THE ROUND TABLE
Monthly Newsletter Of The Denver Radio Club
Since 1917 December 2021

President's Message

By Gerry Villhauer, W0GV

Hello DRC Members,

Can you believe this November weather? It is the end of the month and still 70 degree days. If we do not start getting moisture soon, it will be a very dry and dangerous 2022.

We have investigated the possibility of returning to face to face regular DRC meetings. The Jefferson County Court building is still closed to meetings that are not government business; and it looks like that will be the situation for some time to come. We have looked at a couple of other possibilities but, the locations we have found are way out of our area. If we would find a suitable location, we would still offer a video option for those not wishing to attend in person. In addition, as I write this, I see there is a new COVID variant coming from South Africa and the state is in another mask mandate. It looks like there is no end to COVID at this period.

Thanks to John (W6NBC) for his recorded presentation on making VHF/UHF antennas, using foil and copper tape, at our November online meeting. John intended to make the presentation live, but somehow he missed the meeting date. Bill (W6OAV) saved the day by having the presentation already pre-recorded. So, other than a short delay for set up, we still enjoyed the presentation.

Our December 15th program will be "Everything you need to know about Lithium Batteries" presented by Marcel Stieber (AI6MS). Marcel will explain the chemical makeup and the pros and cons of the three most common battery types: Lead Acid, Lithium and Lithium Iron Phosphate. We all use batteries in ham radio and other applications. This promises to be very interesting and useful information. Mark your calendars for Wednesday December 15th.

Cathy and I would like to wish all of you a Very Merry and Happy Holiday Season! May your wish for that new radio come true!

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 welcome them to the club and repeaters. Welcome to our newest members:

James Ellenberge - W3JCE	Lyndon Haddock - KC8I

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.

Learning Net Report

By Fred Hart, AA0JK

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.

November topics we discussed:
- SSB vs LSB: Denver Radio Clubs Round Table, November 2021 page 5
- A New Version of WSJT-X Now Available
- Your First Amateur Radio HF Station: ARRL Item No. 0079
- Best Ham Radio Base Station 2021 – Tips & Buyer's Guide
- Contests
- Field Day Ultra-Sharp RX Filters Field-Day-Ultra-Sharp-RX-Filters.pdf (KA2C.com)
- CW:

  - Ham Basics: Sending Morse Code/CW - straight key, paddles and iambic keying youtu.be/78VXLVZckIQ
  - ARRL Item No. 0004
  - Beginner CW QSO Guide | Sample Scripts | Morse QSO Helper
  - youtu.be/ZqPQE1D8gfw
- Repeater ID's
- Space Weather and Propagation
- Radio Science for the Radio Amateur: ARRL Item No.3381
- Fundamentals of Plasma Physics as these apply to radio propagation
- Renew your License with the FCC: wireless2.fcc.gov/UlsEntry/licManager/login.jsp
- On The Air Magazine November / December
- ARRL Operating Manual: Item No. 1205

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, 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.

arrl.org/public-service
Use your communication skills to help keep your community safe!

weather.gov/marine/ham
warrenares.org/home/skywarn-weather-spotting
SKYWARN Spotter Training Updates: weather.gov/bou/spot_training

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.

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
elmer@w0tx.org

December 15th Video Meeting Announcement

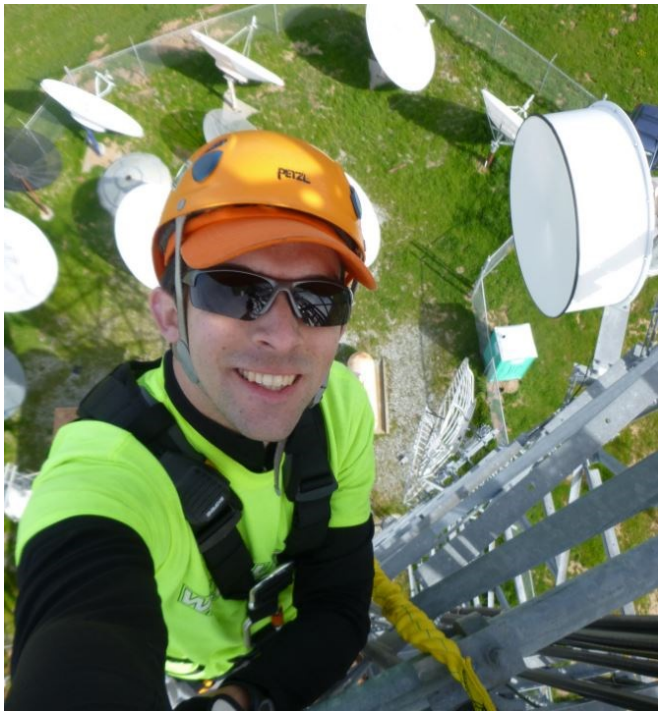
By Bill Rinker, W6OAV

Title: Everything you need to know about Lithium Batteries

By Marcel Stieber, AI6MS

Abstract: Batteries are a necessity for almost all portable radio operations. With the advent of modern battery chemistries, the choices available to the radio amateur are plentiful. This presentation will focus on the three common battery types: Lead-Acid (SLA/AGM), Lithium (Li-ion/Lipo), and Lithium Iron Phosphate (LFP/LiFePO4). We'll discuss the pros and cons of each chemistry, common uses and misuses, and everyday application tips for your latest amateur radio project.

