



ROUNDTABLE

The Denver Radio Club Newsletter

Since 1917

March 2020

PRESIDENT'S MESSAGE

BY GERRY VILLHAUER, W0GV

Hello DRC Members,

Here we are, March 2020...where does the time go? We can look for warmer weather from now on. I am not saying it will not snow in March or April, but it will not be as bone chilling cold as the previous month.

I do not have much to report on this month. We have projects to do when the weather gets warmer. The first project will be replacing the 220 repeater antenna in the spring. We have been hearing more traffic on the 220. It is a great band and we have a new repeater in place. Please consider getting on 220; it is a great band, give it a try.

Thanks to Larry Irons (K0LAI) for a very interesting and well presented program on Automatic Packet Reporting System (APRS). We learned that APRS has much more capability than most of us knew about. The weather that evening was not very good but, we had great attendance. Thanks to all who came out for our meeting; your participation is very much appreciated.

Our program for this month will be presented by yours truly, Gerry (W0GV). I have been working in aviation most of my career, primarily in Avionics; which means aviation electronics. Air navigation has gone through a major change, especially with regard to ground based RADAR navigation, used by the FAA for en-route and terminal navigation. This system has been in use since the 50's or earlier. We will go through some basics of RADAR navigation and then transition to the new system, ADS-B. This is the acronym for Automatic Dependent Surveillance-Broadcast. I will show you the basics of both systems and why the transition to ADS-B was necessary. With ADS-B you can purchase or build a system using SDR technology and computers like Raspberry Pi, to monitor aviation activity at home; something not possible with RADAR. Hope to see you there, Wednesday March 18th.

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 Roundtable.

73 for now,

Gerry
W0GV
President

NOTE: THE BOARD MEETING ON MARCH 18TH WILL BE AN "ON THE AIR MEETING." 145.490 / 448.625. 100 HZ PL.



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:

Billy Anderson - KI0FV	Keith Gooldy - KE0YZU
Eric Markus - W0IBA	Jamison Ziesch - KE0ZJY
Cedric Kron - WA2FTV	Matthew Pierson - N8MCP

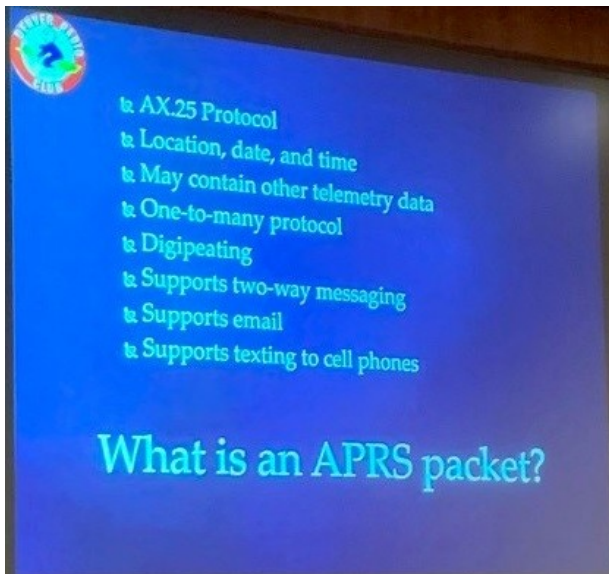
We have a number of activities throughout the year and we'd like very much for you to participate in serving your community. If you have questions please feel free to ask on any of the repeaters or see the contact information on the last page of this publication.

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.

FEBRUARY MEETING - WHAT'D I MISS?

By BILL RINKER, W6OAV

In spite of a fairly heavy snow storm, attendance was good. After introductions, the meeting was turned over to the guest speakers Larry Irons, K0LAI, and Mike Sullivan, K0GRC. The title of their PowerPoint was "Introduction to APRS". Larry and Mike covered the history of APRS, the APRS protocol, APRS hardware and software and typical APRS operation including interactive sending and receiving texts. Larry and Mike completed the presentation by providing URLs for real time viewing of APRS activities and URLs containing references to the APRS protocol.



SPEAKERS NEEDED

By BILL RINKER, W6OAV

We are looking for folks who are interested in giving a presentation at any upcoming DRC meeting.

If you are interested, contact Bill at w6oav@arrl.net.



