

# E ROUND TABLE

# Monthly Newsletter Of The Denver Radio Club

Since 1917 October 2021

# PRESIDENT'S MESSAGE

BY GERRY VILLHAUER, W0GV

Hello DRC Members,

As I write this edition of my President's Message it is still a near ninety-degree day but, it looks like the 90's are over with and we will be into the 80's and 70's real soon. I am happy to see the fall weather.

I would like to welcome Mark Thomas (N0XRX) as our newest board member. Mark, thanks for stepping up to this club position. And, thanks to Jan Dickover (WY0J) for his years of service as a board member.

We will NOT be doing our annual Holiday/Christmas Party again this year. The board has discussed it in great detail. It is felt that with the up and down of the COVID situation and not knowing what the City of Denver will do, as far as occupancy regulations, it is too big a risk to go forward with plans. As you know, it takes a lot of work behind the scenes to plan and execute an event of this size and the risk of cancellation is just too great. We are sorry for this decision, but feel it is the correct decision. Let's all hope for better luck next year.

Going along with the above, we will continue with our monthly virtual club meetings for the for seeable future. Besides the COVID problems, we are still without a meeting place. It looks like Jefferson County will not be relaxing their decision of letting any outside groups use the meeting rooms at this time.

I am happy to report the 220 MHz repeater is back in service and performing well. Please give it a try. We need to use this band more. If you recall, we hams have already lost a portion of the band to commercial use and there is always the chance of loosing the whole band if it is not being utilized. Commercial entities are always on the look out for more bands to occupy.

Thanks to Alex Schwarz (VE7DXW) for his interesting presentation on RF Signatures to detect earth quakes.

Our October program will be presented by Stan Trout (WB2SHR). Stan will be sharing his personal experiences operating ham radio in HOA restricted areas. Stan will also share his experience with his Attic Antenna Farm in his antenna restricted home in Denver. Mark your calendars for our meeting October 20th.

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



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W0TX w0tx.org

# 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:

Bill Broadley - KM6PHH	Edgar Y Reed - KF0AAK
Denali Broadley - KM6VHK	Timothy Thatcher - KC0KZA
Jim Berbee - AE0NV	Mike Boeke

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.

#### September topics we discussed:

- End-fed antenna and high noise problem. Trouble-shooting antenna installation.
- Whats that sound? CQ transmission by VE3DKU on a spark-gap transmitter.
- Random Wire Antenna Noise 80M
- Filter Simulation/Circuit Design Request
- What's that Sound? VE3DKU, sending CQ on a Spark-Gap transmitter
- Radio Direction Finding

- Technician license lecture series...Good supplement to go along with your text study materials.
- RadioSignals
- N9WIB
- Diamond BB7V Vertical Telescoping Antenna / Coax counterpoise / isolation RU-1:1 Unun
- Baluns LDG Electronics
- Vertical antennas / Where is the counterpoise?
- Random Wire Antennas: https://youtu.be/lpGzBPtkxRg
- Antenna Radials Down to Earth: https://youtu.be/DAygiXW8-0E
- Programming a Baofeng Radio
- How To Program Baofeng Radio Talkie Man: https://talkieman.com/how-to-program-baofeng-radio/
- Home Brew J-Pole antenna: https://youtu.be/oZD55UvC7mY

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 <u>W0TX web-site</u>, <u>w0tx@w0tx.org</u>, or <u>elmer@w0tx.org</u>.

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: <a href="https://dcasler.com/ham-radio/">https://dcasler.com/ham-radio/</a>

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

#### OCTOBER 20TH PRESENTATION ANNOUNCEMENT

By STAN TROUT, WB2SHR

Can hams be happy living in an HOA? Some Ideas.

HOA's seem to be commonplace in Colorado. Most HOA's have restrictions on outside antennas, including but not limited to ham radio antennas. That might end the story right there, but hams have a solution; we are RESOURCEFUL.

The October presentation is adapted from a presentation at the Villages in Florida and including my own personal experience operating in an HOA, I will present some ways that hams have found to succeed in this environment.

