ROUNDTABLE

The Denver Radio Club Newsletter

Since 1917 **October 2019**

President's Message

By Gerry Villhauer, W0GV

Hello DRC Members,

Our annual meeting was September 18th and we have some changes to report in our board and officer line. First what did not change…Gerry (W0GV) re-elected as President, Orlen (WW0LF) re-elected as Secretary and Jan (WY0J) re-elected as board member. Dave (K0HTX) chose not to seek re-election, which then left the V.P. position open. Kevin (AD0GX) was elected Vice President. Cathy (N0CRZ) was elected to fill Dave's board position. Jim (K0TOR) chose to relinquish his long held position as Treasurer (But will remain a board member). Cathy (N0CRZ) was elected to be our new Treasurer. I know you had to read that at least twice, but I believe that sums up the election outcome.

I want to thank Jim (K0TOR) for his many years serving as Treasurer (about 25 years). Jim has done a superb job in that position and like I said at the meeting, I believe Treasurer is the hardest, most time consuming board position. Thanks to Cathy (N0CRZ) for stepping up to the challenge. Jim will be mentoring Cathy for the next few months to get her up to speed in her new position.

And thanks to Dave (K0HTX) for his years of service to the board and as a most competent Vice President. When I am absent, which happens frequently when I travel, I never have concerns about Dave "taking care of business". Please, next time you talk to Jim or Dave take time to thank them for their dedicated service to the DRC.

Thanks to Orlen (WW0LF) for a most interesting program presentation about the cold war clandestine listening devices (bugs) used during this period in history. In addition to a well done PowerPoint, Orlen also had a full set of these devices in a suitcase, which interestingly, was given to the club by the local FCC office many years ago. The difference in state of the art technology from that time period to today is amazing.

Our October program by Don Dubon (N6JRL), will present his experience with the 3Y0X DXpedition team that went to Peter 1 Island in Antarctica during January and February 2006. At the bottom of the sunspot cycle the team amassed 88,000 contacts from the bottom of the world. Come enjoy the DX experience. Also of note; Don has visited 119 countries and operated ham radio in most of them. And he is past president of Dayton Hamvention. This is a program you will not want to miss. Mark your calendars for October 16th.

Speaking of saving the date…Mark your calendar for Wednesday December 18th for the DRC Holiday Party. More details in the near future.

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

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:

John Welsh - AC5JB	-	John Kirkpatrick - KE0WBB

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.

September Meeting - What'd I Miss?

By Brennan Pate, AD0UZ

Gerry (W0GV) started the meeting by greeting everyone and having the visitors introduce themselves. There were 41 attendees in all.

Elections were then conducted. See Gerry's *President's Message* for details.

Gerry and Jim (K0TOR) provided some information on the DRC's August Hamfest, including the good news that there were over 400 attendees this year. Next year the club may utilize a different venue.

Orlen (WW0LF) was the evening's presenter. His talk was titled "The Bug Hunters: R.F. Entomology In the Cold War Era." Orlen talked about the equipment used for bug (spy hardware) detection. He had a briefcase that contained a bug detection set that the FCC gave to the club when it retired the equipment. The original cost was $14,000. According to usinflationcalculator.com, that translates into $121,000 in today's dollars.

Orlen talked about the target of bugs, bug technologies, devices, power options, common techniques, ways of detecting bugs, and agents. He gave an example of one of the most famous bugs. It was in the U.S.' Moscow embassy. Apparently, some children and a group of Russian officials presented a wooden make of the great seal of the US to the ambassador. It was mounted on the wall directly behind the ambassador's desk.

It was later discovered by a Dutchman, by accident. He was scanning different frequencies and heard the ambassador talking. It turns out that the "gift" contained a passive bug device powered by an external RF source. The latter transmitted a directed RF beam at the Seal and over the course of time used 320 MHz, 250 MHZ and 1.5 GHz frequencies to activate the bug, which enabled the Russians to listen to the Ambassador from another location.

At a later date the U.S. rebuilt the embassy in Moscow, with American contractors and workmen, due to the number of bugs that had been implanted in the building's structure when it was originally built.

Technical Committee Report

By Bill Rinker, W6OAV

The following is an overview of current issues discussed at the September meeting.

DRC/TSA Aurora Site
Goal: Work with the TSA relative to establishing a "communications room" for the DRC.
Status: The club has corresponded with the TSA relative to the installation of wiring and coax runs.

DRC Repository verses Cloud Services
Goal: Research using the DRC repository or another cloud service for off premise storing of club records.
Status: AD0UZ has submitted a recommendation to the board. AD0UZ will demo his recommendation to the board.

Repair the Station 4 Remote Power Control
Goal: Troubleshoot and repair the system.
Status: Under investigation. Suspect a WiFi issue at site. A member of the tech committee to check out the site.

Why Internet to Colorado Link down for several weeks?
Goal: Determine why the link to Colorado Room is down.
Status: K0SVT will investigate.

Station 4 Internet?
Goal: Determine if, and how, we can obtain reliable Internet access for the C4FM repeater and for the remote power control system.
Status: Committee is investigating several possibilities.

C4FM Repeater – Fusion Network configuration?
Goal: Remain on the Colorado-Link network or configure the DRC Wires-X Room (assuming Internet access is available)?
Status: Should reliable Internet access become available, establish DRC Wires-X Room.