Biography: Marcel is an Electrical Engineer from Cal Poly San Luis Obispo who enjoys supporting student clubs and fully-remote licensing. He also helps with local events, ARES, and repeater groups as an RF consultant and volunteer tower climber! More details at: https://www.qrz.com/db/AI6MS



Question of the Month

By Bill Rinker, W6OAV

Question

I have a limited space back yard where I cannot erect a 40 meter dipole. I don't want to go with a vertical since it would require radials. Unfortunately, my one possible antenna support (a tree) is in the far corner of my yard. Thus, I can't erect an Inverted Vee. Do you have any suggestions?

Answer

Such a problem can be possibly solved by installing a sloping half-wave dipole. This antenna is referred to as a half-wave sloper (HWS). Figure 1 shows a typical HWS which requires only one high support. The angle (∠β) can be varied anywhere from 90° as a horizontal half-wave dipole to 0° as a half-wave vertical dipole.

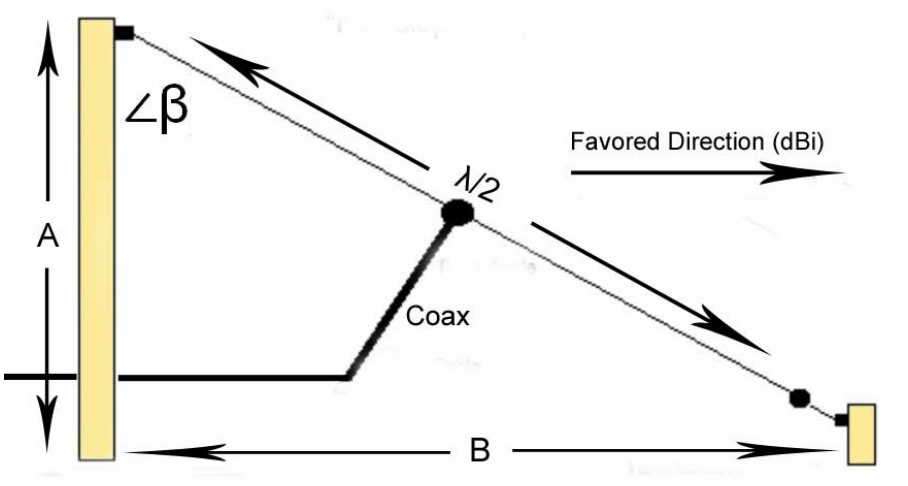


Figure 1 - Typical sloping half wave dipole

Figure 2 shows that as angle (∠β) of the HWS decreases the vertical distance A increases, the horizontal distance B decreases and the radiation pattern (dBi) decreases. Figure 3 shows the vertical and horizontal radiation patterns of a HWS with a 45° angle (∠β). Figure 4 shows 3D views of the radiation pattern of the same antenna.

∠β	A (ft)	B (ft)	dBi
90°	Horz Dipole	65.9	7.1
60°	32.6	57.1	5.1
50°	42.4	50.5	3.8
45°	46.6	46.6	3.1
40°	50.5	42.4	2.1
30°	57.1	32.9	1.9

Figure 2 - Parameters verses values of apex angle β

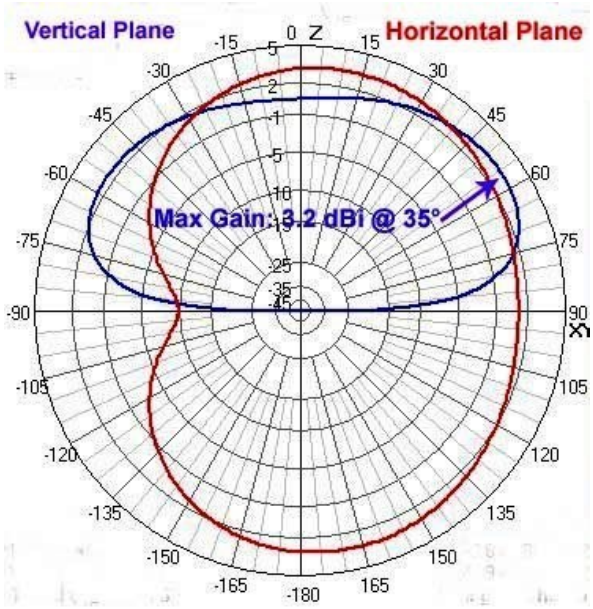


Figure 3 - Radiation patterns of a 45° HWS

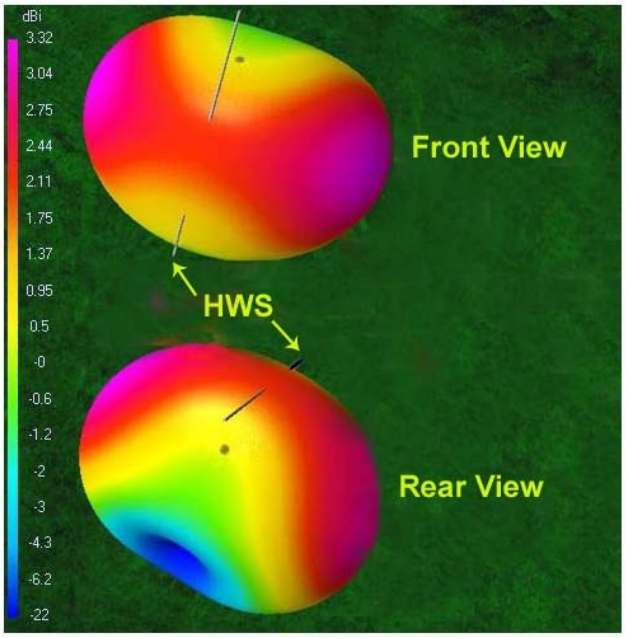


Figure 4 - 3D views of a 45° HWS antenna

So, the idea is to keep (∠β) as close to 90° as possible depending on how much A and B distances are available in your yard. The efficiency of the HWS drops drastically at angles (∠β) below 45°. The radiation patterns (dBi) for other angles (∠β) between 60°and 40°are fairly similar. The patterns above 60° start to take on those of a horizontal half-wave dipole.