#### Stan's Bio:

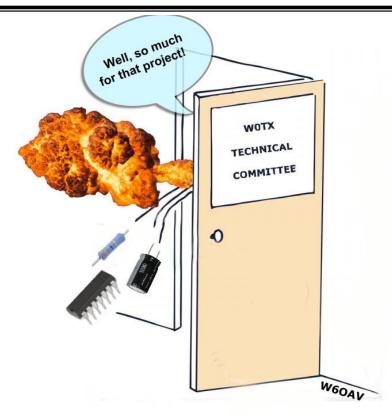
Stan Trout's (WB2SHR) adventure in radio began circa 1960, when his grandfather, an electrical appliance salesman, gave him a shortwave radio. Subsequently, he learned the importance of a good antenna to hear stations from afar. He was first licensed as a Technician in 1974, passed the 13 wpm code requirement for General and the Advanced exam in 1987, and finally passed the Amateur Extra exam in 2018. Since Stan has moved around the US for work, he has enjoyed various ham activities in each locale. Some examples: special events stations at Alma College, mobile support for the Hilly Hundred bicycle event in Indiana, 2m FM, SSB and CW, and some HF, mostly 40m CW in the Novice bands.

Since 2011, Stan has lived in the HOA controlled community of Stoney Brook in the Denver Tech Center, where he maintains a small antenna farm in his attic. For the last 6 years he has served on the HOA board of directors and for the last 3 years has served as president of the HOA.

Professionally, Stan is a metallurgist with a Ph.D. from the University of Pennsylvania. His specialty is magnetic materials and a row of elements at the bottom of the periodic table called the rare earths. He runs a small consulting company called Spontaneous Materials and teaches Materials Science at Metro State, when he is not on the radio.

**~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 <a href="mailto:drc.editor@gmail.com">drc.editor@gmail.com</a>.

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# WHAT'S IN A REPEATER?

By Onno, VK6FLAB

Today I'm going to talk about repeaters. These invisible services that sit on a particular frequency and do magic things to your signal.

First of all, the best way to think of a repeater is to think of it as two radios. One is the receiver, the other the transmitter. The way it works is that the receiver hears your signal and sends that audio to the transmitter which sends it out over the air.

For this to work, there need to be two frequencies in use, the one that you're transmitting on and the one that the repeater is transmitting on.

From this simple idea, many different things flow. There is no rule that states that the receiver and the transmitter need to be in the same place, let alone on the same band; if they're on different bands, it's called a cross-band repeater.

If the receiver and the transmitter are on the same band, the system needs to deal with the fact that a strong signal is being transmitted by the repeater right next to where the receiver is. If you're not careful, the transmitter will overwhelm or de-sense the receiver, making it harder to get your signal into the repeater.

Several techniques are used, a contraption called a cavity filter is set-up to specifically let either the receive frequency through, or to block all frequencies except the transmit frequency. Some combine both of these techniques to make the repeater hear weak stations better.

If the receiver and transmitter are on the same band, the difference between the two frequencies in use is called the offset. It varies per band. On 2 meters, the offset is normally 600 kHz, but it varies, on 70cm the offset is 5 MHz, but on 10m, the offset is 100 kHz. So different bands use different configurations and of course each of these is subject to local variation. There may be local interference on the standard offset, so it may be varied.

There are some other things going on with repeaters. You can have a repeater that receives and transmits on the same frequency, it's called a parrot repeater and it sits there waiting for you to transmit, stores the incoming audio for a set period and then when you stop transmitting, it sends out the audio on the same frequency. This is useful to see how you sound on-air.

Other techniques include adding computers to create IRLP, Echolink and AllStar Link. Essentially the receiver is connected to a computer which sends the audio across the Internet to another computer which in turn sends out the audio to another transmitter. After you stop transmitting, the chain is reversed and the other station can talk to you via a reverse path.

There are also specialized repeaters that can listen in one mode, like FM and transmit in another, like AM, or SSB. This allows a 2m user to use HF from their FM hand-held radio.

If all that's not enough, there are other things possible with repeaters. You can use a special tone to identify to the receiver that your signal is a valid audio signal. This is used in environments where noisy local signals often trigger the repeater, resulting in ongoing kerplunking of the transmitter.

Next time you key up your local repeater, have a think about what's happening when you key-up your radio and say thanks to the owner of the repeater who spent time and effort, not to mention money, to make this invisible friend on the air work for you.