Learning Net Report

By Fred Hart, AA0JK

Thanks goes out to our Net controllers: Doron (K1DBC) and Alex (KS0E)

Topics:

- Heathkit – SB-102
- Reconditioning And Modernizing The Heathkit HP-23 AC Power Supply
- The Heathkit HP-23A AC Power Supply: https://youtu.be/hPdRiwqdp80
- FT-891Digital: https://youtu.be/Nx-XBgEQ-D4 and https://youtu.be/SrXbg9ytksU
- MFJ-931 Artificial Ground: http://www.mfjenterprises.com/Downloads/MFJ-931/MFJ-931.pdf
- Mobile installation: http://k0bg.com/install.html
- Attic HF Antennas: Loops, End Feed, Dipoles
- DRC 53.090 6M repeater, Icom 7300 setup
- Slow Scan TV
- Mobile instillation, FTM–400 XDR, proper wiring and fuse application.
- Digital-mode baud rates
- SSTV software for ham radio SSTV emission, https://www.dxzone.com/catalog/Software/SSTV/
- Six Meter repeater Net, Sunday mornings,10:00am, 53.090 107.2T
- MFJ-931 Artificial RF Ground
- Antenna Tuners (Match-Box impedance feed-line tuning)
- Resonance & how your antenna works. Back to basics presentation given during the club Elmer session.

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.arrl.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. Questions can also be submitted on the YAHOO Learning Net web page https://groups.yahoo.com. Here you will also find information from past activity that you might find of interest.

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

October Meeting Presentation

Provided By Bill Rinker, W6OAV

Meeting Abstract:
Don, N6JRL, will present his experience with the 3Y0X DXpedition team that went to Peter 1 Island in Antarctica during January and February 2006. At the bottom of the sunspot cycle the team amassed 88,000 contacts from the bottom of the world. Enjoy the DX experience!

Speaker Bio:
Don was licensed in 1963 and has experienced many opportunities to visit places throughout the world and work DX. After retiring from the United States Marine Corps, Don was able to be on many DXpeditions, the most notable was Peter 1 Island (3Y0X) in 2006 which was awarded the DXpedition of the year. Don has been to 119 countries and was able to operate ham radio from most of them. Don is past President of the Dayton Amateur Radio Association (DARA) (Hamvention), the Onslow Amateur Radio Club Jacksonville NC (OARC), the Southwest Ohio DX Association (SWODXA) and is currently the Vice President of the Pikes Peak Radio Amateur Association (PPRAA). Don is now a retired Broadcast engineer and enjoys flying as a private pilot.

N6JRL at 3Y0X

DRC's Holiday Dinner 2019

Provided By Gerry Villhauer, W0GV and Bill Hester, N0LAJ

THE 2019 DRC Holiday Party
is on Wednesday, December 18th, 2019.

HIGHLANDS MASONIC CENTER
3550 North Federal Blvd.
Denver, CO
(park and enter on the south side)

DOORS OPEN AT 5:15 - DINNER AT 6:00

FELLOWSHIP - PRIZE DRAWINGS - PROGRAM

CATERED DINNER IS $20.00 PER PERSON,
YOUR CHOICE OF ENTREE: ROTISSERIE CHICKEN OR MEATLOAF
MEAL INCLUDES: TWO SIDES - SALAD - BREAD - DESSERT - BEVERAGE

>>> THE DINNER IS BY PRE-PAID ADVANCE RESERVATION ONLY <<<
Reservations must be mailed by December 11th!

Please help us by making your reservation early. Thanks!

See the last page of the Roundtable for a printable version of the reservation form. Also, see https://w0tx.org/holidaydinner.htm to download the form.

Question of the Month: Vee vs. Dipole

By Bill Rinker, W6OAV

Question: I want to put up either a 20 meter dipole or a 20 meter inverted V at 30'. Which antenna would be the best?

Answer: There a few minor differences between the two antennas but they are pretty close in performance. Let's take a look at the various issues.

Supports, space and wire requirements
Referring to Figure 1, a dipole would require three 30' supports. An inverted V with a 90 degree apex at 30' would require one 30' center support and two 11.3' supports. The advantage here with the inverted V is that one can easily drop the ends of the antenna when fine tuning the inverted V. Also, the horizontal space requirements are

32’ 10.1” for the dipole and only 22.06’ for the inverted V, a much nicer dimension for small yards. 32’ 10.1” of wire is required for the dipole and only 31’ 2.4” for the inverted V.

E

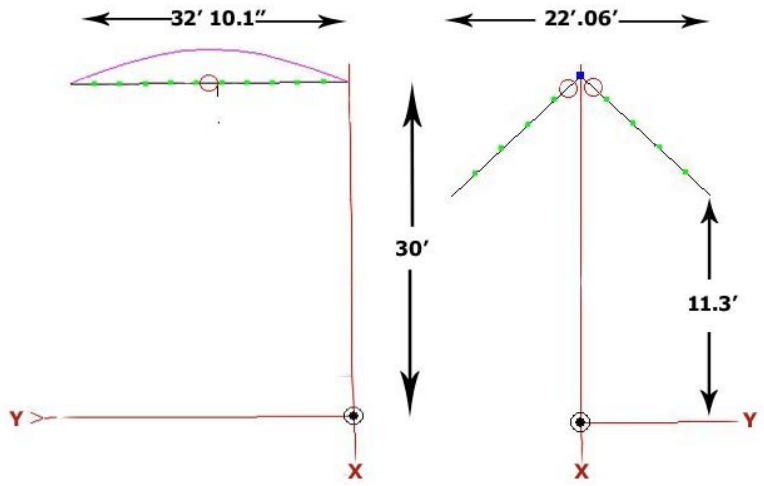


Figure 1 - Dimensions for a 20 meter dipole and an inverted V antenna

Impedances

Figure 2 shows the average impedance of a 30’ high dipole across the 20 band. At 79 ohms the SWR would be 1.50 in the middle of the 20 meter band and 1.85 at the band edges. Figure 3 shows the average impedance of an inverted V with the apex at 30’. At 53 ohms the SWR would be 1.01 in the middle of the 20 meter band and 1.5 at the band edges. The band width and SWRs of both antennas over the 20 meter band are acceptable for most radios, especially if good low loss coax is used to feed the antennas.

