, which was a loser on so many levels.

18 April 2021 is World Amateur Radio Day, commemorating the formation of the IARU, International Amateur Radio Union, 18 April 1925. Without the work of the IARU, amateur radio would not be as well represented on the global stage, and our range of permissible frequencies not as broad.

We are still holding our meetings by Zoom, but the future is looking a bit better as more of us get our vaccinations. Hopefully by summer, or early fall, we may be close enough to normalcy as possible. The effects of this pandemic will change us forever.

73 de Nora, VA2NH

- . . . -

## OTHER ITEMS WANTED

In April 1967, Roland Masse, VE2PX, and RAQI set up and operated Amateur Radio station VE2XPO from St. Helen's Island at the Montreal World's Fair, Expo-67. Their first contact was with W1AW. The station made more than 6000 contacts during the exhibition.

Jim, VE2VE, a teacher for the radio courses, is looking for a scan of the QSL card from VE2XPO as he wants to add it to the radio course text. If you have one, please send an image to [ve2ve@marc.ca](mailto:ve2ve@marc.ca).



The MARCogram is published nine times per year on the second to last Wednesday of September through June, excepting December by the Montreal Amateur Radio Club. Advertising and copy deadline is one week prior to publication.

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General Members	...	...	\$30.00
Family Members (per family)	...	...	\$35.00
Postal delivery of MARCogram	...	...	\$ 5.00

The membership year runs from September 1 to August 31. Memberships received on or after June 1 commence immediately and extend through the subsequent membership year - covering a period of up to fifteen months.

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The opinions expressed herein are, unless otherwise stated, solely those of the authors concerned, and not those of the Club, the Directors or members and do not represent the policy of the Club.

### Directors

President: Marc-André Gingras, VE2EVN .... [ve2evn@marc.ca](mailto:ve2evn@marc.ca)  
Vice-Pres: Leo Nikkinen, VE2SI ..... [ve2si@marc.ca](mailto:ve2si@marc.ca)  
Treasurer: Harrison Kyle, VE2HKW ..... [va2hk@kylenet.org](mailto:va2hk@kylenet.org)  
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George Hedrei, VE2NGH ..... [ve2ngh@marc.ca](mailto:ve2ngh@marc.ca)  
Eamon Egan, VE2EGN ..... [ve2egn@marc.ca](mailto:ve2egn@marc.ca)

Club Call Sign: VE2ARC

Club Website: <http://www.marc.ca>

### Repeaters

**VE2BG** 147.06 MHz (+)

Owned and operated by the Montreal Amateur Radio Club. **Currently OFF AIR**, looking for a new location..

**VE2RED** 147.27 MHz (+) 103.5

On the air from Ridgewood Ave. in Montreal; CTCSS tone of 103.5 Hz for access. Thanks to Claude Everton, the VE2RMP group and Metrocom for making this possible.

The repeaters are open to all amateurs.

### Meetings of the Board of Directors

Meetings of the Board of Directors are held on the first Tuesday of the month (Aug to June) at 19:30 on-line using the Zoom platform. The club no longer holds in-person board meetings. If you have questions, concerns or suggestions for the Board to discuss, please send an email to [ve2arc@marc.ca](mailto:ve2arc@marc.ca) for inclusion to the meeting agenda.

## Club Activities

### Monthly Meetings are by ZOOM

(last Tuesday of the month)

Mar 30 - Norm, VE2BQS, Packet Radio

Apr 27 - TBA.

May 25 - Show & Tell.

Every Wednesday, @ 20:00 (00:00Z), go to the net on VE2RED. See page 3.

### Radio Classes

A second class of our Basic level Course will be starting May 1st 2021, also held via Zoom, and will run until July. If you know of anyone interested in taking the course, please direct them to <https://marc.ca/course/> for more information. Online registration will start April 1st.

### MARC Hamfest

**The 2021 MARC flea market was cancelled.**

It will be back but we still need a good location. Any ideas? Please contact any of the board members.

**Ideas are welcome!**

Go to <http://marc.ca/fest/> for more information as it happens.

### Incoming QSL card service

As has been mentioned in previous MARCograms, we are resuming the club's service of having incoming QSL cards sent to the club for members to pick up at meetings. This is a service which we are offering to our members which both saves the individual members money as well as makes more efficient use of our collective resources.

If you would like to avail yourself of this service please send an e-mail to [qsl@marc.ca](mailto:qsl@marc.ca) and we will add you to the list of cards that the incoming bureau sends to the club and bring them to the monthly meetings.