TECHNICAL COMMITTEE REPORT

By BILL RINKER, W6OAV

The February meeting did not take place due to several members not being able to attend due to the snowstorm. The following is an overview of current issues:

DRC/TSA Aurora Site

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

Status: The Board has reviewed the MOU received from the TSA. No commitment from the TSA.

Internet Access at Station 4

Goal: Obtain access to the Fire station Internet.

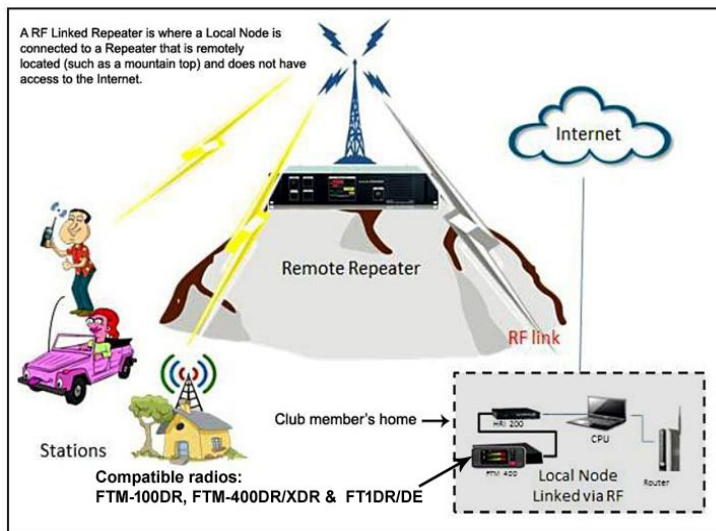
Requirements:

- 8 Mbps or faster.
- Global IP address.
- Static IP address for PC/Wires-X.
- UDP ports 46100, 46110, 46112, 46114, 46120 & 46122 forwarded to PC/Wires-X.
- TCP port 46190 open.
- Possible sandboxing required?

C4FM Repeater to Wires-X

Goal: If compatible Internet not available, is this a good alternative?

Status: Remote Wire-X node at a member’s home (see figure below). (Ref: WIRES X – The Bible). Note: This mirrors our Echolink configuration.



Replace 220 Repeater Antennas

Goal: Improve coverage for the new repeater.

Status: Schedule a work crew when weather permits.

Station 4 Remote Power Control.

Status: Shelve this item until we have internet access at Station 4

LEARNING NET REPORT

BY FRED HART, AA0JK

Our group gathers here to discuss, and respond to topics aimed at enhancing a better understanding of our hobby. The net is open to all and we encourage your participation.

Topics:

- Mag-Loop Antennas
- Tape Measure Loop Antenna
- MFJ-935B Loop Tuner with Current Meter, Usable from 3.5-30MHZ, 150W Max Power Rating.
[youtube.com/watch?v=E56wllpfZgA](https://www.youtube.com/watch?v=E56wllpfZgA)
- Portable Loop Antenna (QRP), [youtu.be/ujq6OBFPYoc](https://www.youtube.com/watch?v=ujq6OBFPYoc), [youtu.be/kDhHQQ1K2oo](https://www.youtube.com/watch?v=kDhHQQ1K2oo)
- MFJ Magnetic Loop antenna vs vertical - which is better? [youtu.be/LGR4_nzMMt4](https://www.youtube.com/watch?v=LGR4_nzMMt4)
- MFJ-936B Mag-Loop Tuner, [youtu.be/OR22DbliitRY](https://www.youtube.com/watch?v=OR22DbliitRY)
- Small Antennas for Small Spaces 2nd Edition, ARRL Item No. 0512, [arrl.org/shop/search.php](http://www.arrl.org/shop/search.php)
- Amateur Radio "Q" signals, [sckans.edu/~sireland/radio/q_signals.html](http://www.sckans.edu/~sireland/radio/q_signals.html)
- What is SKYWARN? [weather.gov/bou/skywarn](http://www.weather.gov/bou/skywarn)
- How to become a spotter? [weather.gov/bou/spot_training](http://www.weather.gov/bou/spot_training)
- Spotter Training-Highlands Ranch:
When - Thu, March 19, 6:00pm – 8:30pm
[weather.gov/bou/spot_training](http://www.weather.gov/bou/spot_training)
meted.ucar.edu/training_course.php?id=23
Skywarn contact Scott.Entrekin@noaa.gov
- General Class Videos Now Available on Thumb Drive
dcasler.com/2020/02/03/general-class-videos-now-available-on-thumb-drive-for-us39-99/
- Extra Question Pool
- Ham License – On-Line Help for Your Self Study:
dcasler.com/ham-radio/general/
dcasler.com/ham-radio/extra/
- ARRL: Your First Amateur Radio HF Station, Item No. 0079
- HamCon Colorado is the Rocky Mountain Division ARRL Convention. August 8 – 9
CU South Denver
10035 S Peoria Street
Lone Tree, CO 80135
(Peoria and Lincoln Avenue, just East of I-25)
- FCC's Vanity Call Sign Program, [arrl.org/vanity-call-signs](http://www.arrl.org/vanity-call-signs)
- ITU PHONETIC, [arrl.org/quick-reference-operating-aids](http://www.arrl.org/quick-reference-operating-aids)
- Communicating with Other Hams
Contact Basics: Good Amateur Practices, <http://www.arrl.org/files/file/Get%20on%20the%20Air/Comm%20w%20Other%20Hams-Q%20Signals.pdf>
- Communications Conditions courtesy of [hamqsl.com/solar.html](http://www.hamqsl.com/solar.html)