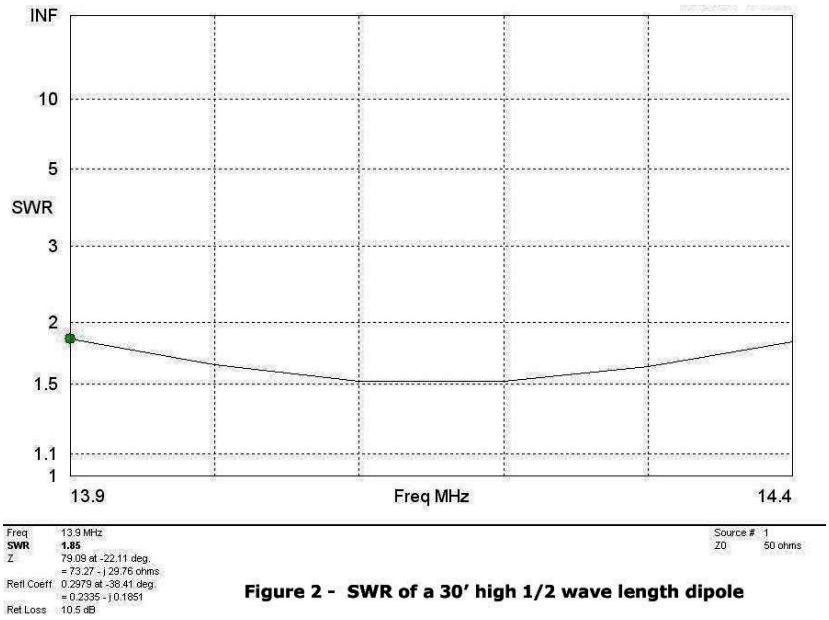


Figure 2 - SWR of a 30’ high 1/2 wave length dipole

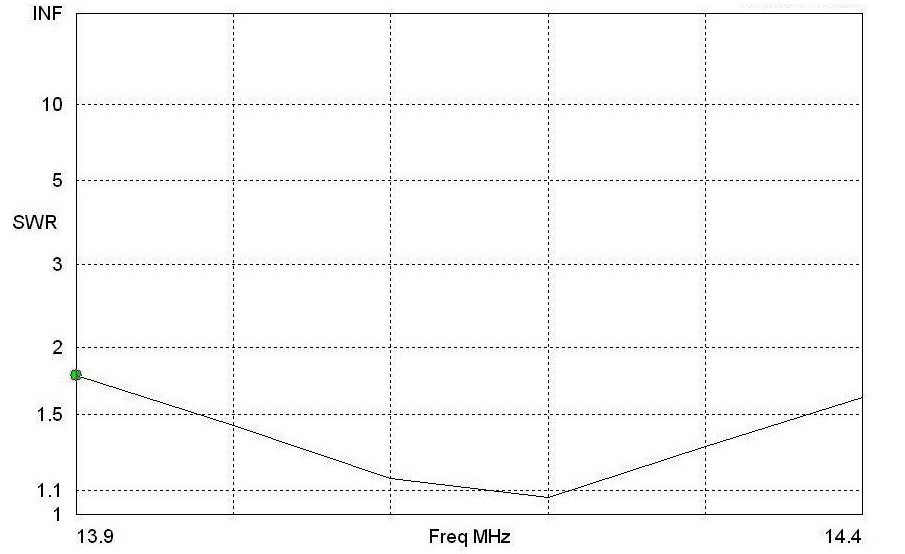


Figure 3 - SWR of a 30′ high inverted V

Radiation Patterns

Figure 4 shows the elevation radiation pattern of both antennas when viewed from the ends of the antennas. Note that the dipole has about a 1 dB stronger broadside signal at 30 degrees and the inverted V has about a 5 dB higher stronger signal at the higher angles. Figure 5 shows the azimuth pattern when looking down on the antennas. Again, note that at 30 degrees the dipole has about 1 dB advantage. The inverted V has about a 2 dB advantage at 30 degrees off the ends of the antenna. Other than that, the antennas can be considered to be about the same relative to signal performance.