## SolderSpot

Group build Power Supply Project - By Leo VE2SI

If you're interested and even if you've spoken with me before, please send an email to [VE2ARC@marc.ca](mailto:VE2ARC@marc.ca) and indicate your level of interest.

Participation is open to everyone and MARC membership is not a requirement. Due to COVID-19, SolderSpot is temporarily on hold. Other options are being considered.



## UPCOMING FLEAS/EVENTS

### 2021

**What:** NEAR-Fest XXIX

**Who:** New England Amateur Festival, Inc

**When:** **CANCELLED**

(Fri & Sat, 30 Apr & 1 May, 2021)

**Where:** Deerfield Fairgrounds  
Deerfield, NH

**What:** London Vintage Radio Club Flea Market

**Who:** London Vintage Radio Club

**When:** Tuesday, 8 Jun, 2021

**Where:** Guelph, ON

**What:** Carp 24th Annual Hamfest

**Who:** Ottawa Amateur Radio Club, Inc.

**When:** Saturday, 11 Sep, 2021

**Where:** Carp Agricultural Fair Grounds,  
Carp, ON

**What:** NEAR-Fest XXX

**Who:** New England Amateur Festival, Inc.

**When:** Fri & Sat, 12 & 13 Oct, 2021

**Where:** Deerfield Fairgrounds  
Deerfield, NH

### 2022

**What:** Iroquois ARC Fleamarket

**Who:** Iroquois Amateur Radio Club

**When:** Saturday, 2 Apr 2022

**Where:** Iroquois ON

Note from the editor.

Due to COVID -19, the list of hamfests and events is severely limited. Please check with the organizing authority before planning to attend as some may be cancelled.

## VE2RED TUESDAY NET REPORT

Any discrepancies, please inform Leo, VE2SI

Please join us every **Wednesday** evening at 20:00 local on VE2RED on 2m output frequency of 147.270 MHz (+600 kHz input offset) CTCSS tone of 103.5 Hz. Everyone is welcome.

We have a few Net operators hosting it, but we're always interested in adding to this team if you're interested. Send me an email if you would like to try out Net Operations for an evening.

Marc-Andre, VE2EVN

President - Montreal Amateur Radio Club

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**2021-02-17 Net commenced 20:00 local, 00:00Z**

Net control Leo, VE2ARC (VE2SI)

VE2BQS, Norm, Pierrefonds

VE2WRH, Wayne, Cote St. Luc

VE2EOT, Andrew

VA2LEQ, Lee

VE2KFC, Norm, St. Constant

VA2NH, Nora, St. Lazare

VA2CNE, Cedric, Dorval

VA2XS, Mike, Ville St-Laurent

VE2MRN, Marco, Lachine

VE2LJV, Sam, Dollard

VE2TSM, Mario, Rawdon

VE2MPD, Dave, Verdun

VE2HIT, Greg, Hampstead

21:25 Net closed.

14 check-ins.

Discussion: Sources for components, QSL card suppliers.

---

**2021-02-24 Net commenced 20:01 local, 00:01Z**

Net control Leo VE2ARC (VE2SI)

VE2LRZ, Erick, Cote St. Luc

VA2CNE, Cedric, Dorval

VE2GFY, Bob, Chateaugay

VE2WES, Sylvain, St. Gabriel de Brandon

VE2BAB, Mitch, Cote St. Luc

21:26 Net closed.

10 check-ins.

Discussion: Field Day, SOTA & similar operations, participation.

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**2021-03-03**

Net summary not available.

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**2021-03-10 Net commenced 20:00 local, 00:00Z**

Net control Leo VE2ARC (VE2SI)

VA2CNE, Cedric, Dorval

VE2MPD, Dave, Verdun

VE2KFC, Norm, St. Constant

(Continued on page 4)

(Continued from page 3)

VA2LEQ, Lee  
VE2LRZ, Erick, Cote St. Luc  
VE2MRN, Marco, Lachine  
VA2NH, Nora, St. Lazare  
VE2XHL, Jong  
VA2PDZ, Pat  
VE2GFY, Bob, Chateaugay  
VE2CCU, Jacques  
VE2WES, Sylvain, St. Gabriel de Brandon  
21:18 Net closed.  
13 check-ins.  
Discussion: Other hobbies besides amateur radio.