So, the idea is to determine what distances A and B you can accommodate keeping (∠β) as large as possible. Hopefully you can position the HWS to "aim" the broadside pattern lobes in the directions of interest.

Another thing to consider is that you might prefer to install a half-wave end fed sloper (EFS) to eliminate the coax hanging in the air. The performance of the EFS will be very close to that of the HWS. The EFS can be a homebrew or a commercial antenna.

Information for both types of EFSs can be found at:
Homebrew EFS:
http://www.aa5tb.com/efha.html
http://www.hamuniverse.com/kl7jrendfed.html
Commercial EFS:
http://www.earchi.org/proj_homebrew.html
https://www.lnrprecision.com/endfedz/

A last resort antenna is a quarter-wave sloper with a counterpoise. Compared to the half-wave sloper the quarter-wave sloper is not as efficient, requires more vertical height but less horizontal distance. A nice site comparing the two antennas can be found at https://www.hamradiosecrets.com/sloper-antenna.html#DIPOLE.

Keep in mind that when you are transmitting there will be considerable voltage at the end of the HWS and the EFS antennas. Animals and humans would not enjoy experiencing RF burns!

Boulder ATV Club, Repeater & Newsletter

Submitted By Jim Andrews, KH6HTV

Boulder, Colorado has had an open amateur television (ATV) repeater on the air since the late 70s and continuously since 1990. Since 2016, it is now running digital TV. The repeater is dual-band (70 & 23cm) and dual-mode (analog & digital). The output is on the 70cm band at 423MHz with 6 MHz channel bandwidth. It has capability of 70cm analog or digital inputs, but the preferred input is cross-band, 23cm digital at 1243MHz. The repeater's antenna polarization is vertical. It uses the European terrestrial broadcast standard called DVB-T. The digital video and audio are fantastic with high-definition, 1080P video resolution and CD quality stereo audio. In addition to the main 70cm, DTV transmitter, we also have a microwave transmitter which runs as a 24/7 beacon for microwave experimenters. It transmits analog (480i) video & audio with FM-TV modulation on 5.905 GHz, horizontal polarization.

The W0BTV, DATV repeater is located on a mesa south-west of the city of Boulder at about 900 ft. above the city. It shares the site with the Boulder Amateur Radio Club's 146.70 MHz repeater with similar coverage. The repeater has a wide coverage area, extending from the Wyoming border on the north, DEN airport to the east and to south-east metro Denver. The map shows the coverage area.

We hold a weekly ATV net every Thursday afternoon starting at 3 pm. The net typically runs for about 1 1/2 hours. The ATV net is streamed over the British ATV Club's server. To view the net, go to batc.org.uk/live, click on either N0YE or KH6HTV-TVR.

We also have a free, ATV newsletter which is distributed via e-mail. Our newsletter has become the "de-facto" USA, ATV newsletter and now goes out to over 500 ATV hams nation-wide and to some overseas. For complete details about our repeater, go to our web site: kh6htv.com and down-load AN-51b. Past issues of our newsletter are also available there.

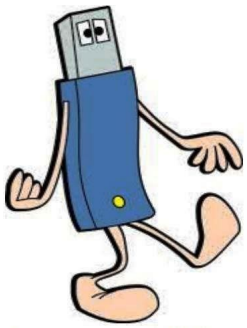
We welcome Denver Radio Club members to become active in ATV and use our W0BTV repeater. To encourage newcomers to ATV and DATV in particular, we offer active support in getting started. This includes a loaner set-top box receiver. Plus we also have some other equipment we can loan out. If interested, or you have any ATV questions, and/or would like to receive our ATV newsletter, feel free to contact me at: kh6htv@arrl.net - or - 303-594-2547.

W0BTV - DATV Repeater Coverage Area
Green shaded areas are strong signals.
Yellow shaded areas are weak signals of less than 10dB above digital threshold.

How Long Will a USB Flash Drive Last

Submitted By Bill Rinker, W6OAV
From the Westlakes ARC, http://westlakesarc.org.au

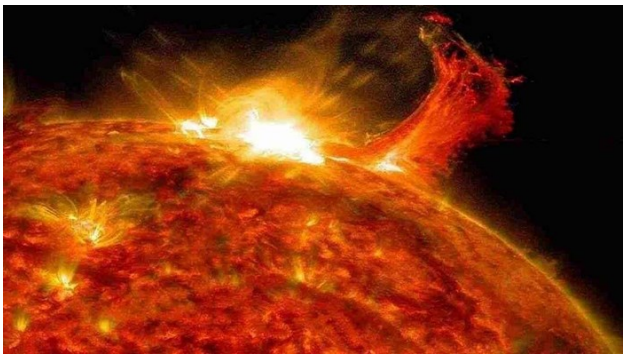
There are two parts to this question. 1. How many times can you write to a flash drive before it stops working? 2. How long will a flash drive retain its data? Wikipedia says, "1 million write or erase cycles with a 10 year data retention cycle." If you use 100 cycles a day, 1 million cycles could span 10,000 days or over 27 years. Some devices level the usage by autoshifting activity to underused sections of memory." However, things have changed with the newer, higher quality flash drives due to auto-shifting activity so a good flash drive can write 10,000 times to every single flash memory cell in the device. A flash device can then rotate which memory cells are written to and redirect the "read stream" of data to good cells in the event some cells become defective. Japanese scientists in 2012, wrote data 90,593,104 times to a flash drive before it died but data could still be read from it. So how long will a hold data? It will to be subject to the same electro/magnetic deterioration any other electronic or magnetic media is subject to: over time, the cells will lose their charge state, resulting in the discreet 1's and 0's being muddled. Flash drives have not been around long enough to make a concrete determination but as with any form of memory which relies on electro/magnetic charges, decay will happen.



