



THE ROUND TABLE

Monthly Newsletter Of The Denver Radio Club

Since 1917

December 2020

PRESIDENT'S MESSAGE

BY GERRY VILLHAUER, W0GV

Hello DRC Members,

Here it is December and we are still in a virtual world! Cathy and I would like to wish each of you the Merriest Christmas and Holiday Season that you can possibly have under these conditions. Just like Thanksgiving, the dinner parties and gatherings will be much, much smaller than in past years. It is what we have to do to safely get through these difficult times. Stay Safe and Happy Holidays!

Our monthly meetings and weekly net will continue virtually until further notice. Please consult the w0tx.org website for details.

Our November program was a bit different, very interesting and well received. We had Matt Webb, from Motus Wildlife Tracking, explain how they use telemetry to track birds that are fitted with a tiny transmitter.

He told how people can get involved and build their own station that would provide data into their servers. Thanks Matt, Great Job!

Our December meeting will be virtual on Wednesday, December 16th. Our presenter will be Bob Witte (K0NR). Bob's presentation is: "Having Fun With VHF", which includes a discussion of some VHF basics, VHF contesting and Summits on The Air.

Bob Witte (K0NR) enjoys a wide variety of amateur radio activities, HF through UHF. As an author, Bob has written for QST, CQ, CQ VHF and QRP Quarterly. He has a passion for VHF mountaintop operating and is active in Summits on The Air (SOTA) program. He recently published his book, VHF, Summits and More, which discusses introductory VHF/UHF topics and operating activities. He can often be found exploring the Colorado Mountains, always with ham radio gear in hand. Bob is well known in the ham radio community and this is a program you won't want to miss. Mark your calendars!

Remember to join the Elmer Session, at 6 p.m. prior to our regular meetings. Also, our Learning net is on Wednesday evenings, except regular meeting night, at 7:30 p.m. on the 145.490 mhz repeater.

Thanks to all of our new members who have recently joined the DRC. Your support is very much appreciated. Please come to meetings and events and stay active. Your name and call will be posted in this edition of the Round Table.

73 for now,

Gerry
W0GV
President



WHO'S NEW IN THE DRC?

BY BOB WILLSON, KC0CZ

The DRC is a very active club in the Denver metro area and we'd like to have all of our members listen for these new calls and personally to make them feel welcome. Welcome to our newest members:

David Wright - KF7OHL	Andrew Migut
James Morris - KE0YAK	Iwona Migut
Peter Egli - N1GUM	Michael Migut
Brandon Newton - KC3DXL	Jaime H Leal - KF0APM
Aleksandr Voishchev - W0VAL	

We have a number of activities throughout the year and we'd like very much for you to participate in serving your community. If you have questions please feel free to ask on any of the repeaters or see the contact information on the last page of this publication.

Also, please join us once a month at the regular club meeting on the 3rd Wednesday at 7:00 p.m. For new hams we have the Elmer session which starts at 6:00 p.m. before the regular meeting.

TECHNICAL COMMITTEE REPORT

BY BILL RINKER, W6OAV

The following is an overview of current issues for the Tech Committee.

DRC/TSA Aurora Site.

Goal: Work with the TSA relative to establishing a "communications room" for the DRC.

Status: This project shelved until Covid-19 is over.

Internet Failure Procedure at Station 4.

Goal: Develop a procedure for troubleshooting Internet failures.

Status: COMPLETED by W6OAV

Replace 220 Repeater Antennas

Goal: Improve coverage for the repeater.

Status: WWOLF is constructing the coax harness. Once completed, a work party will be scheduled.

Resolve the 220 Repeater Lockup issues.

Goal: Obtain a response from BridgeCom for troubleshooting assistance.

Status: COMPLETED by W0GV and WG0N

Station 4 Remote Power Control.

Goal: Configure the Power Control to allow remote power control for various systems.

Status: COMPLETED by WG0N

Install a Remote 6 Meter Receiver

Goal: Investigate the possibility a remote receiver to resolve the high noise level at Station 4.

Status: WG0N and W0GV will check out conditions at a possible site.

Repair the Echolink Server

Goal: Repair or rebuild the server

Status: COMPLETED By N0OBA and K0HTX

WIRES-X Repeater Tech Support

Goal: Create and educate a tech support team for maintaining and troubleshooting.

Status: COMPLETED by W6OAV

LEARNING NET REPORT

BY FRED HART, AA0JK

Our amateur radio learning net purpose: We are here to help introduce, and promote, a variety of topics of interest to all amateur radio operators.

Our intent is to help participants get more active, involved, and engaged in amateur radio.

Topics of interest we encourage:

Personal Communications

- Getting started in the various modes, of communications.

Emergency communications

- Participation in public service.
- Training in emergency communication for volunteers.

Radio electronics, and technology

- Kit building, understanding signal propagation. and building antennas.

We strive to put experienced members-volunteers, at the forefront, as a regular source of knowledge-sharing in the Denver Radio Club. We hope members participating in the DRC learning net will find it rewarding to share experiences, and learning, that will motivate more of our amateur radio community toward lifelong journeys as Hams.

If you have experience in, and have a passion for, any amateur radio related topics, please consider providing the DRC with presentations that will motivate other Hams to share your interests.

October Topics we have discussed:

- Vacuum tube amplifier operation.
- Advanced Class Preservation Society Group: <https://www.qrz.com/db/W5URX/>
- SB-200 Heathkit Amplifier rebuild: <http://www.wlwaters.com/id37.html>
- Antenna fundamental Basics: <https://youtu.be/h9vqvDcM070>
- Mag-Loop Antennas: <https://youtu.be/yYbKrw8l6JU>
- Vertical antennas and RF ground: <https://youtu.be/g15xQecyKzQ>
- Limited-space antennas: <http://www.arrl.org/limited-space-and-indoor-antennas>
- Chameleon and Palomar end-fed antennas: <https://youtu.be/BlhyrCBHW-0>
- RFI: The ARRL RFI Book 3rd Edition. ISBN:978-0-87259-091-5. item No. 0915
- HF Vertical Ground Radials: <http://www.arrl.org/verticals>
- HamStudy: <https://hamstudy.org/>
- VE Testing

Great topics from our group. We certainly enjoy everyone's participation. Thanks to all.

If you are listening and don't yet have your license, you can contact us at the [W0TX web-site](http://w0tx.org), w0tx@w0tx.org, or elmer@w0tx.org.

If we don't have the answer here on the net, we have a lot of experienced Hams in the club that can help.

Getting that first Technician license? Upgrading to General or Extra? We're here to help. You may also find Dave Casler's Amateur Radio Licensing Guides helpful: <https://dcasler.com/ham-radio/>

We would encourage those who have been Hams for several years to also join us. Your experience

and input is welcomed.