To listen to the podcast, visit the website: <a href="mailto:podcasts.itmaze.com.au/foundations/">podcasts.itmaze.com.au/foundations/</a> and scroll to the bottom for the latest episode. Feel free to get in touch directly via email: <a href="mailto:onno@itmaze.com.au">onno@itmaze.com.au</a>, or follow on twitter: <a href="mailto:@vk6flab/">@vk6flab/</a>)

#### Wyoming HamCon 2021—Cancelled

PROVIDED BY R.J BRAGG, WY7AA, PRESIDENT OF SHY-WY ARC

The Wyoming ARRL Section Convention that was to be held on October 9th, has been cancelled. See <a href="https://www.wyhamcon.org/site">wyhamcon.org/site</a> for more details.



# THE WORLD'S FIRST HT

BY BILL RINKER, W6OAV

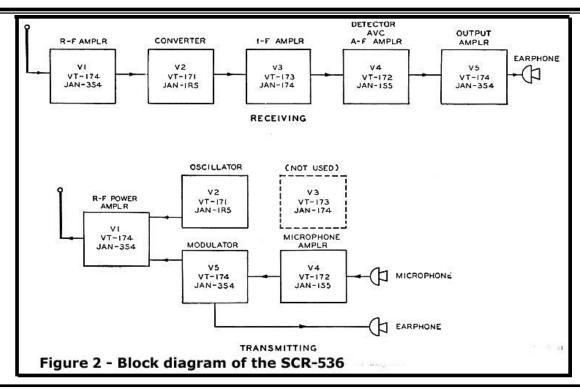
The world's first handheld transceiver (HT) was the SCR-536. (See figure 1). It was developed in 1940 for use during WW II. The HT transmitted 360 milliwatts AM on any one of 50 channels between 3.5 and 6.0 MHz. Plug in crystals and coils determined the channel frequency.

The unit contained five vacuum tubes and weighed over five pounds. It had no separate on/off power switch. Instead the HT turned on when the 40 inch telescoping antenna was extended and off when it was retracted. Due to the short antenna, the range of the unit varied from approximately one mile over land to 3 miles over water.

A 1.5 volt dry battery powered the filaments and a 103.5 volt dry battery powered the plates. Battery life was about one day for normal use. The two batteries weighed about 1.6 pounds

A very detailed technical manual TM 11-235 covering all aspects of the SCR-536 is available at <a href="https://www.ibiblio.org/hyperwar/USA/ref/TM/pdfs/TM11-235.pdf">https://www.ibiblio.org/hyperwar/USA/ref/TM/pdfs/TM11-235.pdf</a>

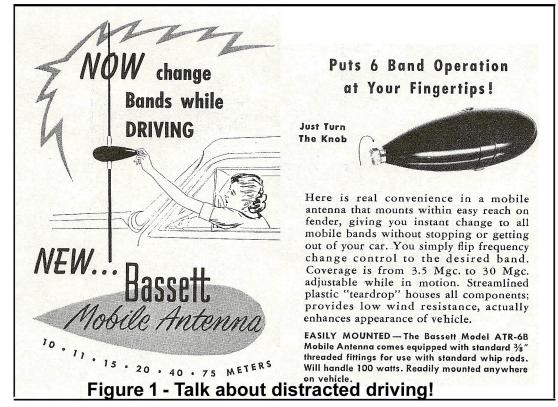




#### **DISTRACTED MOBILE DRIVING**

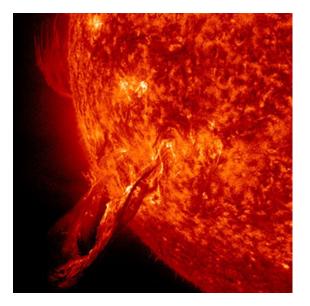
BY BILL RINKER, W6OAV

Figure 1 is a 1950's ad that I came across the other day. It's from a long defunct ham magazine. In today's world can you imagine driving down the highway while reaching out to change bands!