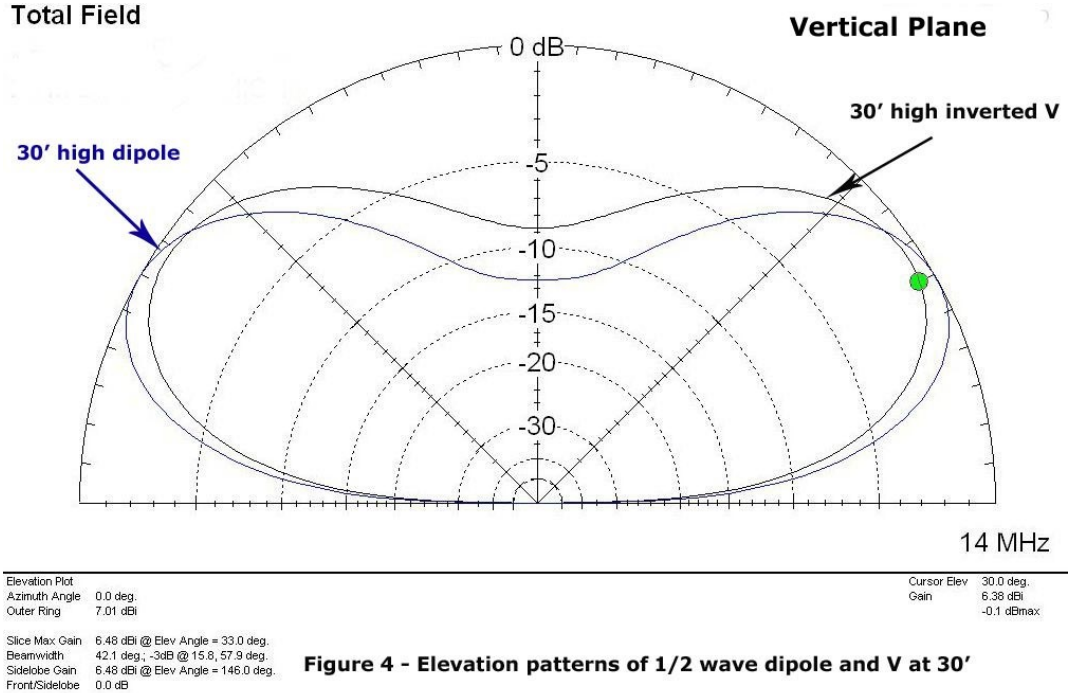


Figure 4 - Elevation patterns of 1/2 wave dipole and V at 30′

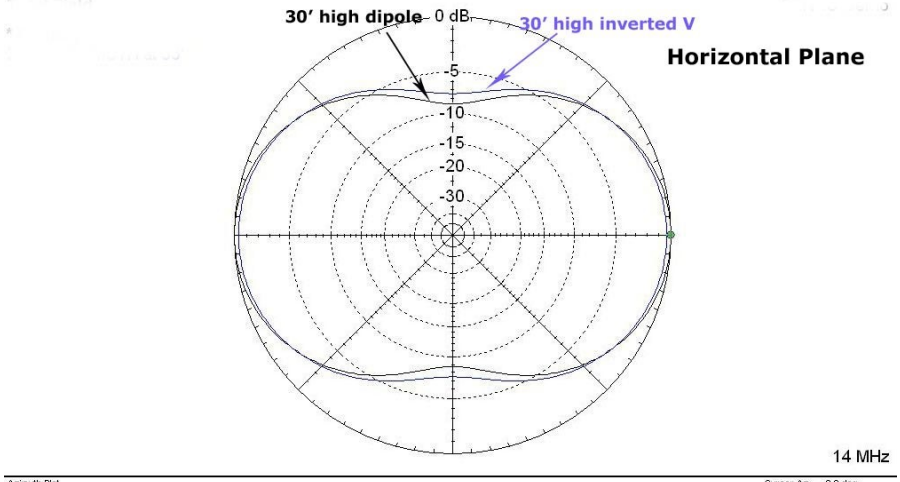


Figure 5 - Azimuth patterns of 1/2 wave dipole and V at 30'

Formulas

The inverted V antenna will be shorter than a dipole by 2% to 5% depending on the angle of the apex. 90 degrees is not critical - plus or minus 15 degrees will not make much of a change in antenna performance. The old standby dipole formula "468 / freq in MHz = total length" is used for an average dipole at the height of 1/2 wave length. Then 5 % can subtracted be from that result to get the equivalent inverted V length.

Conclusion

Either antenna will work equally well. The issues for choosing which antenna are more physical then electrical. On 40 meters and below, the physical issues may be more important when choosing an antenna configuration as noted below.

Extra Comment

Should one want to put up an antenna on 40 or 75 meters, then the inverted V would normally be the best choice. Figures 6 and 7 show why this is true. These figures illustrate that the performance of both a 75 meter dipole and a 75 meter inverted V at 65' is basically identical (1.6 dB difference at 40 degrees). However, the dipole must be supported by three 65' towers whereas the inverted V must be supported by only one 65' tower and two 23' end supports. The dipole will require 130' horizontal space where as the inverted V will require only 87.3" horizontal space, not a bad trade off for giving up 1.6 dB of performance.