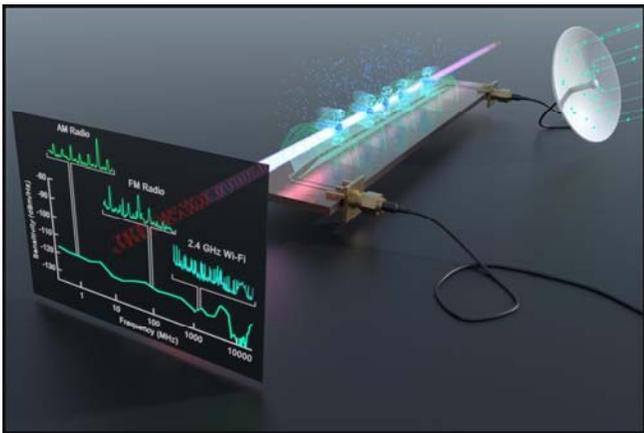
2021-03-17 Net commenced 20:00 local, 00:00Z

Net control Leo VE2ARC (VE2SI)  
VE2GFY, Bob, Chateaugay  
VE2LRZ, Erick, Cote St. Luc  
VA2CNE, Cedric, Dorval  
VE2WRH, Wayne, Cote St. Luc  
VE2KFC, Norm, St. Constant  
VA2LEQ, Lee  
VA2NH, Nora, St. Lazare  
VE2MPD, Dave, Verdun  
VE2HS, Pierre  
VE2FSE, Frank  
VE2YI, Claude, Laval  
VA2XMX, Petro  
VA2LY, Lyubo  
VA2XS, Mike, Ville St. Laurent  
21:37 Net closed.  
15 check-ins.  
Discussion: Ways of encouraging people to join amateur radio.

## NEW QUANTUM RECEIVER

the first to detect entire radio frequency spectrum

by The U. S. Army Research Laboratory



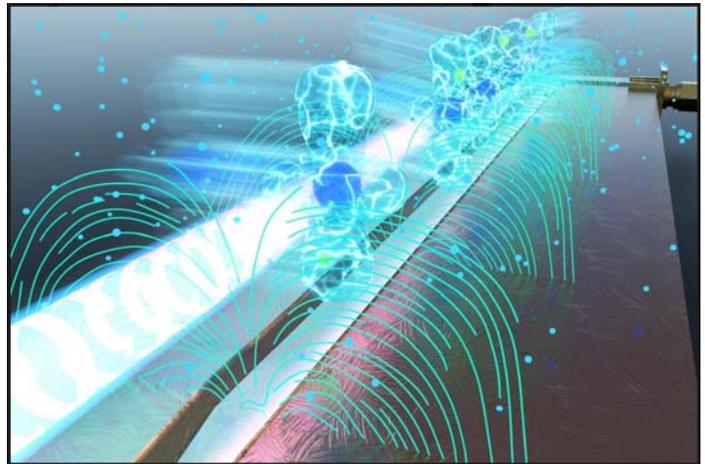
A Rydberg receiver and spectrum analyzer detects a wide range of real-world radio frequency signals above a microwave circuit including AM radio, FM radio, Wi-Fi and Bluetooth. Credit: U.S. Army illustration

A new quantum sensor can analyze the full spectrum of radio frequency and real-world signals, unleashing new potentials for soldier communications, spectrum awareness and electronic warfare.

Army researchers built the quantum sensor, which can sample the radio-frequency spectrum from zero frequency up to 20 GHz and detect AM and FM radio, Bluetooth, Wi-Fi and other communication signals.

The Rydberg sensor uses laser beams to create highly-excited Rydberg atoms directly above a microwave circuit, to boost and hone in on the portion of the spectrum being measured. The Rydberg atoms are sensitive to the circuit's voltage, enabling the device to be used as a sensitive probe for the wide range of signals in the RF spectrum.

"All previous demonstrations of Rydberg atomic sensors have only been able to sense small and specific regions of the RF spectrum, but our sensor now operates continuously over a wide frequency range for the first time," said Dr. Kevin Cox, a researcher at the U.S. Army Combat Capabilities Development Command, now known as DEVCOM, Army Research Laboratory. "This is a really important step toward proving that quantum sensors can provide a new, and dominant, set of capabilities for our Soldiers, who are operating in an increasingly complex electro-magnetic battlespace."