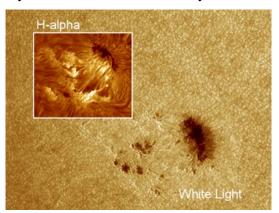


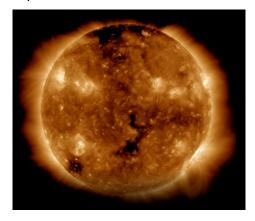
# SOLAR GEOPHYSICAL ACTIVITY REPORT

PROVIDED BY FRED HART, AA0JK



New sunspot AR2863 did not exist September first, but within 24 hours it grew rapidly to a size larger than Earth. The active region in the Suns southern hemisphere was quite large in both white light and H -alpha, and you could see a lot of activity between the main spots.



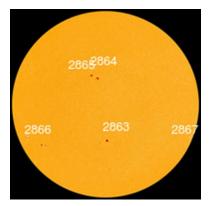


This near equatorial hole was at heliographic longitude. And solar wind was expected to reach earth over the following weekend.

During the first week of September, the sun had "six sunspot groups. They were popping up all over the

surface of the solar disk.

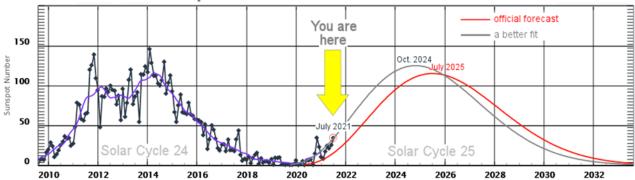
The sudden profusion of so many sunspots is a sign of strength for young Solar Cycle 25. The solar cycle is actually running ahead of schedule. NOAA and NASA predicted that it will peak in the year 2025. Outbreaks like this one support the idea that Solar Max could come a year early.



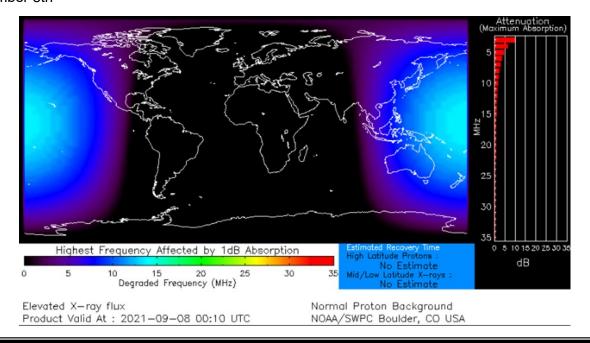
Credit: SDO/HMI

Suddenly, the sun is peppered with sunspots--at least 6 groups (although only 5 have received official numbers).

# Sunspot Counts: Predicted vs. Actual



# September 8th



An earth directed solar flare explosion on September 8th , erupted just after UT midnight, as sunspot AR2864 unleashed a C2-class flare. A pulse of UV radiation ionized earth's atmosphere, briefly disturbing shortwave radio propagation around the Pacific Rim.

September 13th, a solar prominence blew its top.

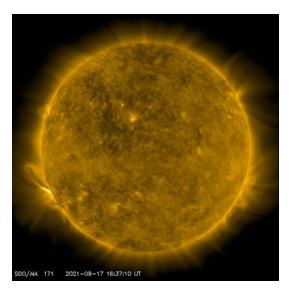
A huge solar prominence, one of the largest in years coiled over the suns northeastern limb.



A prominence is a giant cloud of hydrogen held above the surface of the sun by magnetic fields. This was one of the biggest in years. At its apex, it curled around nearly 20% of the sun's circumference. Such large structures made of plasma and magnetism rarely last long and, as expected, the prominence collapsed on September 12th, hurling part of its plasma into space.

The blast hurled a CME toward earth. Initial modeling by NOAA suggested a near miss, or glancing blow September16-17. The fact that the CME overlapped a least two other CME's, made unraveling its trajectory tricky and unpredictable.

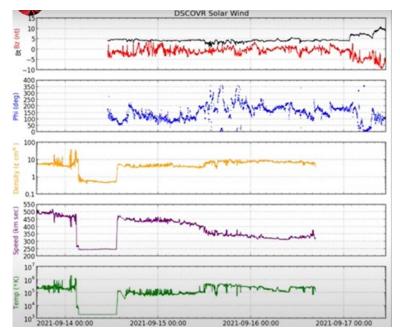
17th



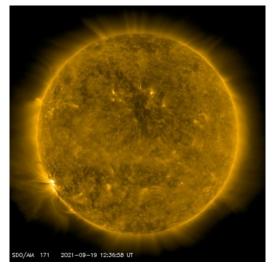
The sun in 171 angstrom as seen by NASA's SDO

Bottom left a few filaments destabilized. A small active region behind the rim let loose a small CME. A C-class solar flare also erupted behind the limb.