Finding your place in the amateur radio community - -> Are you looking to be more involved, learn new skills, find a mentor or friends to share your amateur radio interest? Check out your local Denver Radio Club, and start making the most of your amateur radio license.



<http://www.arrl.org/public-service>

Use your communication skills to help keep your community safe!



<https://www.weather.gov/marine/ham>

During severe weather events, amateur radio operators bring significant resources to storm spotting, including an established communications system that can function in an emergency. They provide real-time information to partners like emergency management and forecasters at the national weather service. The data received from hams helps issue weather watches, warnings, and advisories.



<http://www.warrenares.org/home/skywarn-weather-spotting>

What topics would you like to discuss? Join us Wednesday nights, 7:30 PM, 145.490, 100 Hz PL tone & linked to 448.625, 100Hz PL tone.

73,

Fred
AA0JK

LONGMONT ARC RECOGNITION

BY BILL HESTER, N0LAJ

Here is some nice press that Longmont ARC received for their *On Air with Santa* program.

<https://www.timescall.com/2020/11/12/longmont-club-puts-santa-on-the-airwaves-with-hope-of-transmitting-interest-in-amateur-radio/>

ARRL COMMENTS ON FCC AMATEUR RADIO LICENSE FEES

NOTE BY JEFF RYAN, K0RM

The ARRL has filed comments with the FCC in response to the commissions notification to start collecting license fees for Amateur Radio licenses. The League has made some very good arguments as to why the FCC should not be charging fees for licenses in the amateur service.

You can see them here: https://ecfsapi.fcc.gov/file/111762316365/ARRL%20Comments%20MD%2020-270%2011_16_2020.pdf

Or, go to the ARRL website, [see the story](#) on this issue dated 11/19 and click on the words "Formal Comments" in the 2nd paragraph.

DECEMBER MEETING ANNOUNCEMENT

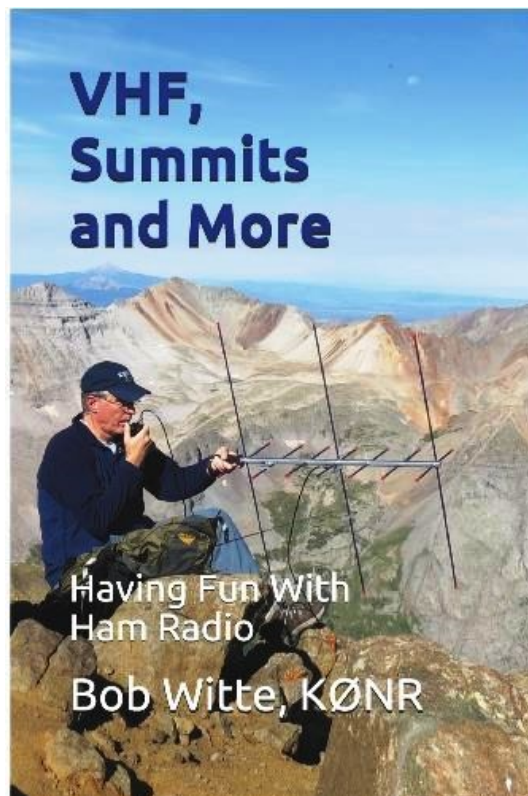
BY BOB WITTE, K0NR

Presentation:

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Bio:

Bob Witte (K0NR) enjoys a wide variety of amateur radio activities, HF through UHF. As an author, Bob has written for QST, CQ, CQ VHF and QRP Quarterly. He has a passion for VHF mountaintop operating and is active in the Summits On The Air (SOTA) program. He recently published his book, VHF, Summits and More, which discusses introductory VHF/UHF topics and operating activities. He can often be found exploring the Colorado Mountains, always with ham radio gear in hand.



EXPLORING RECHARGEABLE BATTERIES

By PETER PARKER, VK3YE

SUBMITTED BY BILL RINKER, W6OAV, FROM THE MASSILLON AMATEUR RADIO CLUB'S *FEEDBACK*

They're used everywhere, and there's many different brands and types. Almost every amateur has their own opinions on the merits of different types and the best ways to look after them. Here we examine the main types available and their suitability for various equipment that amateurs use.

How rechargeable batteries work

Batteries convert stored chemical energy into electrical energy. This is achieved by causing electrons to flow whenever there is a conductive path between the cell's electrodes.

Electrons flow as a result of a chemical reaction between the cell's two electrodes that are separated by an electrolyte. The cell becomes exhausted when the active materials inside the cell are depleted and the chemical reactions slow. The voltage provided by a cell depends on the electrode material, their surface area and material between the electrodes (electrolyte). Current flow stops when the connection between the electrodes is removed.

Rechargeable cells operate on the same principle, except that the chemical reaction that occurs is reversed while charging. When connected to an appropriate charger, cells convert electrical energy back into potential chemical energy. The process is repeated every time the cell is discharged and recharged.

Different cells use different electrode materials and have different voltage outputs (1.2, 1.5, 2 and 3.6 volts for the types discussed here). Higher voltages are possible by connecting cells in series. A set of several cells connected together is called a battery. However, because lay people do not distinguish between a 1.5 volt cell and a 9 volt battery (which comprises several cells), the term battery is widely used for both batteries and cells.

The capacity of cells is expressed in amp-hours (Ah) or milliamp-hours (mAh). The approximate time that a battery will last per charge can be found by dividing the battery pack capacity (normally written on the battery pack itself) by the average current consumption of the device. Thus a 600 mAh battery pack can be expected to power a receiver that takes 60mA for 10 hours.

Cells can be visualized as consisting of a cell with a resistor in series. You won't find an actual resistor should you split open a battery pack, but the effect is the same.

Sealed lead acid batteries should not be charged at voltages higher than those indicated as safe above. This is because high charging voltages (eg 2.6 volts per cell) will endanger the battery due to the production of excess gas. At a 13.8 volt charging voltage the production of gas is low, and the battery should give years of service. Charging current should not exceed 20 per cent of the rated amp hour capacity of cells. If using a high current 13.8 volt power supply as a charger, some form of current limiting is desirable to stay within the battery's limits.

Conclusion

This article has examined the characteristics of all major types of rechargeable batteries used by amateurs. We learned that NiCads and sealed lead acid cells were best for high current ap-

plications, while other varieties, such as rechargeable alkaline and nickel metal hydride work well for low current applications. The charging of batteries varies too - Rechargeable alkaline and sealed lead acid required a constant voltage, but nickel cadmium and nickel metal hydride cells needed a constant current to charge properly. In all cases overcharging, through excessive voltages, currents or charging periods can cause heating, gas build-up and possible cell damage. However, if you treat your batteries well, you should have many years of successful operation from them, whichever type you choose.