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 via w0tx@w0tx.org or elmer@w0tx.org.

We are always looking for additional net control operators. If you would like to participate we can help you with the basics of becoming a net controller. This is a great opportunity to learn and get experience running a net.

Net controllers are always needed to perform Emergency Communications services. The Amateur Radio Emergency Service® (ARES) consists of licensed amateurs who have voluntarily registered their qualifications and equipment, with their local ARES leadership, for communications duty in the public service when disaster strikes. <http://www.arri.org/ares>. In the event of emergencies such as floods, fires, or other public service, the amateur radio community is always ready to help. If you have an interest in participating, when the need arises, learn and train now to be prepared. For additional information contact our EmComm Coordinator: Mike Vespoli (KE0HFH) at emcomm@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. We would encourage those who have been Hams for several years to also join us. Your experience and input is welcomed. What topics would you like to discuss? Join us Wednesday nights, 7:30 PM, 145.490, 100 Hz PL tone & linked to 448.625, 100 Hz PL tone.

(Note: The third Wednesday of the month is devoted to the DRC club meeting. Elmer Session: 6 PM, Main Meeting: 7 PM. See the [W0TX web site](#) for additional information.)

73,

Fred
AA0JK

ELMER SESSION START TIME

The Elmer Session Starts at 6 p.m. before the regular 3rd Wednesday DRC Meeting! All are welcome. Meet in Hearing Room # 2.

Come join in on the sharing of information.

MARCH MEETING PRESENTATION

BY GERRY VILLHAUER, W0GV

Our program for this month will be presented by yours truly, Gerry (W0GV). I have been working in aviation most of my career, primarily in Avionics; which means aviation electronics. Air navigation has gone through a major change, especially with regard to ground based RADAR navigation, used by the FAA for en-route and terminal navigation. This system has been in use since the 50's or earlier. We will go through some basics of RADAR navigation and then transition to the new system, ADS-B. This is the acronym for Automatic Dependent Surveillance-Broadcast. I will show you the basics of both systems and why the transition to ADS-B was necessary. With ADS-B you can purchase or build a system using SDR technology and computers like Raspberry Pi, to monitor aviation activity at home; something not possible with RADAR.