Solar Geophysical Activity Report

Provided By Fred Hart, AA0JK

Monday, November 1st



Another solar flare and CME: Sunspot AR2887 erupted again on November 1st (0145 UT), producing a M1-class solar flare and a plasma wave that rippled across half of the solar disk.

A moderate solar wind storm was in progress.

The planetary K-index reached a level of 6. A moderately strong G2-class geomagnetic storm.
A minor crack opened in Earth's magnetic field, setting the stage for geomagnetic storms. BsubZ was

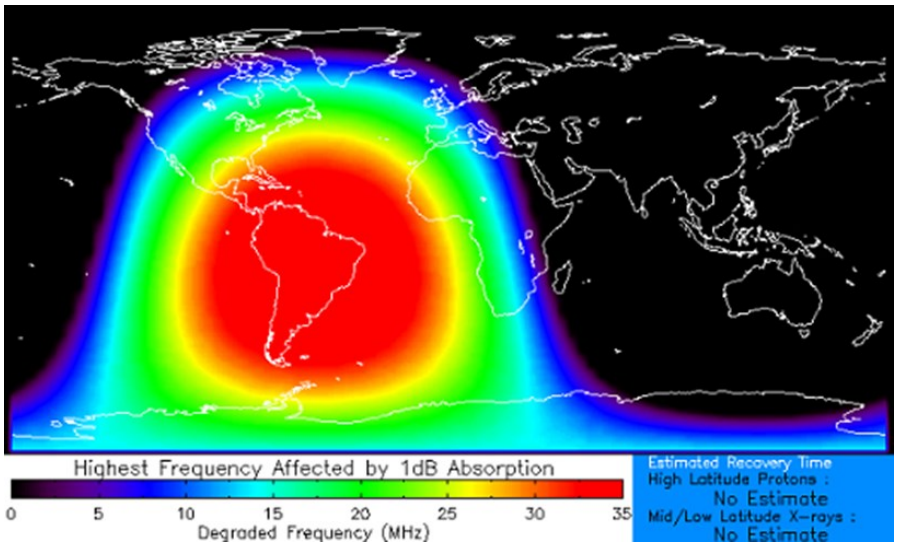
less than -7nt.

The USAF reported strong Type II and Type IV radio emissions generated by a shock front of a CME plowing through the sun's atmosphere at ~600 km/s. In addition, energetic particles accelerated at the leading edge of the CME had already reached Earth.

MAJOR X-CLASS SOLAR FLARE:

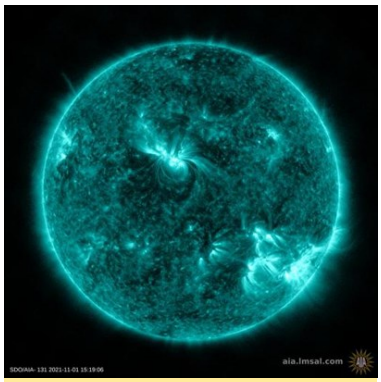
Back on Thursday, October 28th, AR2887 erupted sending out a Major X1-class solar flare. The blast created a massive tsunami of plasma in the sun's atmosphere.

During the flare, a pulse of X-rays and extreme UV radiation ionized the top of Earth's atmosphere, causing a strong shortwave radio blackout centered on South America:

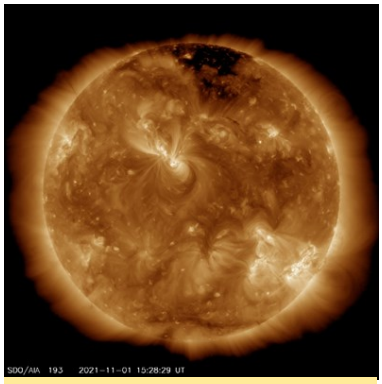


Aviators, mariners, and ham radio operators on the day-lit side of Earth may have noticed strange propagation effects at frequencies below 30 MHz.

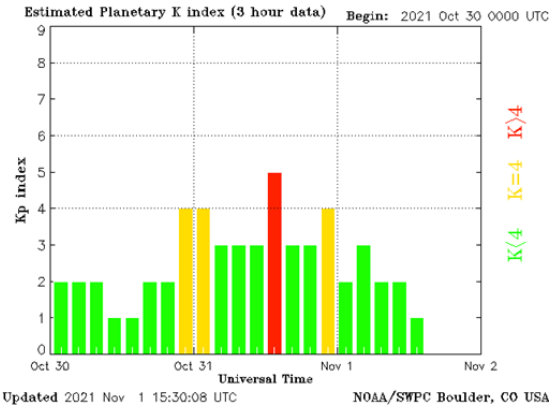
Sunspot AR2887 was not finished. It had already produced two M-class flares and an X-flare. The active region was directly facing Earth, so additional eruptions were geoeffective.