Acknowledgments

I wish to acknowledge the people and organizations who have contributed to the writing of this article. These include:

The late Bill Trenwith VK3ATW for suggestions on the manuscript and imparting of knowledge gained through many years as a mechanics teacher, model engineer and radio amateur.

Peter Wegner from Coorey & Co, distributors of BIG rechargeable alkaline cells.

Danielle Cvetkovic from Invensys Energy Systems Pty Ltd for material on Hawker sealed lead acid batteries.

Adeal Pty Ltd for information on Varta's range of NiCad and NiMH cells.

References

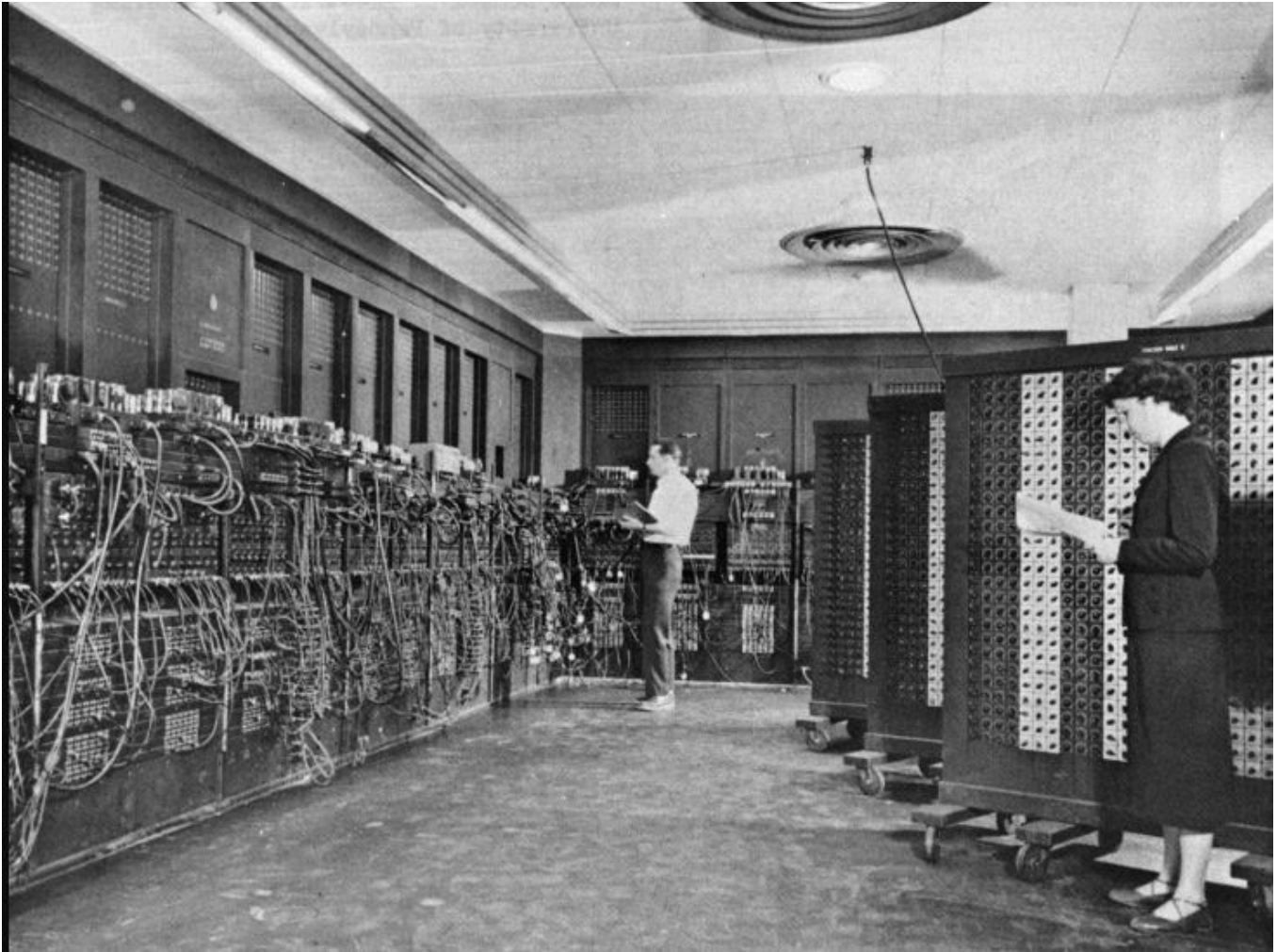
Hawker P G3VA, Technical Topics Scrapbook 1990-1994, RSGB, pages 1, 16, 142.



ONE AMAZING COMPUTER

By BILL RINKER, W6OAV

Can you imagine a computer occupying forty 9' tall cabinets and containing 17,468 vacuum tubes, 70,000 resistors, 10,000 capacitors, 1,500 relays, 6,000 manual switches, and 5 million soldered joints? This is only part of the story of the massive computer called ENIAC. For fascinating details about ENIAC, go to <https://www.thoughtco.com/history-of-the-eniac-computer-1991601>