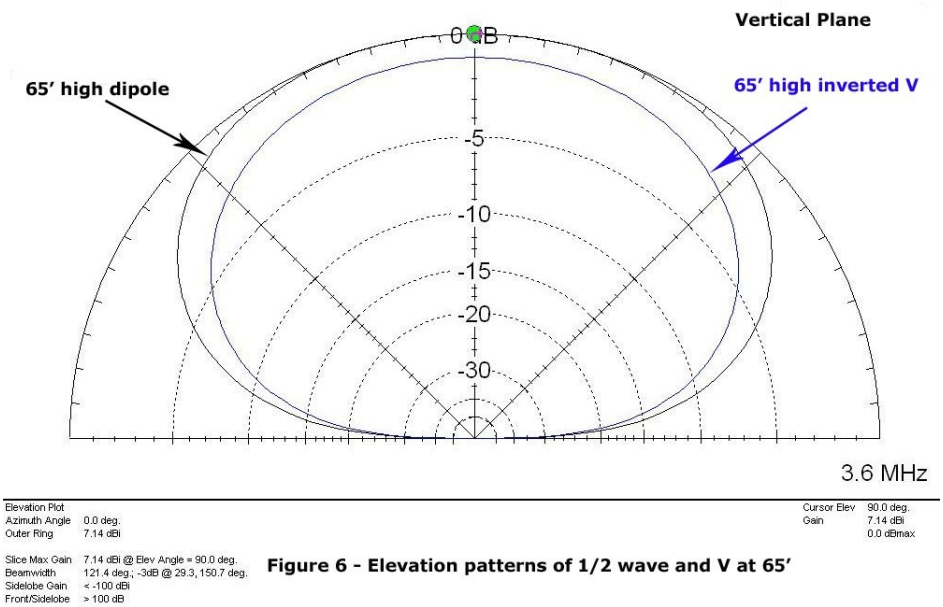


Figure 6 - Elevation patterns of 1/2 wave and V at 65'

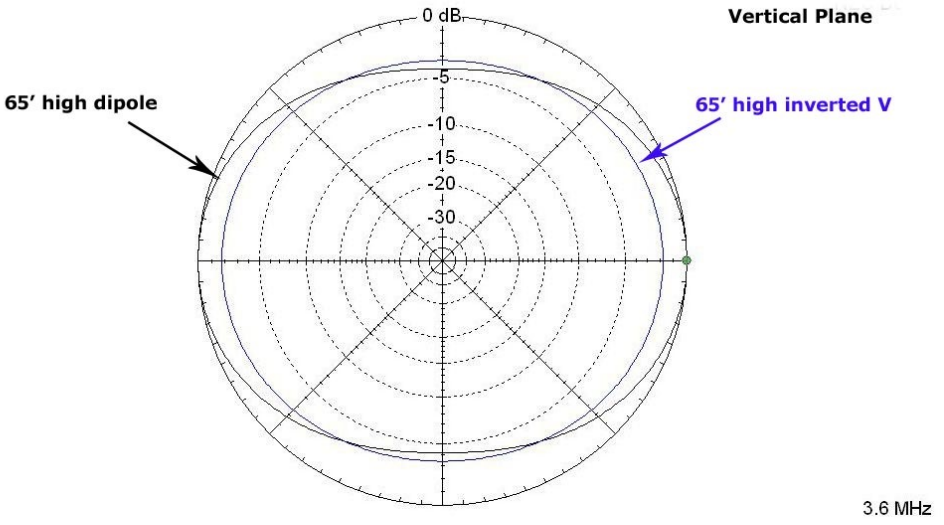
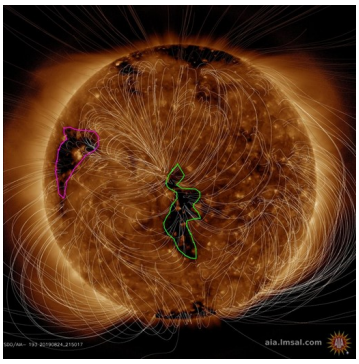


Figure 7 - Azimuth patterns of a 1/2 wave and V at 65′

Solar Geophysical Activity Report

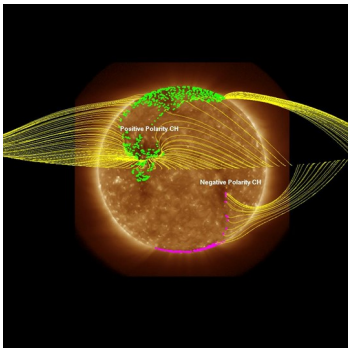
By Fred Hart, AA0JK

A summer without sunspots: Since the northern summer began on June 21st, the Sun has been blank, that is, without sunspots, 88% of the time. The only interruptions have been a handful of tiny quiet sunspots that sometimes disintegrated within hours of forming. The remainder of summer was set to continue in the same way. Welcome to Solar Minimum!



No spectacular activities on the Sun these days, beware of Solar minimum. High-speed streams from two low latitude coronal holes (CHs), were expected to bring us geomagnetic disturbances later in the month.

Monday, August 26th - Geomagnetic Storm Forecast: Earth was about to be hit by a double-stream of solar wind. The two streams were flowing from holes in the Sun's atmosphere, shown here in an extreme ultraviolet image from NASA's Solar Dynamics Observatory:



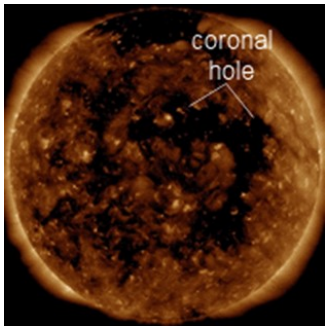
These are "coronal holes," places where the Sun's magnetic field opens up and allows solar wind to escape. Solar wind flowing from the right coronal hole was expected to arrive on August 27-28. A more potent stream of solar wind flowing from the left coronal hole was expected to reach us on September 1-2.