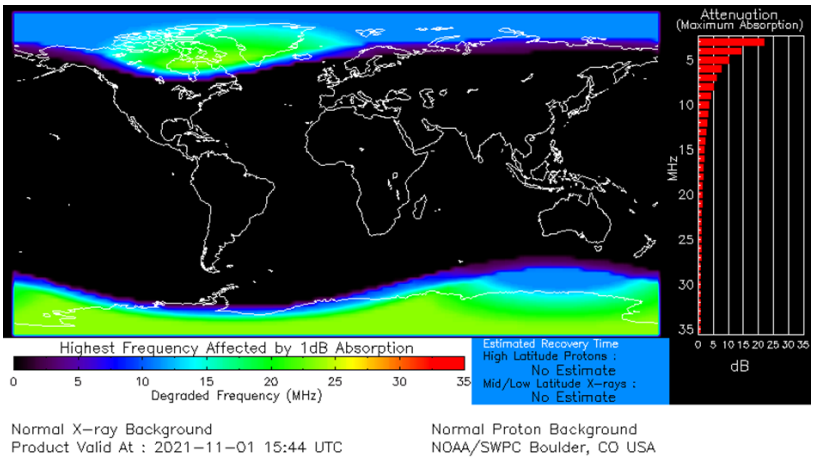
Credit: SDO/AIA 131 2021-11-01



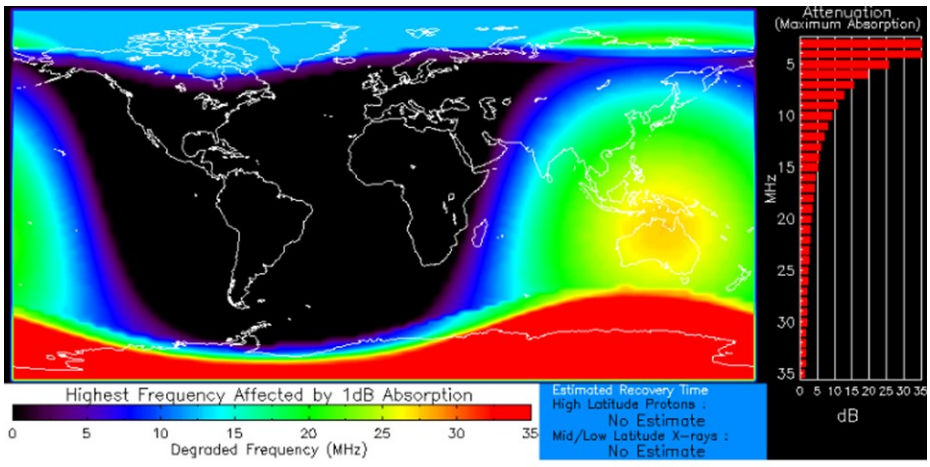
Credit: SDO/AIA 193 2021-11-01

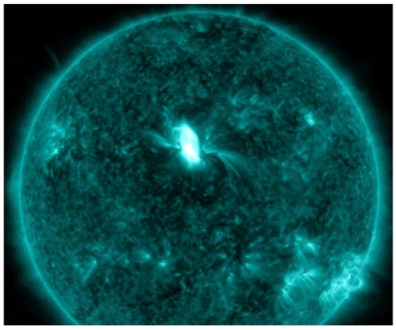


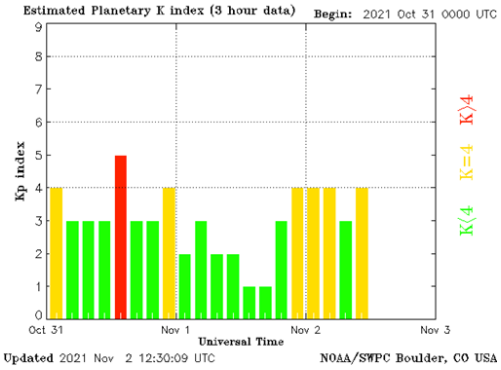
RADIO COMMUNICATIONS D REGION ABSORPTION

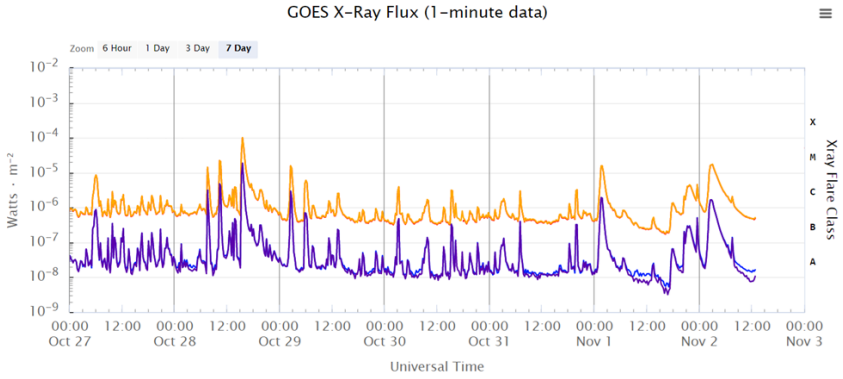


November 2nd - YET ANOTHER SOLAR FLARE: Sunspot AR2891 was directly facing Earth, and it had just exploded. An M1-class solar flare rocked the sunspot's magnetic canopy on November 2nd. It was a slow flare, starting at 0300 UT, and lasting for several hours.





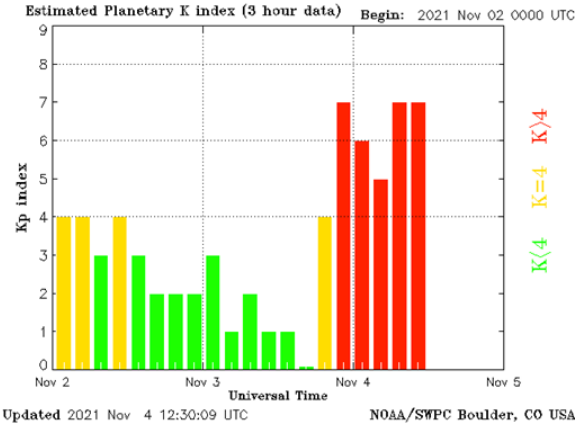




X-rays and extreme ultraviolet radiation from this flare ionized the top of Earth's atmosphere, causing a minor shortwave radio blackout over Australia and southeast Asia. Aviators, mariners and ham radio operators might have noticed unusual propagation effects at frequencies below ~25 MHz.