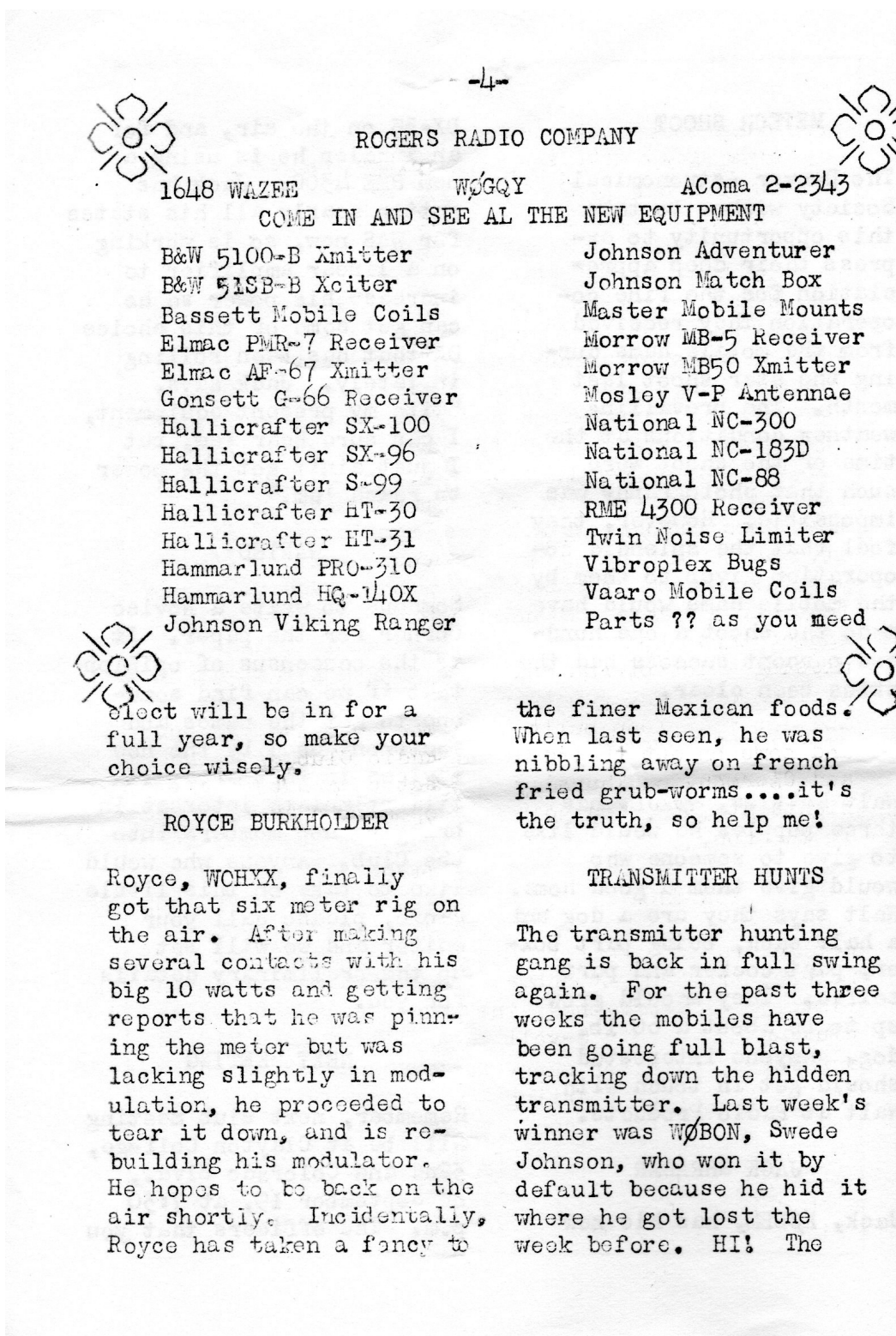
DRC's 2020 HOLIDAY PARTY CANCELLED

The DRC Holiday Party scheduled for December 16, 2020 has been cancelled due to the ongoing COVID situation and occupancy restrictions imposed by the City of Denver. Besides the city restrictions, the DRC Board of Directors feels it is the responsible thing to do for the wellbeing of our members.

PAST ROUND TABLE PAGES

PROVIDED BY WOODY LINWOOD, W0UI

A page from the September 1956 multi-page edition. It is the second oldest known remaining Round Table.



-4-

ROGERS RADIO COMPANY

1648 WAZEE W0GQY AComa 2-2343
 COME IN AND SEE AL THE NEW EQUIPMENT

B&W 5100-B Xmitter
 B&W 51SB-B Xciter
 Bassett Mobile Coils
 Elmac PMR-7 Receiver
 Elmac AF-67 Xmitter
 Gonsett G-66 Receiver
 Hallicrafter SX-100
 Hallicrafter SX-96
 Hallicrafter S-99
 Hallicrafter HT-30
 Hallicrafter HT-31
 Hammarlund PRO-310
 Hammarlund HQ-140X
 Johnson Viking Ranger

Johnson Adventurer
 Johnson Match Box
 Master Mobile Mounts
 Morrow MB-5 Receiver
 Morrow MB50 Xmitter
 Mosley V-P Antennae
 National NC-300
 National NC-183D
 National NC-88
 RME 4300 Receiver
 Twin Noise Limiter
 Vibroplex Bugs
 Vaaro Mobile Coils
 Parts ?? as you need

elect will be in for a full year, so make your choice wisely.

ROYCE BURKHOLDER

Royce, WCHXX, finally got that six meter rig on the air. After making several contacts with his big 10 watts and getting reports that he was pinning the meter but was lacking slightly in modulation, he proceeded to tear it down, and is rebuilding his modulator. He hopes to be back on the air shortly. Incidentally, Royce has taken a fancy to

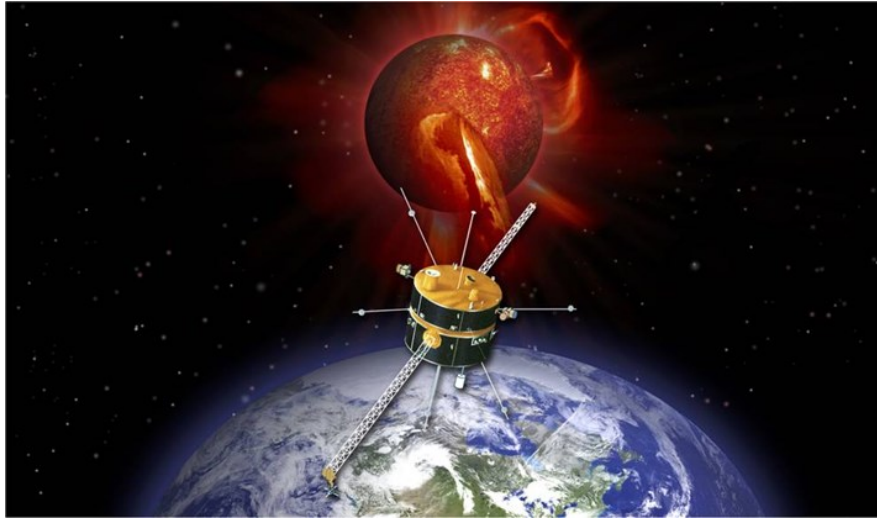
the finer Mexican foods. When last seen, he was nibbling away on french fried grub-worms....it's the truth, so help me!

TRANSMITTER HUNTS

The transmitter hunting gang is back in full swing again. For the past three weeks the mobiles have been going full blast, tracking down the hidden transmitter. Last week's winner was W0BON, Swede Johnson, who won it by default because he hid it where he got lost the week before. HI! The

SOLAR GEOPHYSICAL ACTIVITY REPORT

PROVIDED BY FRED HART, AA0JK



November 1st - November started out with an increase in solar activity. Solar cycle 25 is definitely here. A large sunspot group was rotating into view around the east limb producing minor solar flares.