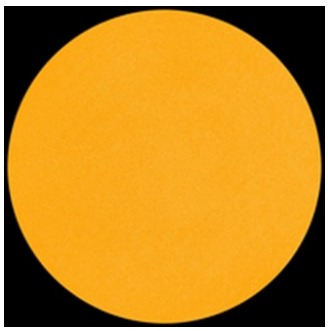
G1-class geomagnetic storms were possible on both dates, although September 1-2 was more likely to experience storm conditions. Why? Because the coronal hole on the left was spewing a faster stream of gas than the one on the right: ~650 km/s vs. ~500 km/s respectively.

The effect of the first coronal hole (neg. polarity) was already felt on August 27th (very minor). PFSS (Potential-Field Source-Surface) P magnetic field extrapolation suggests that the second coronal hole (pos. polarity) was much more extensive. A G1 storm was expected on August 31st.

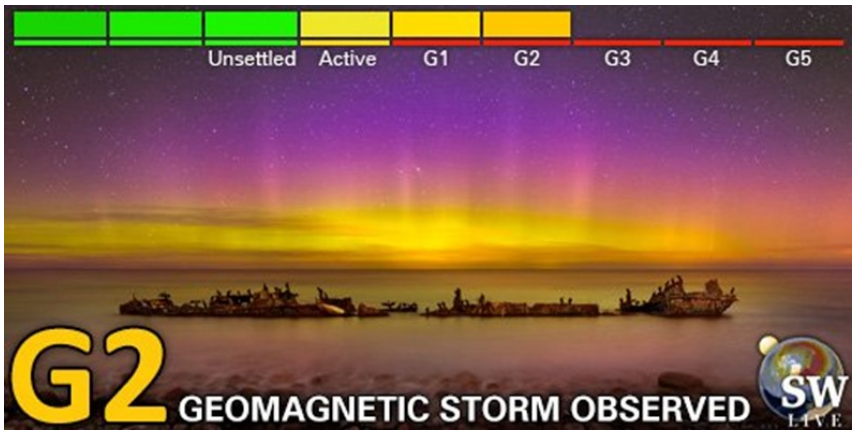
August 31st - The solar wind had arrived: Earth was entering a stream of fast-moving solar wind that NOAA forecasters said potentially could spark G1- to G2-class geomagnetic storms. The gaseous material was flowing from a large hole in the Sun's atmosphere. The last time this stream hit Earth's magnetic field, it was almost a month ago.

Earlier than expected: Earth was entering a stream of high-speed solar wind flowing from the indicated coronal hole. Credit: SDO/AIA

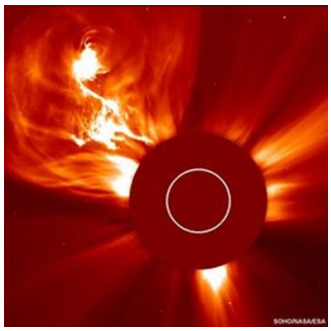




The Sun was blank--No sunspots. Credit: SDO/HMI



Moderate G2 geomagnetic storm (Kp6) Threshold Reached: 14:20 UTC

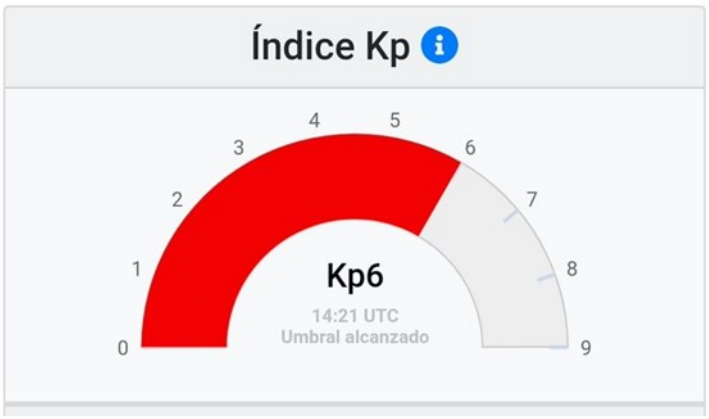


Spotless Days Current Stretch: 24 days.

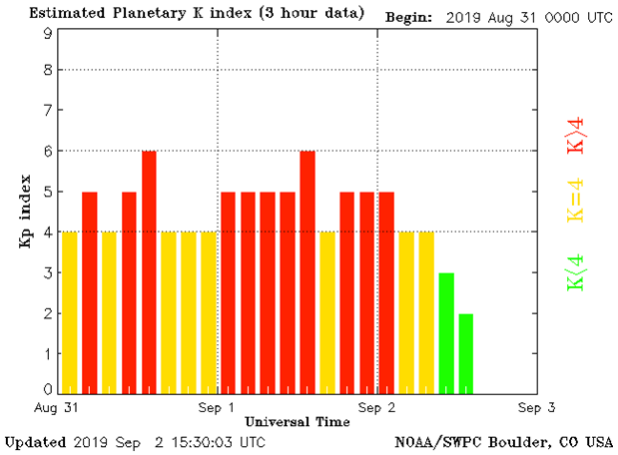
160 Years Since The Carrington Event: September 1st marks the 160th anniversary of the Carrington Event, The strongest geomagnetic storm known to have hit Earth since at least the 14th century.

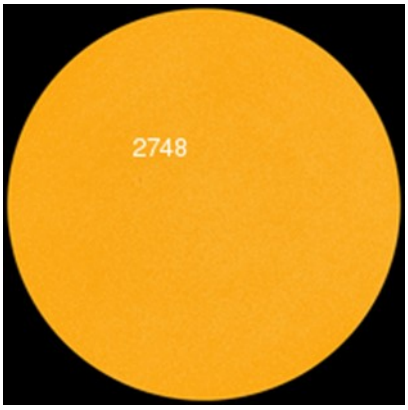
Based on examinations of ice samples, scientists believe that the geomagnetic storms occurring prior to the 14th century were two and three times stronger.