Thursday, November 4th - Cannibal CME sparks low latitude auroras: Auroras in California? Believe it. During the night, the glow of a strong G3 geomagnetic storm spread almost to Los Angeles.

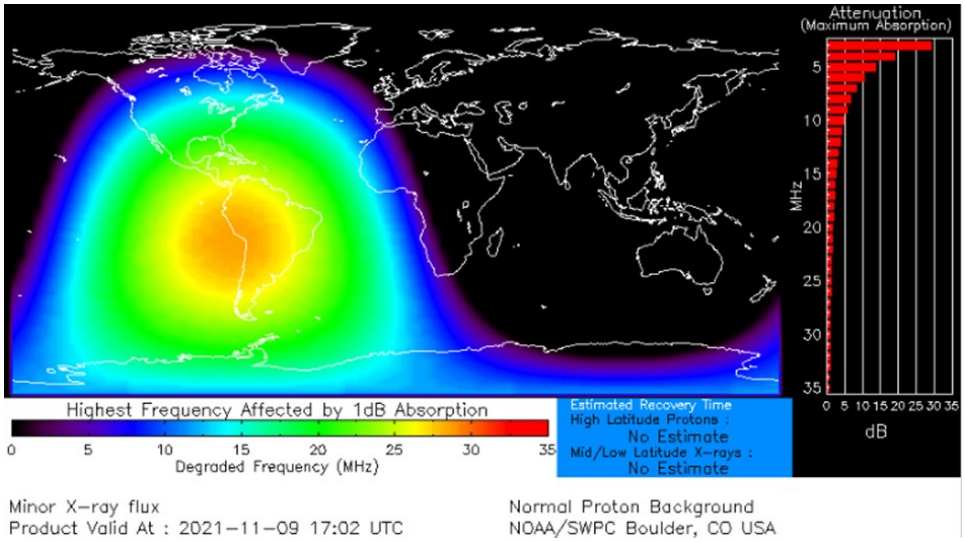
Planetary K-index: Was Kp= 7 strong

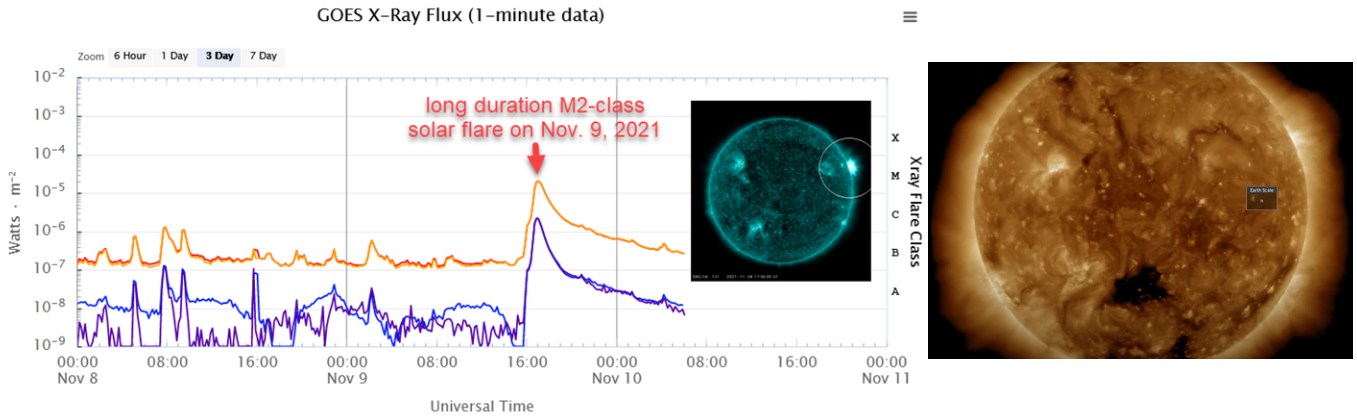


The storm was still underway: Earth's magnetic field was still reverberating from the Cannibal CME. Geomagnetic storm conditions were flickering between G1(minor) and G2 (moderately strong).

X-ray Solar Flares 6-hr max: C3 1453 UT November 04. 24-hr: C5 2116 UT November 04 03

Tuesday, November 4th - Far-side solar flare: An active region located just behind the sun's northeastern limb unleashed a strong M2-class solar flare on, November 4th at 17:01 UT. X-rays from the flare caused a minor shortwave radio blackout over the Americas. The explosion almost certainly produced a CME, but it wouldn't be Earth-directed because of the blast site's far-side location.

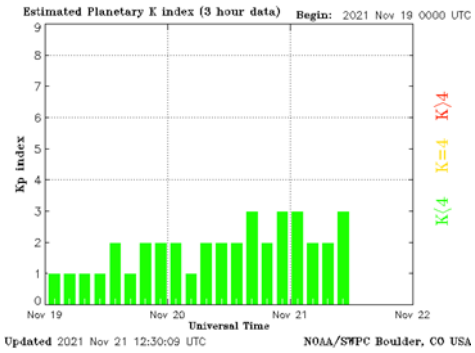


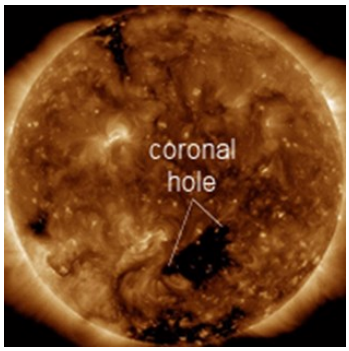


Sunday, November 21st - Solar wind had arrived. As predicted, a stream of solar wind was gently buffeting Earth's magnetic field. The gaseous material was flowing from a southern hole in the sun's atmosphere. So far, the weakly -magnetized stream was doing little to cause geomagnetic activity.