OUR NEW 220 MHZ REPEATER

BY DAVE BAYSINGER, W0GN

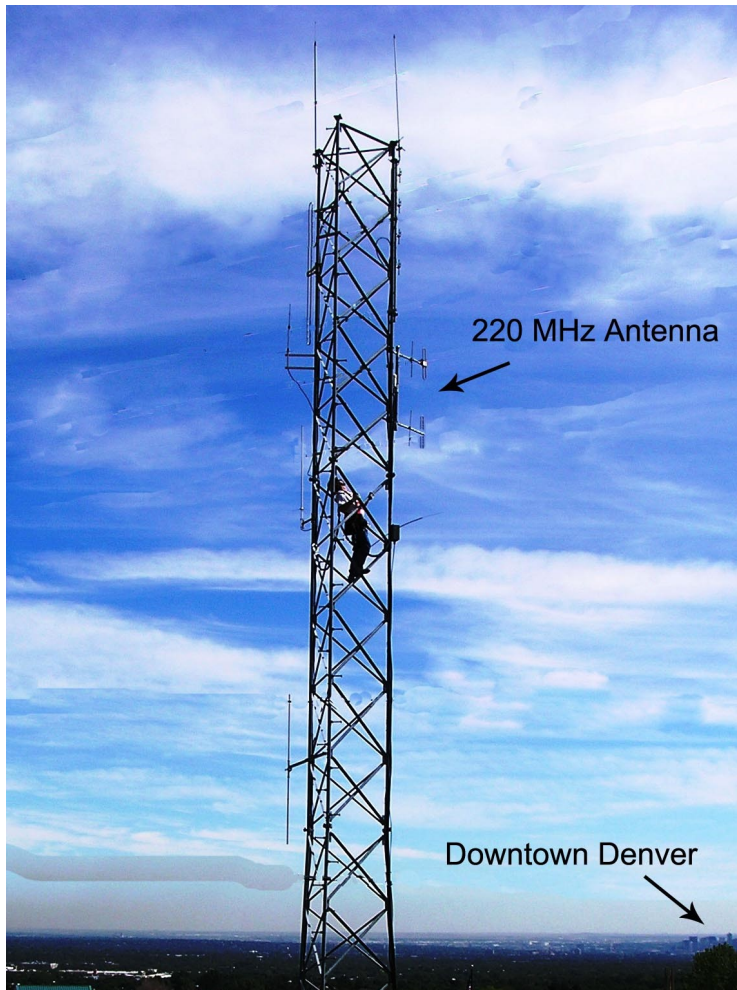
The new 220 club repeater was approved for purchase by the membership on 12/18/19. Orlen, WW0LF, Gerry, W0GV, and Dave, W0GN did the very speedy install at station #4 and turned the system up so the metro area could hear it.

The repeater was ordered as a factory ready system (on freq, tone set, power level set, clock set, with local mic, all manuals). Since we are not changing frequency, keeping 224.380 Mhz with a 1Z PL (100 hz), no antenna change was needed and the duplexer was tuned already, it was truly a "plug and play" install.

The repeater is now in "burn in" mode with emphasis on the "in", not the "burn". It sounds great and seems to hear very well as Orlen, Gerry, and Dave, have found during initial testing around Jefferson County.

The antenna is at the 50 ft. level of a 60 ft tower at West Metro Fire station #4 on West Alameda Avenue (at the base of Green Mountain). It is a 2-bay loop antenna aimed just south of downtown Denver, featuring a cardioid pattern with power to the North, South and East and a moderate null to the west, into the east face Green Mountain.

Try it out. Monitor the frequency. Tell the repeater you are monitoring. Enjoy a brand new band. Prove, as Dave and Gerry did, that Kenwood TH-F6 Talkies actually do work well on 220. Better still, call a friend with a 220 radio who hangs out on another channel and tell her/him to meet you on 224.38. You'll be glad you did, and put in a signal report on the Sunday evening net.



SOFTWARE-DEFINED RADIOS

PROVIDED BY FRED HART, AA0JK

Robert Kim wrote up a nice article on software-defined radio (SDR). You can read it here:
<https://www.allaboutcircuits.com/technical-articles/introduction-to-software-defined-radio/>



US MARINES EMBRACE AMATEUR RADIO SKILLS

PROVIDED BY FRED HART, AA0JK

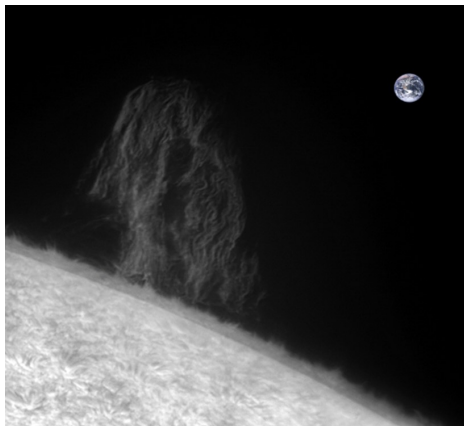
Cpl. Stephen Campbell wrote an interesting piece about the Marines use of amateur radio. You can find it here:
https://www.camplejeuneglobe.com/local_news/ii-mig-uses-th-century-tech-for-st-century-warfighting/article_5789bf1c-4db4-11ea-89bd-3bbaf01ff9cf.html