No solar wind enhancements to report, NOAA and NASA satellites were failing, missing data, making it difficult to predict impact.

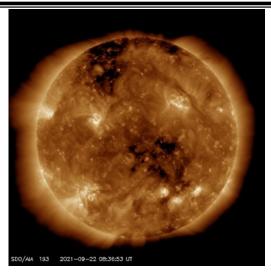


On the 18th, a plume of plasma leaped over the southeastern edge of the sun and fell back to the surface.

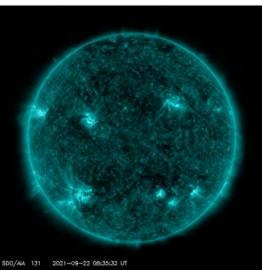


The source of the eruption was the return of sunspot AR2860, which was coming back after a two-week trip around the far-side of the sun. During its previous appearance in late August, the sunspot produced one M-class flare and two C-class flares. We shall soon see if AR2860 has lost any of its potency as it rotates into earth view.

22nd



Credit SDO/AA 193



Credit SDO/AA 131

We have here viable active regions in 193 angstroms and in 131 angstrom. We also see the coronal holes. The south central coronal hole was magnetically connecting with Earth and its solar wind was expected to arrive by the end of the week.

Small solar flares were coming back as the active regions start to pepper the face of the solar disc. Filaments were becoming less stable, all releases were directed away from earth at the time, thankfully.

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

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

There was a slight chance for R1-R2 (Minor-Moderate) radio blackouts.

73,

Fred AA0JK

# PAST ROUND TABLE PAGES

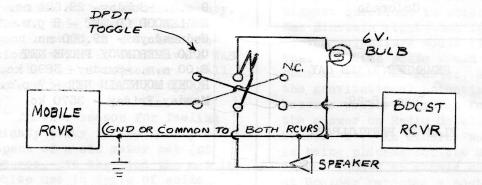
PROVIDED BY WOODY LINWOOD, WOUL

A page from the April 1958 edition.

#### CONELRAD FOR THE MOBILE

By WØBWJ

What is your Conelrad provision in your mobile? I suspect that not many mobiles have any really satisfactory provision for a conelrad monitor system. If you have separate mobile amateur and broadcast receivers, so that both may be placed in simultaneous operation, here is a simple and effective means for switching one speaker to either receiver and provide a monitoring system. In my case the Morrow fixed-tuned-receiver unit and the Motorola car radio provides quick and easy change-over.



The AC voltage level at the speaker side of the output xformer of the average car radio will peak about 6 volts under a fully modulated signal, with volume control turned wide open. At carrier conditions without modulation the AC output voltage is zero. The result is a changing voltage which can be visually monitored. The DPDT switch selects either receiver, and when listening to the ham bands, places the 6 volt bulb across the broadcast receiver output. The bulb cannot be placed permanently across the output for it will block out the speaker when desiring to listen to broadcast stations.

Locate the switch and the light in a convenient place for easy visual monitoring while you are on the air. Tune in a local station and turn up the gain on the BC receiver until sufficient brilliance is obtained for easy visual reference. If the bulb fails to glow or flicker with modulation for a period of less than a minute, switch the speaker back to the BC receiver and check for a possible alert. In addition, the light when switched across the ham receiver (when you are listening to rock-n-roll) will act as a visual monitor of band activity. You are now meeting all the requirements of Conelrad.