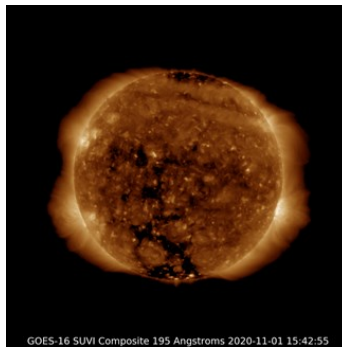
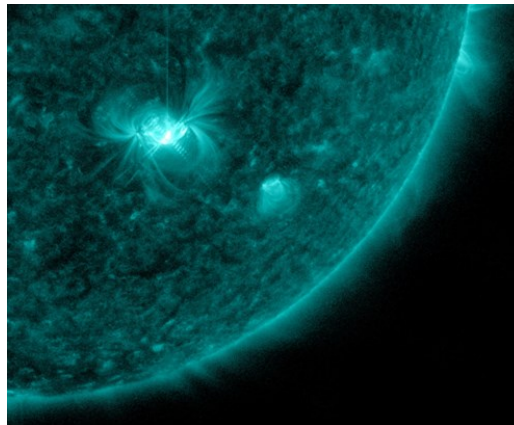


Image Credit: SDO/AIA

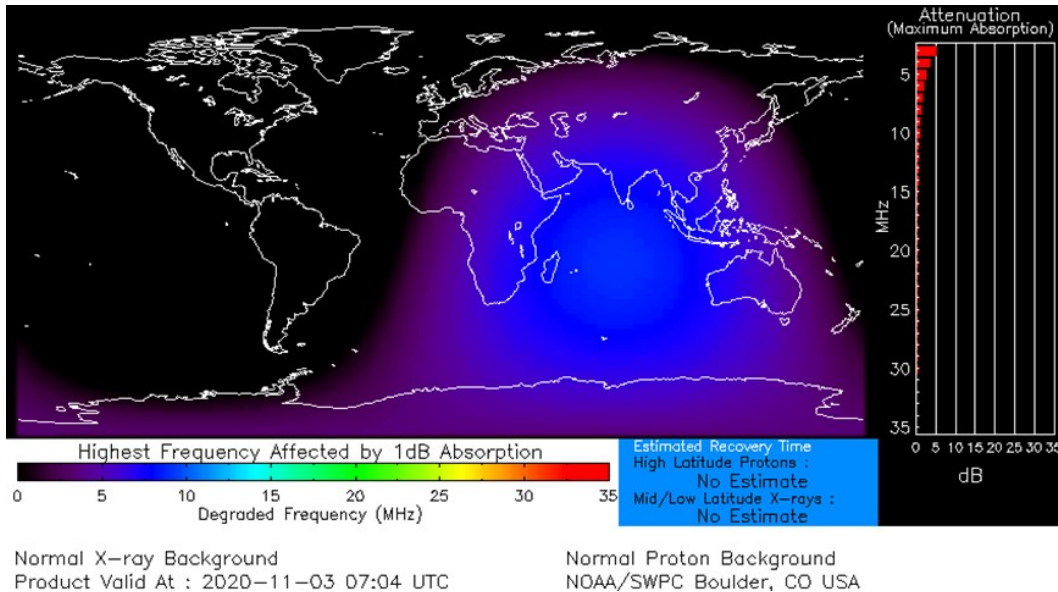
Four active regions, two east incoming, and two west departing. Solar wind was passing, and just brushing Earth's atmosphere. (SFI, was at 77 and the Kp index was at 2).

A coronal hole was forming in the Sun's photosphere's southern region as it entered heliographic longitude. Solar wind enhancement was expected mid-week.

Image Credit: SDO/AIA

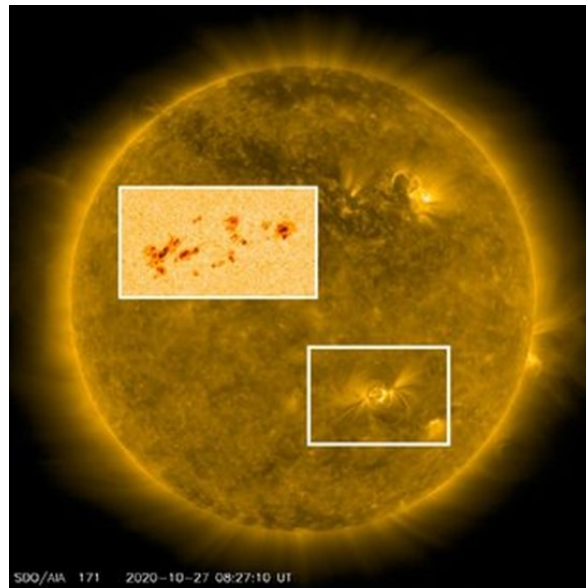


Sunspot AR2778 was crackling with flares, and increased in size sharply, with C-class solar flares. The figure above, shows the ultraviolet flash from the strongest flare so far, a C4- class flare, photographed by NASA's Solar Dynamics Observatory.



As depicted in the chart above, the sunspot produced a minor C1-class solar flare. A pulse of UV radiation from the flare briefly ionized Earth's upper atmosphere, causing a low-frequency radio blackout over the Indian Ocean. Mariners and ham radio operators in the area may have noticed unusual propagation effects at frequencies below ~5 MHz. (Nov. 3rd at 0703 UT)

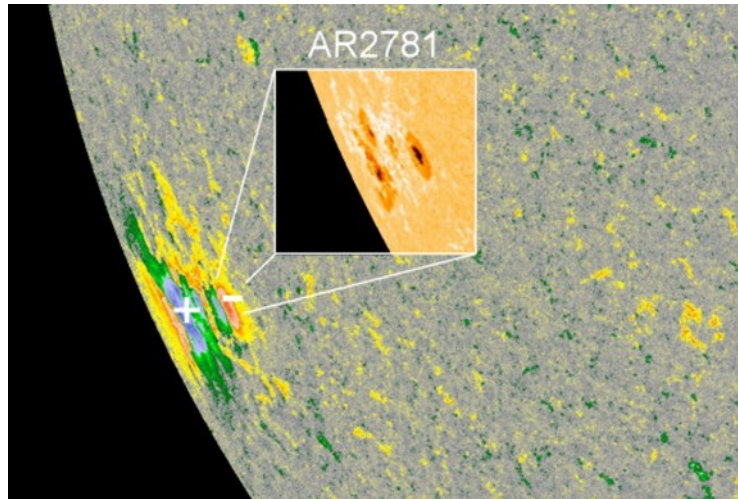
AR2778 pushed the solar flux index a little higher to 82. The region was crackling with minor B and C-Class solar flares, and would remain a threat for an isolated M-Class event.



Imagery courtesy of SDO/HMI.