SOLAR GEOPHYSICAL ACTIVITY REPORT

PROVIDED BY FRED HART, AA0JK

All space weather was calm, at least in geospace. Solar wind was quiet, and we had no solar flaring, but plasma filament activity was on display.

BIG SOLAR PROMINENCE:

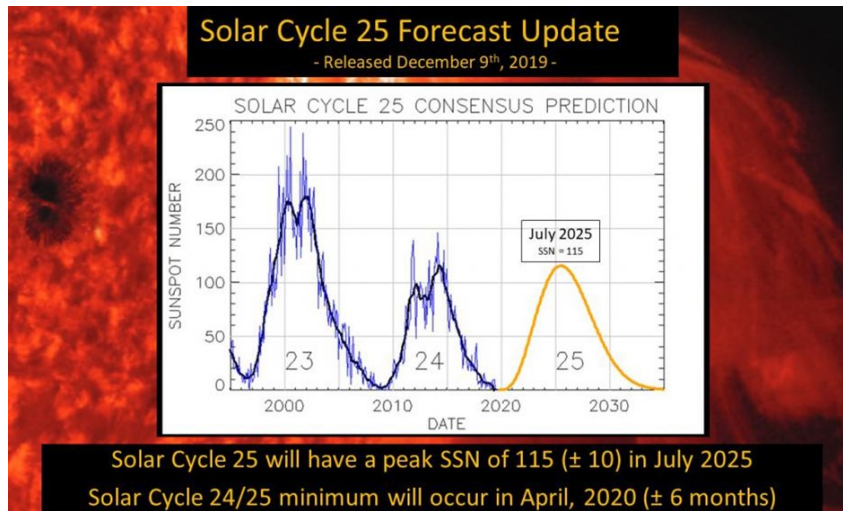


It's a good thing the Sun is 93 million miles away. Otherwise our planet might be in trouble. A large prominence was dancing along the Sun's eastern limb, it was big enough to swallow our entire planet.

Solar Cycle 25 sunspots will appear at a much higher latitude, (closer to the solar poles), and have the opposite polarity (positive polarity), leading in northern hemisphere sunspot regions, and negative polarity sunspots will be leading the way in the southern hemisphere.

ESA-NASA's Solar Orbiter is on its way to observe the Sun's poles: <https://www.engadget.com/2020/02/10/nasa-solar-orbiter-successful-launch/>

Recently, there have been signs of life from the next solar cycle. Solar Cycle 25 sunspots are starting to appear from time to time, heralding the end of Solar Minimum. Clearly, though, it's not over yet. More blank suns are very likely in the days and weeks ahead.

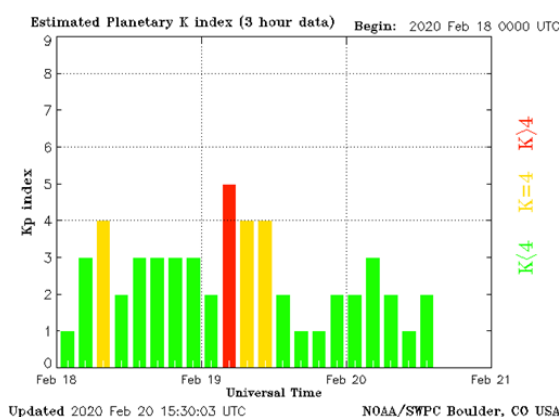
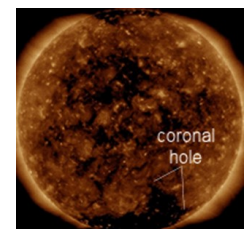


Above Image: SOLAR CYCLE 25 FORECAST UPDATE, published: Monday, December 09, 2019 22:30 UTC

The NOAA/NASA co-chaired, international panel to forecast Solar Cycle 25, released their latest forecast for Solar Cycle 25. The forecast consensus: a peak in July, 2025 (+/-), with a smoothed sunspot number (SSN) of 115. The panel agreed that Cycle 25 will be average in intensity and similar to Cycle 24.