The Radio Sun 10.7 cm flux: 79 sfu

Planetary K-index: Now: Kp= 3 quiet. 24-hr max: Kp= 3 quiet





Monday, November 22nd - No chance of flares. The chance of strong flares was no more than 1%, according to NOAA forecasters. There were two sunspots on the solar disk; both had stable magnetic fields that were unlikely to erupt.

Active regions were not large. Flaring coronal holes were modest, and small. Filaments on center disc of the north were fading out in the upper corona. Solar wind was ramping up but very slowly.

Our star had been pretty quiet a few filaments and CME's around the limb, not aimed at earth. The earth facing disc was calm and even the plasma filaments and solar wind was waning.

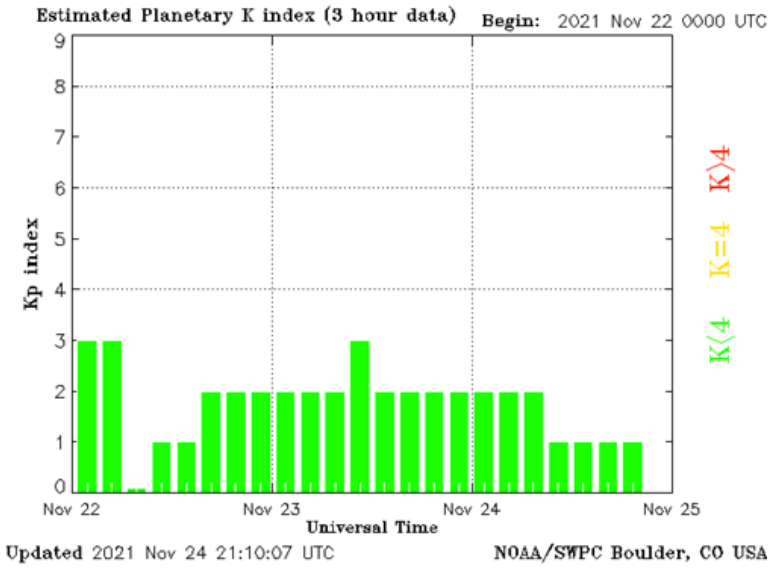
Wednesday, November 24th - The biggest geomagnetic storm in years erupted this month when a Cannibal CME slammed into Earth's magnetic field.

"Cannibal CME"– that is, a mashup of multiple solar storm clouds striking Earth all at once. Cannibal CMEs contain tangled magnetic fields and compressed plasma that often do a good job of disrupting HF frequencies.

The Radio Sun 10.7 cm flux: 80 sfu

Solar and geomagnetic activity was mostly quiet. Minor motions only as a southern coronal hole moved through center longitude.

An active region of note was incoming on the south facing disc, this one crested into view as a magnetic complex that had developing umbra.



Forecast:

Geomagnetic Forecast
Prepared by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center

Rationale: No G1 (Minor) or greater geomagnetic storms were expected. No significant transient or recurrent solar wind features were forecast.

NOAA Solar Radiation Activity Observation and Forecast

Solar radiation, as observed by NOAA GOES-16 over the preceding 24 hours, was below S-scale storm level thresholds.

NOAA Radio Blackout Activity and Forecast

No radio blackouts were observed over the preceding 24 hours.

73,

Fred
AA0JK

~Editor's Note: We would love to publish a monthly column profiling DRC members' stories about how they got into the ham radio hobby, their interests and backgrounds. The purpose of the column is to introduce DRC members to each other and to find commonalities between them. Please submit your story to drc.editor@gmail.com.

Past Round Table Pages

Provided By Woody Linwood, W0UI

A page from the April 1958 edition.

SIX METERS AND DOWN
by
"Red" WØTII

Things are looking up on the local six meter band these days. One of the look-up reasons (besides the satellite-jammed sky) being the addition of three new stations to the VHF--KØBTO, IYC, and MDR. That puts the figure for active stations in the Denver area at better than twenty. The DX this summer will have a good showing of Colorado stations; maybe we will have a WAS by the end of September. Well, we are the optomistic type!

Another reason for feeling mighty perky is the good prospect of a six meter net (of course, not the kind the men in white use in spite of snide comments from hams not seeing the six meter light) for the local group. As it stands right now, the net will be on 50.3 mc., the time and dates of operation have yet to be decided. In addition to net use, this frequency will be on tap for local calling too. So any of the prospective six meter men can monitor that part of the dial to get an idea of what goes with the VHF gang.

DX was scarce during March, but two of the boys, WØIC and AZT did get hooked up with South America....a first from that area to here.

One short E opening to California occured during the first of the month, but that was the extent of the activity for the thirty-one day period. Oh well, we need to see our families and friends once in awhile anyway. Again, welcome to the new stations and the best of DX to all hands.

IS TIME A VARIABLE?

Time signals by radio from a satellite this year may possibly throw light on one of the biggest questions in science. Was Einstein right when he predicted scientists would find that the time scale would become shorter, or faster, as the gravitational potential becomes weaker? Listen for the answer on Radio Satellite Number "X"! An atomic "watch" is being planned for the Satellite. Cost? an atomic clock at Boulder reportedly cost over $50,000.00

CD DRILL HELD

Sunday, March 30th, the Denver Civil Defense Mutual Aid Area staged a mock drill from headquarters at Red Rocks with Jefferson, Arapahoe and Adams Counties participating.