Researchers excite Rubidium atoms to high-energy Rydberg states. The atoms interact strongly with the circuit's electric fields, allowing detection and demodulation of any signal received into the circuit. Credit: U.S. Army illustration

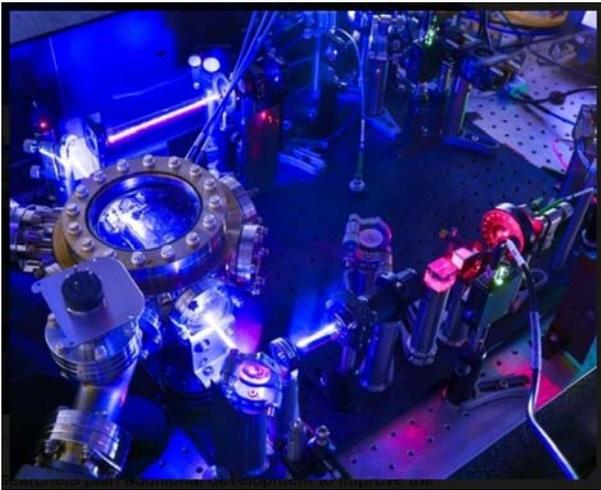
(Continued on page 5)

(Continued from page 4)

The Rydberg spectrum analyzer has the potential to surpass fundamental limitations of traditional electronics in sensitivity, bandwidth and frequency range. Because of this, the lab's Rydberg spectrum analyzer and other quantum sensors have the potential to unlock a new frontier of Army sensors for spectrum awareness, electronic warfare, sensing and communications, part of the Army's modernization strategy.

"Devices that are based on quantum constituents are one of the Army's top priorities to enable technical surprise in the competitive future battlespace," said Army researcher Dr. David Meyer. "Quantum sensors in general, including the one demonstrated here, offer unparalleled sensitivity and accuracy to detect a wide range of mission-critical signals."

The peer-reviewed journal *Physical Review Applied* published the researchers' findings, "Waveguide-coupled Rydberg spectrum analyzer from 0 to 20 GHz", co-authored by Army researchers Drs. David Meyer, Paul Kunz, and Kevin Cox.



Researchers use a Rydberg spectrum analyzer experimental apparatus at the DEVCOM Army Research Lab. Credit: U.S. Army illustration

The researchers plan additional development to improve the signal sensitivity of the Rydberg spectrum analyzer, aiming to outperform existing state-of-the-art technology.

"Significant physics and engineering effort is still necessary before the Rydberg analyzer can integrate

into a field-testable device," Cox said. "One of the first steps will be understanding how to retain and improve the device's performance as the sensor size is decreased. The Army has emerged as a leading developer of Rydberg sensors, and we expect more cutting-edge research to result as this futuristic technology concept quickly becomes a reality."

Credit:

Scientists create quantum sensor that covers entire radio frequency spectrum

More information: David H. Meyer et al, Waveguide-Coupled Rydberg Spectrum Analyzer from 0 to 20 GHz, *Physical Review Applied* (2021).

<https://doi.org/10.1103/PhysRevApplied.15.014053>

Provided by The Army Research Laboratory.



## My First Cell Phone

By W0RW, Paul Signorelli

Courtesy of CQ Magazine, 2010 June

My first radio was a Motorola 140D for 43 MHz and a Motorola FHTRU Handi-Talkie for 157 MHz, 1/4 watt. It was modified to make it full duplex by jumpering the receiver filaments "On" so the receiver would be "On" during transmit, just using one 17" whip antenna. When you have a full duplex radio on a repeater system like that you can hear yourself so it becomes immediately obvious when you get into a bad location and finding a "Hot Spot" gives the system a 4x range.

I replaced that radio with a Motorola HT-200, 1 watt, all transistorized Handi-Talkie. It was called the "Brick". It worked on the YJ Channel in almost every city in the USA but I could not make it operate full duplex.

My regular vehicle radio telephone had a Western Electric 106A tone decoder. It used a delicate rotary relay to decode the ring-out tones that the telephone company used to call you. The AFSK tones were very slow and could easily be decoded by ear. I could decode

(Continued on page 6)

incoming calls by ear when using my handi-talkies. The Western Electric decoder could blow the auto horn or just display a "Call Waiting" light on the control head. The Mobile Telephone operator would hold on to your call information when you called back. If you wanted to call some mobile unit in a distant city, you had to call your operator and ask for the Long Distance Operator, Then ask her to call the Mobile Service Operator in that distant city, and she would then call the mobile. It really didn't take very long. There was no nationwide calling, you had to know where your friend was to call him. There were never any robo calls.