Additionally, the panel concurred that solar minimum between Cycles 24 and 25 will occur in April, 2020 (+/-). If the solar minimum prediction is correct, this would make Solar Cycle 24 the 7th longest on record (11.4 years).

February 20th - No sun spots, 20+ days. Polar confined coronal holes, with Sun spot potential, were at center disc. (Image to right.)



GEOMAGNETIC STORM: A G1- class geomagnetic storm was underway on the 19th as Earth entered a minor stream of solar wind. Even before the solar wind arrived, Earth's magnetic field was humming with energy because of a crack that opened for more than eight hours on the 18th. Solar wind poured in, setting the stage for the days solar storm. (Image to left.)

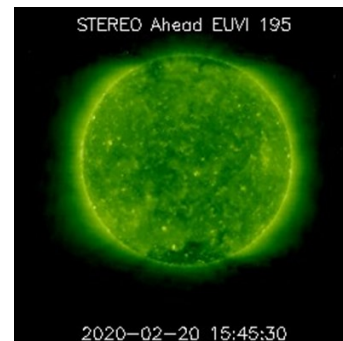
Minor Storm Observed - February 19th

An isolated period of minor (G1) geomagnetic storming was observed at 05:59 UTC Wednesday morning. This was the result of an elevated solar wind stream containing sectors of southward Bz.

For radio communications, the Sun remains spotless, so we are remaining at the low end of marginal for radio propagation.

Propagation Information:

Solar-Terrestrial Data - http://www.n0nbh.com			
18 Feb 2020 1732 GMT		VHF Conditions	
SFI 70	SN 0	Item	Status
A 3	K 1	Aurora	MID LAT AUR
X-Ray A7.9		6n EsEU	Band Closed
304A 91.8 @ SEM		4n EsEU	Band Closed
Ptn Flx 0.29		2n EsEU	Band Closed
Etc Flx 456.00		2n EsNA	Band Closed
Aurora /n=		EME Deg	Very Poor
Aur Lat No Report		MUF	ES - SEASON BREAK
Bz 1.1 SW 339.5		MS	0 6 12 18 UTC MAX
		HF Conditions	
		Band	Day Night
		80n-40n	Fair Good
		30n-20n	Fair Fair
		17n-15n	Poor Poor
		12n-10n	Poor Poor
		Geomag Field	VR QUIET
		Sig Noise Lvl	S0-S1
		MUF US Boulder	NoRpt
		Solar Flare Prb	1%



No sign of sunspot activity on the backside of the Sun as it rotates into Earth view. Coronal holes remain confined to the polar regions.

Prepared jointly by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center. UPDATED 2020 February 20 0030 UTC

24 hr Summary: Very low solar activity continued and the visible disk remained spotless. No Earth-directed CMEs were observed in available coronagraph imagery.

Forecast: Very low solar activity was expected due to the absence of sun spots or active regions of note 20-22 February.

Notes: Communications Conditions courtesy of hamqsl.com/solar.html and hfunderground.com/propagation/#skipzone

73,

Fred
AA0JK

WATCH ANTENNAS AND RADIO WAVES IN ACTION

BY BILL RINKER, W6OAV

Interested in seeing how antennas generate radio waves, how radio waves propagate and what happens when they reflect off a surface? Is so, watch a very nice video produced by the Royal Canadian Air Force. The video can be viewed at <https://www.youtube.com/watch?v=-F7KYLO4Bkg>.