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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

Random Site Of The Month
Paint Mines

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

The Round Table Archive

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

The Round Table Article Index

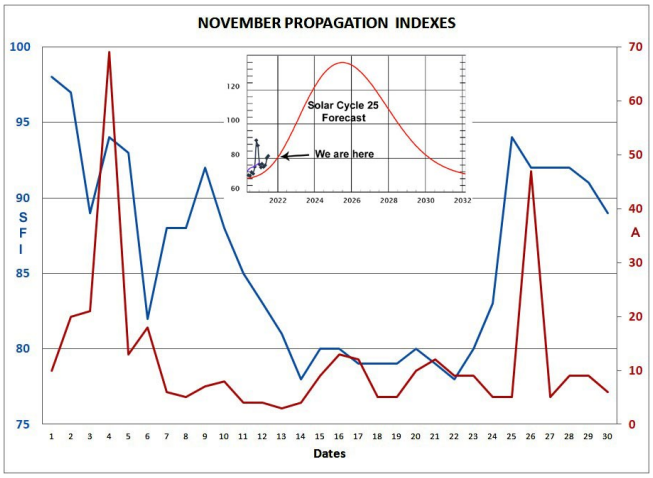
Go to: http://www.w0tx.org/RoundtableArchive/-RoundTables-Index.pdf

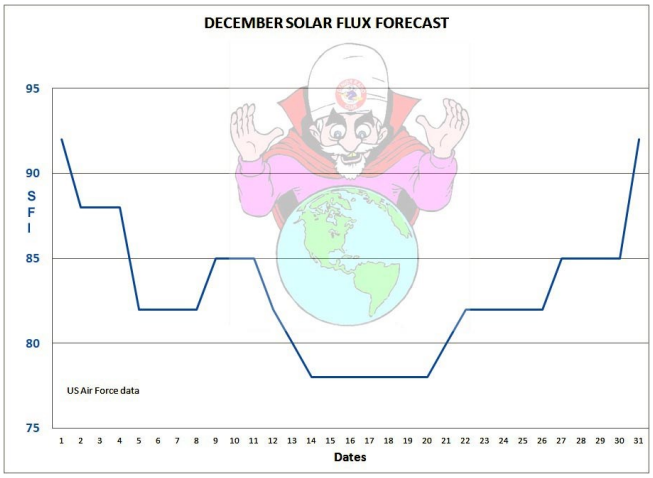
Past & Future Propagation Conditions

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





Upcoming Events

Hamfests & Conventions

Event	Date	Location	Sponsor Website
Winter Hamfest	1/15/22	The Ranch, Loveland	ncarc.net
The Swapfest	2/20/22	Adams County Fairgrounds	n0ara.org

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

The Denver Radio Club
is an ARRL Special Service Club

Support your hobby and *join the ARRL today!*

http://www.arrl.org/

Attention

SUPPORT THE DRC FROM YOUR AMAZON PURCHASES

You can now support your Denver Radio Club when you make purchases from Amazon.com. Amazon Smile donates 0.5% of your purchase to the non-profit (501.c.3) organization of your choice. This is at no additional cost to you. To support the DRC just visit smileamazon.com. Select Denver Radio Club, Inc. as the organization you want to support and proceed with your order as usual. Amazon Smile will credit the DRC automatically. Thank you for your support.

DRC Repeaters

BAND	Freq / Shift / PL Tone	Additional Information
6m	53.090MHz (-1MHz) 107.2Hz PL	
Packet	145.05MHz	**Metro Denver Area Coverage**
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**

DECEMBER 2021

DRC Net Sundays at 8:30 p.m. on 145.490 / 448.625 (no PL)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1 **Learning Net** 7:30 p.m. 145.490 / 448.625 (No PL)	**2**	**3** **160 Meter** - Begins 2200 UTC	**4** New Moon
5 **160 Meter** - Ends 1559 UTC	**6** 	**7**	**8** **Learning Net** 7:30 p.m. 145.490 / 448.625 (No PL)	**9**	**10** First Quarter	**11** **10 Meter** - Begins 0000 UTC
12 **10 Meter** - Ends 2359 UTC	**13**	**14**	**15** **DRC Online Meeting** Elmer 6 p.m. Meeting 7 p.m.	**16**	**17** 	**18** **EME Contest - 50 to 1296 MHz** Begins 0000 UTC Full Moon
19 **Rookie Roundup - CW** 1800 - 2359 UTC **EME Contest - 50 to 1296 MHz** Ends 2359 UTC	**20**	**21**	**22** **Learning Net** 7:30 p.m. 145.490 / 448.625 (No PL)	**23**	**24**	**25** 
26 Last Quarter	**27**	**28**	**29** **Learning Net** 7:30 p.m. 145.490 / 448.625 (No PL)	**30**	**31**	

See arrl.org/contest-calendar for additional details about contests.

DRC Board of Directors

President	W0GV	Gerry Villhauer	303-467-0223	w0gv@hotmail.com
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Board Member	WG0N	Dave Baysinger	303-987-0246	wg0n@arrl.net
Board Member	KB0CHT	Jeff Irvin	*Check Roster*	*Check Roster*

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EmComm Coordinator	AD0UZ	Brennan Pate	*Check Roster*	emcomm@w0tx.org
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Tech. Committee Chair	W6OAV	Bill Rinker	*Check Roster*	*Check Roster*
Trustee	WW0LF	Orlen Wolf	303-279-6264	owolf@mines.edu
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Website & YouTube	N0LAJ	Bill Hester	*Check Roster*	w0tx@w0tx.org

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…

Editor's Note

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