My first cell phone Motorola FHTRU



HT-200

When several of the Red Cross mobiles were active at the same time they could all talk car-to-car plus one connection to a land line if desired. These were mostly all amateur radio operators using the public telephone system for the Red Cross because there was only one VHF AM amateur repeater in the area at that time. For local disaster operations we also used the Red Cross frequency 47.42 MHz.

Generally speaking, we were to make disaster assessments, see that a disaster shelter was opened and find the shelter manager, then make sure that he could communicate with headquarters. After an earthquake in 1970, 20,000 people were evacuated and about to be flooded by a dam break. The shelter I was at had 1000 people but they had no drinking water. They slept in the gymnasium but every after-shock woke them all up. They had pay phones that were inoperative because they were jammed with quarters.



# "Get on the Air on World Amateur Radio Day" RAC Special Event



On Sunday, April 18, 2021 (0000Z to 2359Z), Radio Amateurs of Canada (RAC) is organizing a special on-air event to celebrate World Amateur Radio Day. Every year on April 18, Radio Amateurs worldwide take to the airwaves in celebration of Amateur Radio and to commemorate the formation of the International Amateur Radio Union (IARU) on April 18, 1925.

For the second year in a row, RAC has decided to hold a "Get on the Air on World Amateur Radio Day" special event in which we encourage as many Amateurs as possible to get on the air and contact as many RAC stations as possible. RAC official stations will operate across Canada from 0000Z to 2359Z on April 18.

The RAC official station call signs are VA2RAC, VA3RAC, VE1RAC, VE4RAC, VE5RAC, VE6RAC, VE7RAC, VE8RAC, VE9RAC, VO1RAC, VO2RAC, VY0RAC, VY1RAC and VY2RAC.

Those contacting one or more of these stations will be eligible for a special commemorative certificate noting their participation in RAC's Get on the Air on World Amateur Radio Day Event. Participants simply need to complete one or more contacts, on any band and mode, with RAC official stations to earn their certificates. No logs need to be submitted; simply check back on the RAC website when instructed and enter your call sign to download your certificate.

Note: From 0000z to 0500z and again from 1200z to 1800z, VA3RAC will be active in the Ontario QSO Party and will be sending the contest exchange. Stations contacting VA3RAC during those time periods are encouraged to send their contest exchange in return (state/province/country or Ontario county).

Thank you for your continuing support and understanding during this time of crisis. As with many of our Amateur Radio activities, overcoming challenges is a great way to learn. Please take care of yourself and your loved ones, stay safe and have fun while celebrating World Amateur Radio Day.

Glenn MacDonell, VE3XRA  
President, Radio Amateurs of Canada

"Get on the Air on World Amateur Radio Day":  
<https://www.rac.ca/operating/world-amateur-radio-day-april-18/>

# "Amateur Radio: Home but never Alone" World Amateur Radio Day.

IARU President Tim Ellam, VE6SH, provided the following message:

"As we enter into the second year of the COVID pandemic, many of us are still dealing with lockdowns and the associated isolation from being unable to meet family and friends in person. While there is hopefully light at the end of tunnel, it is likely some form of social distancing will continue well into the future.

The theme for World Amateur Radio Day 2021 is 'Amateur Radio: Home but Never Alone'. Throughout the last several months there has been renewed interest in the Amateur Services as a means of dealing with isolation and allowing increased contact with others in a way that is not always available through social media or other platforms. For example, local 'wellness nets' have provided friendly voices and regular status checks to those, especially the elderly, who are confined to their homes. 'Stay safe' special event stations in dozens of countries served as a reminder of the importance to limit the spread of the virus. On-air activity was at an unprecedented level with record-breaking numbers of entries in the major contests.

We truly do belong to a global community that has come together in a time of crisis to ensure we remain connected and available to assist those in need. This year's theme provides an excellent opportunity to continue to educate the general public about the value of belonging to our community and how we can assist in challenging situations. My wish for this World Amateur Radio Day, as it was last year, is for everyone to stay safe, follow the advice of medical professionals and use Amateur Radio to remain connected to our global community."

World Amateur Radio Day is the day when IARU Member Societies can show our capabilities to the public and enjoy global friendship with other Amateurs worldwide. Groups should promote their WARD activity on social media by using the hashtag #WorldAmateurRadioDay on Twitter and Facebook. The IARU will list all WARD activities on its webpage. To have your WARD activity listed, please send an email to IARU Secretary David Sumner, K1ZZ.

April 18 is the day for all of Amateur Radio to celebrate and tell the world about the science we can help teach, the community service we can provide and the fun we have. We hope you will join in the fun and education that is World Amateur Radio Day!