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
[Radio Reference](#)

THE ROUNDTABLE ARCHIVE

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

THE ROUNDTABLE ARTICLE INDEX

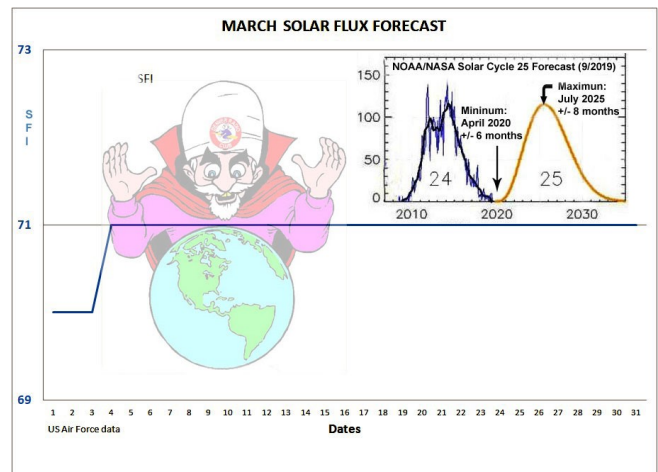
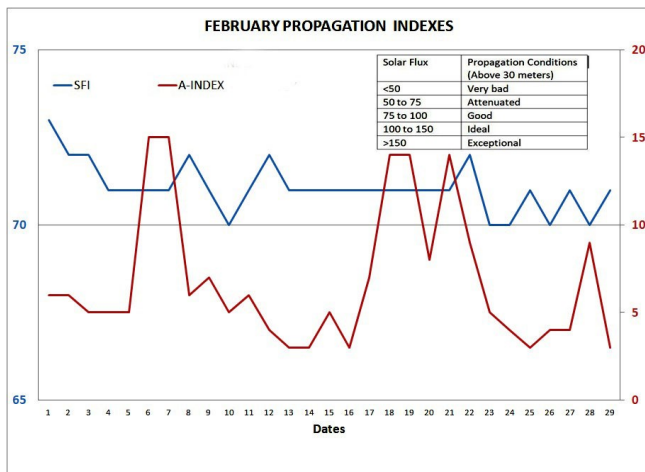
Go to: <http://www.w0tx.org/RoundtableArchive/-RoundTables-Index.pdf>

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 *Roundtable* 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
LARCFest 2020	4/4/20	Boulder County Fairgrounds Exhibit Bldg	w0eno.org/LarcFest

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
North Carolina	03/01/2020	03/02/2020	Raleigh Amateur Radio Society	
Idaho	03/14/2020	03/15/2020	Idaho QSO Party	
Oklahoma	03/14/2020	03/15/2020	Oklahoma DX Association	
Wisconsin	03/15/2020	03/16/2020	West Allis Radio Amateur Club	
Virginia	03/21/2020	03/22/2020	Virginia QSO Party	
Louisiana	04/04/2020	04/05/2020	Louisiana Contest Club	
Mississippi	04/04/2020	04/05/2020	ARRL Mississippi Section	
Missouri	04/04/2020	04/05/2020	Boeing Employees' Amateur Radio Society – St. Louis	

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<>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.
70cm	446.7875MHz (-)	BrandMeister Repeater: Slot 1 – Wide Area Traffic, Slot 2 – Local Talk Group 310804



HRO 12 STORE BUYING POWER WORKS FOR YOU!!








www.hamradio.com

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303-745-7373 800-444-9476

24 HOUR FAX 303-745-7394

e-mail: denver@hamradio.com

MARCH 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  First Quarter	3	4 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	5	6	7
8 	9  Full Moon	10	11 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	12	13	14
15	16  Last Quarter	17 School Club Cont. 	18 DRC Meeting Elmer 6 p.m. Meeting 7 p.m.	19 School Club Cont. 	20	21
22	23	24  New Moon	25 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	26	27	28
29	30	31				

DRC BOARD OF DIRECTORS

President	W0GV	Gerry Villhauer	303-467-0223	w0gv@hotmail.com
Vice-President	AD0GX	Kevin Schmidt	303-475-9234	ad0gx@arrl.net
Secretary	WW0LF	Orlen Wolf	303-279-6264	owolf@mines.edu
Treasurer	N0CRZ	Cathy Villhauer	303-467-0223	crazycathy56@gmail.com
Board Member	WY0J	Jan Alan Dickover	303-697-0725	jad.wy0j@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
Education Coordinator	AA0JK	Fred Hart	303-420-3536	elmer@w0tx.org
EmComm Coordinator	KE0HFH	Michael Vespoli	303-215-8862	emcomm@w0tx.org
EmComm Coordinator	AD0UZ	Brennan Pate	303-578-6283	emcomm@w0tx.org
Field Day Chairman	K1DBC	Doron Ben Chaim	720-254-1561	k1dbc@arrl.net
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RT Associate Editor	W6OAV	Bill Rinker	Check Roster	Check Roster
Hamfest Manager	N0CRZ	Cathy Villhauer	303-467-0223	drcfest@w0tx.org
Tech. Committee Chair	W6OAV	Bill Rinker	Check Roster	Check Roster
Trustee	WW0LF	Orlen Wolf	303-279-6264	owolf@mines.edu
VE Team	KC2CAG	Tom Kocialski	720-284-1911	kc2cag@arrl.net
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 RoundTable 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 RoundTable RoundWorld.