September 1st - We were coming down from the G2 level solar storm that brought significant activity over the first few days of September. Unfortunately, for first responders to Hurricane Dorian, this solar storm hit at exactly the same time that the hurricane was ravaging the Bahamas.



A stream of high-speed solar wind was lashing Earth's magnetic field, blowing faster than 700 km/s.



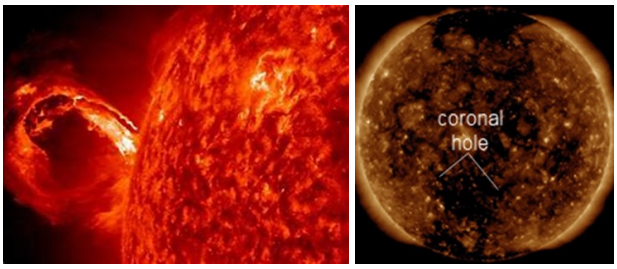


Sunspot AR2748 poses no threat for strong solar flares. Credit: SDO/HMI

Hurricane Watch Nets, while hurricane Dorian was decimating the Bahamas, field reports were that emergency radio communications were disruptive due to solar activity. Both emergency frequencies (14.325 MHz and 7.268 MHz). These disruptions peaked on September 1st, during the height of the solar storm, reaching G2-level (Kp 6) twice.

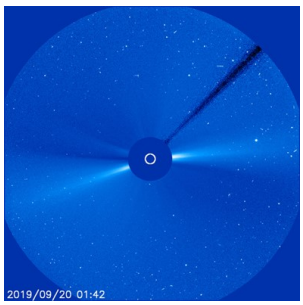
Although the Sun is now at the end of the 11yr cycle minimum, with no active regions or solar flaring, preparing to start another cycle, there is still reason to watch now.

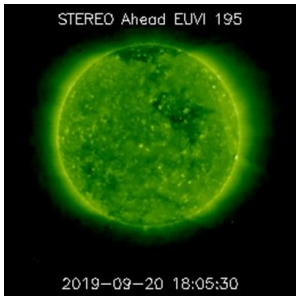
In addition to the coronal hole streams that exist at solar minimum, the plasma filaments which care not what phase the Sun is in, continue to dance through the corona, often with violent whip action, and when they release CME's, it can be devastating, so a constant vigilance is recommended.



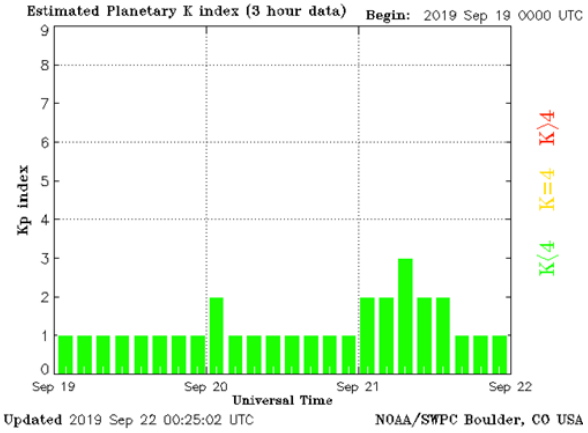
September 13th - Solar wind flowing from this southern coronal hole was expected to graze Earth's magnetic field on September 16th or 17th. Credit: SDO/AIA

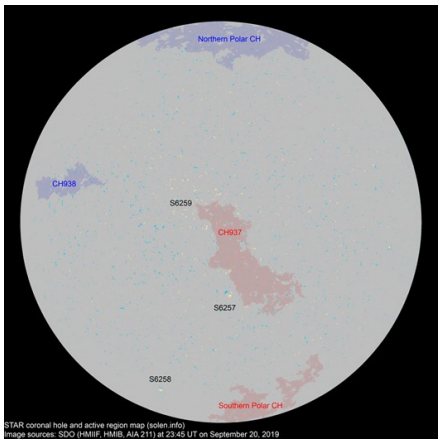
September 20th - LASCO C3. This filament eruption was reported as a result of a narrow CME. Based on its location near the central meridian, it was expected to impact Earth on September 23rd.





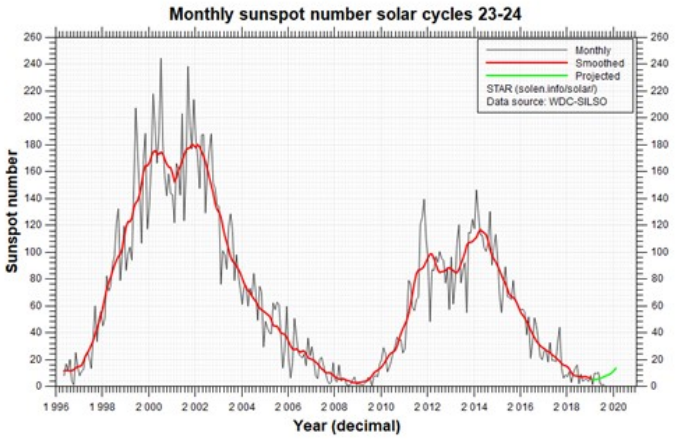
Credit: STEREO Ahead





Note that prominent coronal holes are at the polar regions, and forming largely in the southern hemisphere. All signs of magnetic reversal, and the approaching new solar cycle.