AR2779 was the biggest sunspot of young Solar Cycle 25, with nearly a dozen dark cores sprawling 100,000 km across the solar surface.

November 4th -



Another big sunspot. A new sunspot group was rotating into view over the Sun's southeastern limb and it was a big one. At least three dark cores the size of Earth were inset in this magnetic map from NASA's Solar Dynamics Observatory. Solar Cycle 25 is taking a firm hold on the Sun.

The solar flux index rose to 83.

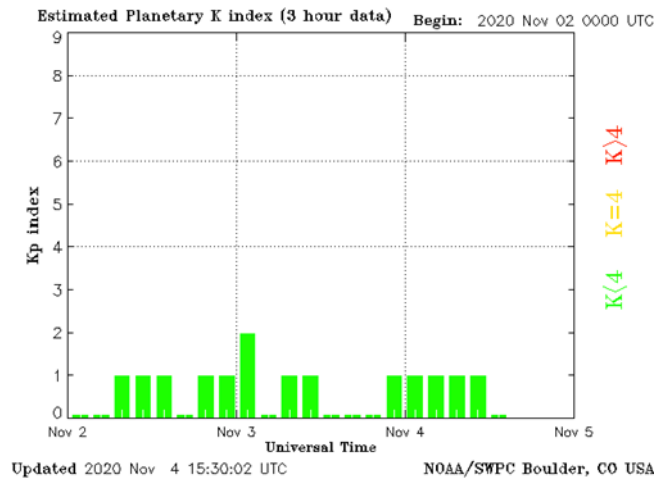
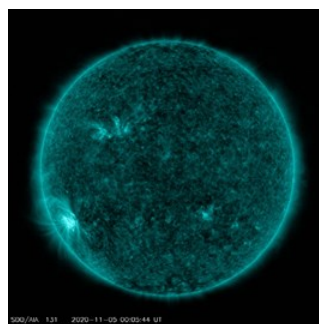


Image: Kp Index NOAA/SWPC Boulder, Colorado

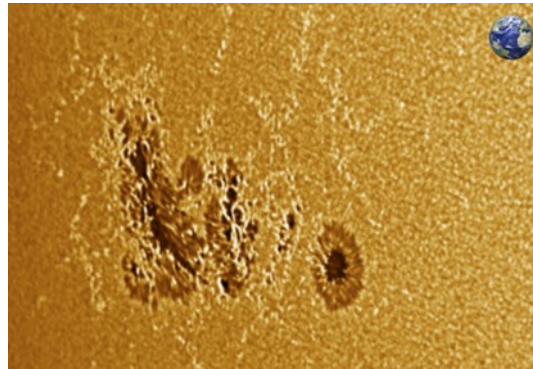
November 5th - Solar flare activity: A giant sunspot, AR2781, was crackling with solar flares. The strongest so far, a C7 – class explosion, at 0022 UT on November 5th, lit up the sunspot's magnetic canopy for nearly an hour.

Image Credit: SDO/AIA

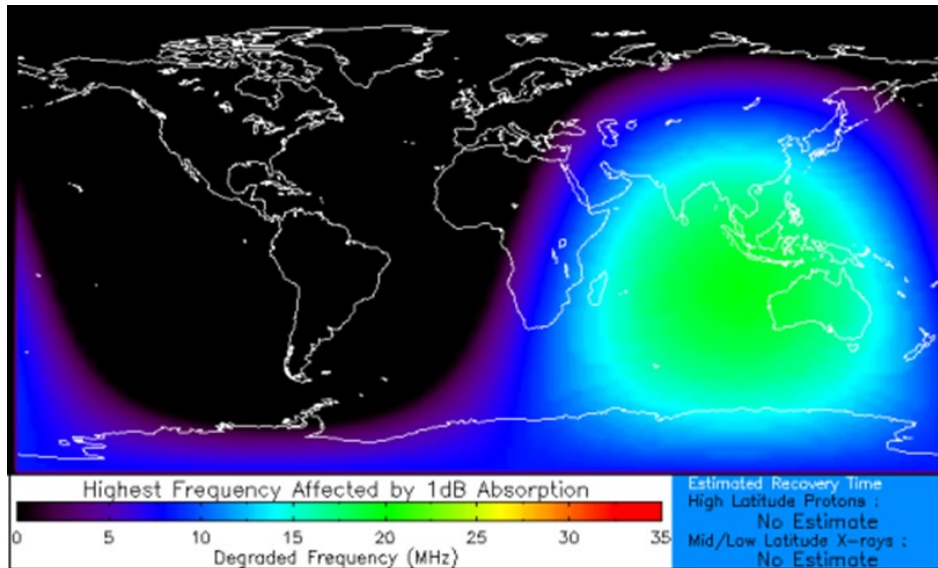


NASA's Solar Dynamics Observatory captured the extreme ultraviolet (UV) flash

AR2781 had nearly doubled in size, with a primary dark core more than 3 times wider than Earth.

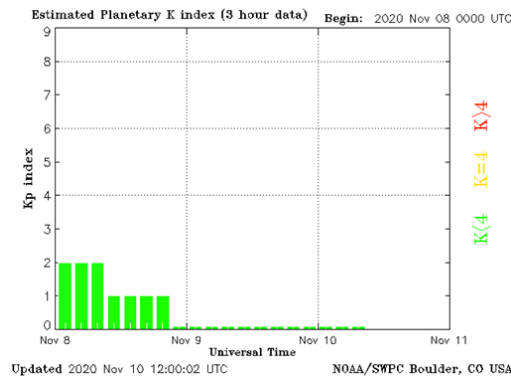


November 8 - On Sunday, November 8th, (0518 UT), giant sunspots, AR2781, produced a C5-class solar flare, shown here in a photo from NASA's Solar Dynamics Observatory:



Again, another flare erupts, causing X-rays, and UV radiation from the flare to ionized the top of Earth's atmosphere. This intern, caused a brief low-frequency radio blackout over the Pacific Ocean, and Australia . Note the blackout map above. Mariners and Ham Radio operators in the region might have noticed signals fading, especially at frequencies below 10 MHz.

November 10th - Kp flat-lines:



High cosmic ray alert. The flat-line, low Kp index, was too quiet, and this condition was allowing a high influx of cosmic rays.

November 12th - SOLAR FLARE ACTIVITY INTENSIFIES: There was a new spot on the sun, AR2782. It was not very large, but it was unstable. The active region was crackling with C-class solar flares. The action began on November 11th (1910 UT) with a category C2 eruption.

November 13th - The sun was mostly quiet, no low lateral holes, no eruptive activity, and the lower sunspot groups were happily flowing along without significant flaring. Solar wind and Geomagnetic conditions were calm as well. Bright active regions turning into view, would merit attention.