-7-

#### **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



#### THE ROUND TABLE ARCHIVE

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

#### THE ROUND TABLE ARTICLE INDEX

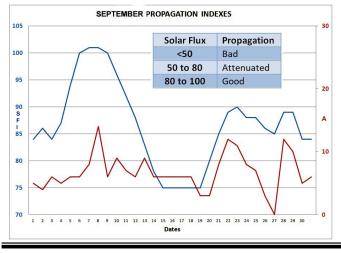
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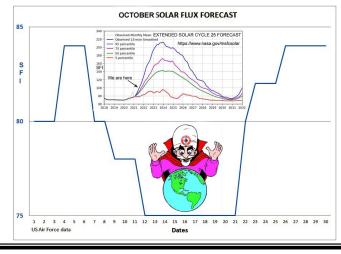
# **PAST & FUTURE PROPAGATION CONDITIONS**

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
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None

# **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
California	10/02/2021	10/03/2021	California QSO Party	
Nevada	10/08/2021	10/10/2021	Sierra Nevada Amateur Radio Society	
Arizona	10/09/2021	10/10/2021	Arizona QSO Party	
Pennsylvania	10/09/2021	10/10/2021	The PA QSO Party Association	
South Dakota	10/09/2021	10/10/2021	Prairie Dog Amateur Radio Club	
New York	10/16/2021	10/17/2021	New York State QSO Party	
Illinois	10/17/2021	10/18/2021	Western Illinois Amateur Radio Club	



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Support your hobby and *join the ARRL today!* 

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#### **ATTENTION**

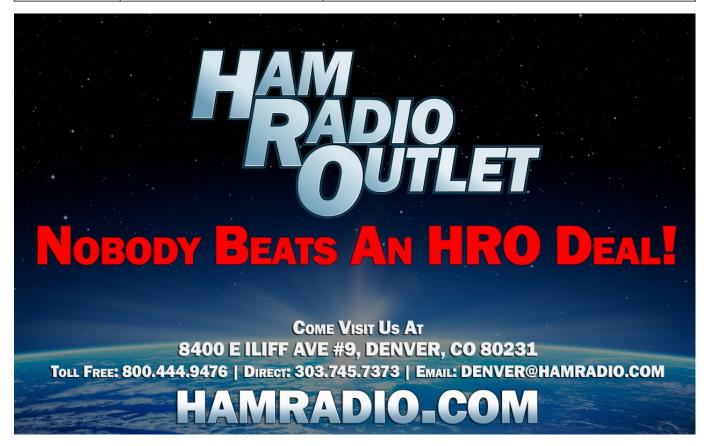
*MMMMMMMMMMMMM* 

# 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



#### **OCTOBER 2021** DRC Net Sundays at 8:30 p.m. on 145.490 / 448.625 (no PL) Monday Wednesday **Thursday** Friday Sunday Tuesday Saturday 1 2 3 5 7 8 9 4 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL) New Moon 12 16 10 11 13 14 15 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL) First Quarter 17 21 22 23 18 19 20 **DRC Online Meeting** School Club Roundup -Begins 1300 UTC **EME Contest -**School Club Roundup Elmer 6 p.m. Meeting 7 p.m. Starts 0000 UTC Ends 2359 UTC Full Moon 24 25 26 27 28 29 30 Learning Net **EME Contest -**7:30 p.m. Ends 2359 145.490 / 448.625 UTC (No PL) Last 31 Quarter

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

# **DRC BOARD OF DIRECTORS**

President	W0GV	Gerry Villhauer	303-467-0223	w0gv@hotmail.com
Vice-President	K0KPS	Kevin Schmidt	303-475-9234	k0kps@arrl.net
Secretary	WW0LF	Orlen Wolf	303-279-6264	owolf@mines.edu
Treasurer	N0CRZ	Cathy Villhauer	303-467-0223	crazycathy56@gmail.com
Board Member	N0XRX	Mark Thomas	720-438-0848	n0xrxradio@gmail.com
Board Member	K0TOR	Jim Beall	303-798-2351	k0tor@arrl.net
Board Member	WG0N	Dave Baysinger	303-987-0246	wg0n@arrl.net
Board Member	KB0CHT	Jeff Irvin	Check Roster	Check Roster

# **DRC STAFF AND VOLUNTEERS**

Benevolent		Carolyn Wolf	303-279-1328	Contact owolf@mines.edu
Club Librarian	WG0N	Dave Baysinger	303-987-0246	wg0n@arrl.net
<b>Education Coordinator</b>	AA0JK	Fred Hart	303-420-3536	elmer@w0tx.org
EmComm Coordinator	KE0HFH	Michael Vespoli	303-215-8862	emcomm@w0tx.org
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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 ore editor@gmail.com.

Subject: I'm located in...

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