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

Sunday August 16st - Jefferson County Fairgrounds

DENVER HAMFEST

Denver Radio Club, WØTX 2020



Since 1917

**DEALERS FLEA MARKET PRIZES
FORUMS FCC EXAMS FOOD INDOORS**

More Tables & Less Crowding

Admission: \$6 (Children under 13 free w/adult)
Tables: Advance Purchase: \$12 (Paid by Aug 12)
At the Door \$16

Hourly Door Prizes - Main Drawing at Noon
(Must be present to win)

Doors Open: 8:30 AM - 1:00 PM
License Testing/VE Exams at 10 AM
(Vendor Set-Up Starts at 7:15 AM)

Talk-In: 145.490-/448.625- PL 100.0Hz
GPS: Lat 39d 43' 19"N Lon 105d 10' 15"W

Handicapped Parking & Access Available

WWW.WØTX.ORG



Jefferson County Fairgrounds
15200 West 6th Avenue Golden, CO

For more info visit our website or contact:
Cathy Vilhauer, N0CRZ 303-467-0223 E-Mail: drcfest@wøtx.org

Advance Table Reservation Form

Make checks payable to: Denver Radio Club, do not mail cash!

Payment is required with reservation and must be received by August 16, 2020 to obtain the \$12 per table advance registration price

AC Power is limited, available on a FCFS basis. Reservation confirmations will be emailed. Vendor badges & tickets will be provided at the Hamfest. Tables must be claimed by 8:30 AM or they will be subject to resale - no refunds

Save the upper portion of this flyer for your records

Name: _____ Call: _____

Org: _____ Phone: _____ Email: _____

of Tables _____ @ \$12.00 each = _____

of Vendor Admissions _____ @ \$6.00 each = _____

AC Power: yes no Total Enclosed : _____

Special Requests: _____

Please mail all reservations to: Denver Radio Club, 6511 W 74th Ave., Westminster CO 80003

DENVER HAMFEST
Denver Radio Club 2020
August 16th

Early Bird Discount Registration is Available Now! at
<http://www.hamconcolorado.com>

HAMCON COLORADO 2020 ROCKY MOUNTAIN DIVISION

MARK THESE DATES ON YOUR CALENDAR!

August 7 - 9, 2020

FRIDAY *Separate Event* - DX University 8AM – 5PM \$50 includes Lunch

ALL DAY SATURDAY & SUNDAY Many engaging technical sessions & forums Numerous club, organization and manufacturer exhibits!

MEALS MUST BE PURCHASED IN ADVANCE TO HEAR THE SPEAKERS

Booked so far are Riley Hollingsworth K4ZDH & Rick Roderick K5UR

SATURDAY

- ◆ Kickoff Breakfast with speaker (TBA)
- ◆ Afternoon Delicatessen Buffet with a nationally known Speaker (TBA)
- ◆ Evening Meet and Greet Buffet with ARRL Officials and a Keynote Speaker
- ◆ Midnight Wouff Hong Ceremony (Details TBA)

SUNDAY

- ◆ Breakfast with a nationally known Speaker (TBA)
- ◆ BBQ lunch with a nationally known Speaker (TBA)

MORE FOR YOU!

- ◆ Show your CW skills and coordination in a QLF (Details TBA)
- ◆ Show your skills in a challenging CW Pileup Contest (Details TBA)
- ◆ Operate W1AW/Ø – HF/VHF/UHF All modes including Digital on fantastic hardware
- ◆ Hourly prize giveaways
- ◆ Hospitality Suite sponsored by Mile High DX Association and Grand Mesa Contesters of Colorado



CU Denver South - 10035 S Peoria St. - Parker, CO