Week Three

November 17th - A new sunspot alert was issued. A new sunspot was emerging over the sun's eastern limb. Provisionally numbered AR2783, the sunspot's magnetic field appeared to be uncomplicated and stable; as a result, it did not pose a threat for strong solar flares.

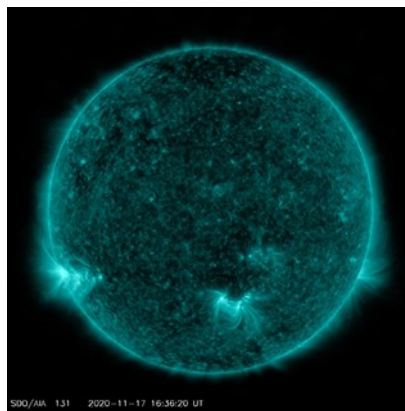
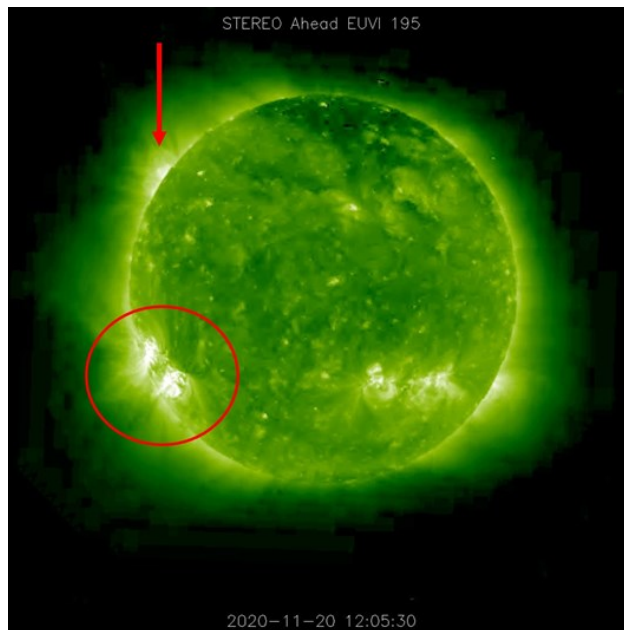


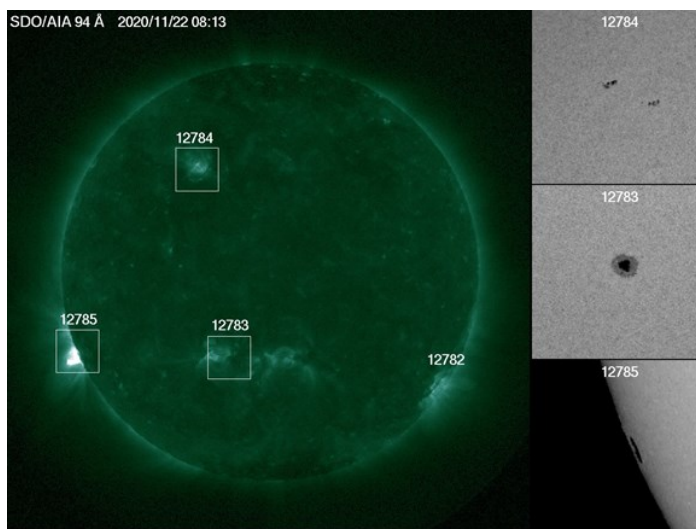
Image Credit: SDO / AIA 131 Angstroms

November 20th - Image: STEREO Ahead EUVI 195



Activity got a bit fractured over a 24 hour period. There were numerous small CME's erupting and a coronal hole was facing earth.

Week Four - Image Credit: SDO/AIA 94A



A new sunspot region was arriving on Sun's southeast limb (lower left), which will be AR2785. We have known this region in STEREO-A data for some time, and it seems to outshine other regions.

Joint USAF/NOAA Solar Geophysical Activity Report and Forecast, Issued at 2200Z on 22 November 2020, Analysis of Solar Active Regions and Activity: Solar activity has been at low levels.

The largest solar event of the period was a C1 event observed at 22/0927Z. There were 3 numbered sunspot regions on the facing disk.

Solar Activity Forecast: Solar activity was likely to be low with a slight chance for an M-class flares.

Geophysical Activity Summary: The geomagnetic field has been at unsettled to minor storm levels. Solar wind speed reached a peak of 649 km/s at 22/1049Z. Total IMF reached 12. The maximum southward component of Bz reached -10 nT. Geophysical Activity Forecast: The geomagnetic field was expected to be at quiet to minor storm levels, quiet to unsettled.

Propagation Information:

Solar-Terrestrial Data - http://www.n0nbh.com						
23 Nov 2020 0109 GMT	VHF Conditions	HF Conditions		Condition	K-In	A-In
SFI 88 SN 23	Item Status	Band	Day Night	Quiet	0-2	0-7
A 27 K 3 / PIntry	Aurora Band Closed	80n-40n	Poor Fair	Unsettled	3	8-15
X-Ray B1.8	6n EsEU Band Closed	30n-20n	Fair Fair	Active	4	16-29
304A 108.2 @ SEM	4n EsEU Band Closed	17n-15n	Poor Poor	Minor storm	5	30-49
Ptn Flx 22	2n EsEU Band Closed	12n-10n	Poor Poor	Major storm	6	50-99
Elc Flx 985	2n EsNA Band Closed	Geomag Field	UNSETTLD	Severe storm	7-9	>100
Aurora 1/n=1.99	EME Deg Fair	Sig Noise Lvl	S2-S3	SFI A-In K-In Prop Opng	>180 <8 <3	E-W open
Aur Lat 67.5°	MUF ES - SEASON BREAK	MUF US Boulder	9.94	>180 <8 >3	>3	N-S open
Bz -0.1 SW 580.3	MS 0 6 12 18 UTC	Solar Flare Prb	22%	>250 >30 >3	>3	Aurora
		(C) Paul L Herrman 2013				

73,

Fred
AA0JK

DRC's EMERGENCY RESPONSES

In the event of a disaster in the metro area, please monitor our repeaters on 145.490/448.625 (primary) and 449.350 (secondary).

The emergency Net Control Operator will provide information and/or requests to members for assistance.

[W0TX Repeater Directory](#)



Note to DRC Members:

Our club depends on the involvement and participation of YOU, our members. Do you have a skill or interest that could help the club. Maybe you want to volunteer to be on a committee? Like to write? Have ideas for improving what we do? Speak up and let someone know, all ideas are welcomed and participation is always helpful. ~Editor

RANDOM SITE OF THE MONTH
[9.9.9.9](#)

THE ROUND TABLE ARCHIVE

Go to: <http://www.wotx.org/roundtables.htm>

THE ROUND TABLE ARTICLE INDEX

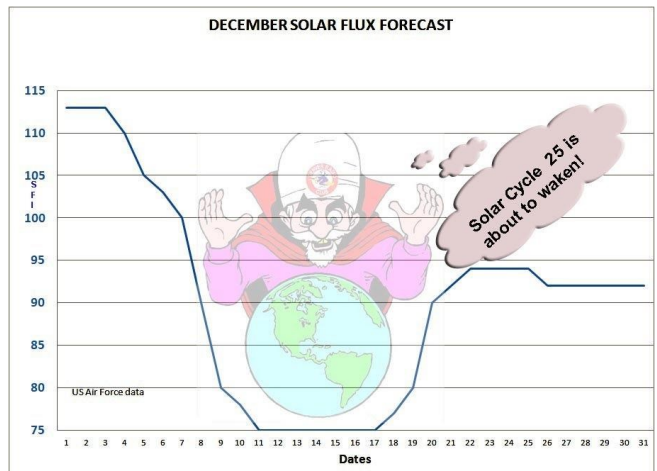
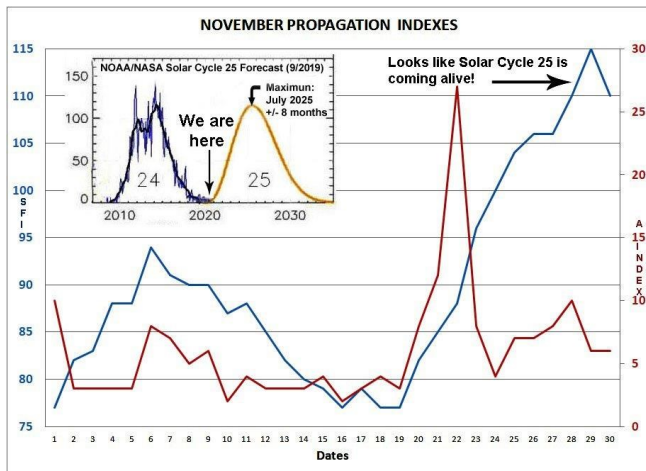
Go to: <http://www.w0tx.org/RoundtableArchive/-RoundTables-Index.pdf>

PAST & FUTURE PROPAGATION CONDITIONS

By Bill Rinker, W6OAV

The charts below show the Solar Flux and "A" indexes for last month and the forecast for this month's Solar Flux index.

Refer to the September 2010 *Round Table* for more complete information on interpreting these charts, which is available at: [http://www.w0tx.org/RoundtableArchive/2010-RoundTables/RT201009\(SEP\).pdf](http://www.w0tx.org/RoundtableArchive/2010-RoundTables/RT201009(SEP).pdf)



UPCOMING EVENTS
HAMFESTS & CONVENTIONS

Event	Date	Location	Sponsor Website
-------	------	----------	-----------------

All cancelled.

UPCOMING QSO PARTIES

The following are the Contests not sponsored by the ARRL. Please submit additions for future issues.

State/Province	Start Date	End Date	Sponsor Website	Notes
Alaska	01/15/2021	02/15/2021	NCDXA Alaska "RST" QSO Party	
British Columbia	02/06/2021	02/07/2021	Orca DX and Contest Club	
Minnesota	02/06/2021	02/06/2021	Minnesota Wireless Association	
Vermont	02/06/2021	02/07/2021	Radio Amateurs of Northern Vermont	
South Carolina	02/27/2021	02/28/2021	SC QSO Party	
North Carolina	02/28/2021	03/01/2021	North Carolina QSO Party	

ATTENTION

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






DRC REPEATERS

BAND	Freq / Shift / PL Tone	Additional Information
6m	53.090MHz (-1MHz) 107.2Hz PL	
Packet	145.05MHz<>14.105MHz	2m / 20m gateway. Useable by Technicians on 2m.
2m	145.490MHz (-) 100Hz PL	Linked to 70cm / 448.625MHz. Primary frequency during emergency net.
2m	147.330MHz (+) 100Hz PL	Local area. Has voting receivers. Does not TX a PL.
2m	147.330MHz (+) 131.8Hz PL	Test mode operation. Send signal reports to Tech Committee.
1.25m	224.380MHz (-) 100Hz PL	
70cm	447.825MHz (-) DCS~073; NB 12.5; +/- 2.5	Saint Anthony's. Note: This is a narrow band repeater requiring DCS.
70cm	448.625MHz (-) 100Hz PL	Linked to 2m / 145.490MHz. 1° disaster net freq.
70cm	449.350MHz (-) 100Hz PL	Wide area coverage with Echolink, node # 4140. Secondary frequency during emergency net.
70cm	449.775 MHz (-)	Yaesu digital, C4FM, Wires-X, DN, VW & Data. No analog FM. W0TX Room 40931.
70cm	446.7875MHz (-)	BrandMeister Repeater: Slot 1 – Wide Area Traffic, Slot 2 – Local Talk Group 310804

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DECEMBER 2020							<i>DRC Net Sundays at 8:30 p.m. on 145.490 / 448.625 (no PL)</i>
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
		1	2 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	3	4 160 Meter CW - Starts 2200 UTC	5 160 Meter - CW continued	
6 160 Meter - CW Ends 1559 UTC	7  Last Quarter	8	9 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	10	11	12 10 Meter Starts 0000 UTC  Full Moon	
13 10 Meter Ends 2359 UTC	14  New Moon	15	16 DRC Online Meeting Elmer 6 p.m. Meeting 7 p.m.	17 	18 	19	
20 Rookie Roundup - CW 1800—2359 UTC	21  First Quarter	22	23 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	24	25 	26	
27	28	29  Full Moon	30 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	31			

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Please Let Us Know

Over the years we occasionally hear from hams who have read the Round Table in other states and countries around the world. We appreciate the comments and we would like to know where you are located. So if you live outside the Front Range or Denver Metro Area and read the newsletter either online, email or hard copy please send a short note via email with your *City, State or City, Country*.

We will publish it at a later date in our new regular feature called Round Table Round World.

To respond to this request send your information to drc.editor@gmail.com.

Subject: I'm located in...

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DRC members - this is your newsletter. Please email your club or amateur radio related suggestions to the editor. Members are the heart of The Denver Radio Club, so if you have an expertise or an interest in a particular segment of ham radio that you'd like to write about, you may email your submissions to drc.editor@gmail.com. The submission deadline is the 25th of the Month. ~ Editor