Note the green projected line indicating a rise, as we enter 2020. The background x-ray flux was at the class A6 1 level. Prepared jointly by the U.S. Department of Commerce, NOAA, Space Weather Prediction Center.



Summary… Solar activity was very low under a spotless solar disk. An area of enhanced plage developed during the period near S13W09. A filament erupted at about 19/2200 UTC along a 20 degree, E/W oriented channel centered near S35W02, observed in SDO/AIA 304 imagery. A narrow, slow-moving CME signature was observed in STEREO-A COR2 imagery after 20/0000 UTC. Analysis of any Earth-directed component was ongoing.

Forecast: Solar activity was expected to remain at very low levels.

73,

Fred
AA0JK

DRC's Emergency Responses

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

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

W0TX Repeater Directory

amazonsmile
You shop. Amazon gives.
Search for Denver Radio Club @ smile.amazon.com

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

Security Weekly

The RoundTable Archive

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

The RoundTable Article Index

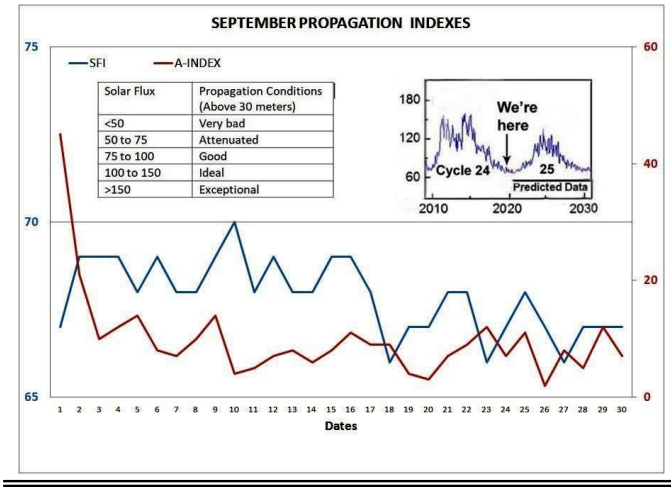
Go to: http://www.w0tx.org/RoundtableArchive/-RoundTables-Index.pdf

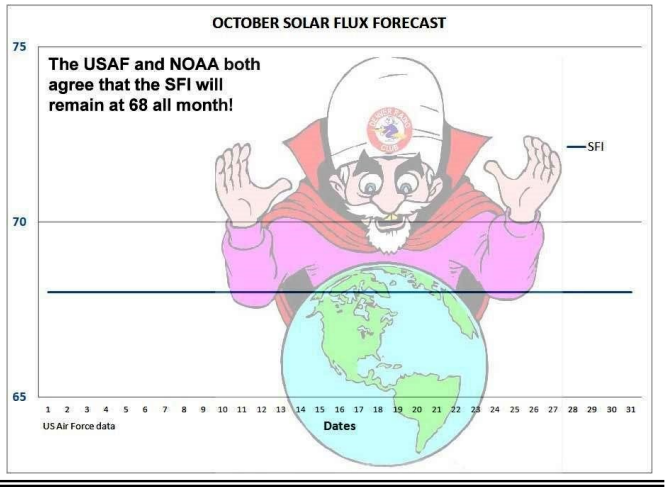
Past & Future Propagation Conditions

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





Upcoming Events

Hamfests & Conventions

Event	Date	Location	Sponsor Website
BARCFest	10/06/19	Boulder County Fairgrounds, Longmont	QSL.net

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	10/05/2019	10/06/2019	California QSO Party	
Nevada	10/11/2019	10/13/2019	Sierra Nevada Amateur Radio Society	
Arizona	10/12/2019	10/13/2019	Arizona QSO Party	
Pennsylvania	10/12/2019	10/13/2019	The PA QSO Party Association	
South Dakota	10/12/2019	10/13/2019	South Dakota QSO Party	
New York	10/19/2019	10/20/2019	Rochester DX Association	
Illinois	10/20/2019	10/21/2019	Western Illinois Amateur Radio Club	
British Columbia	02/01/2020	02/02/2020	Orca DX and Contest Club	
Minnesota	02/01/2020	02/01/2020	Minnesota Wireless Association	
Vermont	02/01/2020	02/02/2020	Radio Amateurs of Northern Vermont	
South Carolina	02/22/2020	02/23/2020	Columbia Amateur Radio Club	
North Carolina	02/23/2020	02/24/2020	Raleigh Amateur Radio Society	
Idaho	03/08/2020	03/09/2020	Idaho QSO Party	
Wisconsin	03/09/2020	03/10/2020	West Allis Radio Amateur Club	
Oklahoma	03/14/2020	03/15/2020	Oklahoma DX Association	

ATTENTION

SUPPORT THE DRC FROM YOUR AMAZON PURCHASES

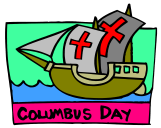
You can now support your Denver Radio Club when you make purchases from Amazon.com. Amazon Smile donates 0.5% of your purchase to the non-profit (501.c.3) organization of your choice. This is at no additional cost to you. To support the DRC just visit smileamazon.com. Select Denver Radio Club, Inc. as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

OCTOBER 2019

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

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2 **Learning Net** 7:30 p.m. 145.490 / 448.625 (No PL)	3	4	5 First Quarter
6	7	8	9 **Learning Net** 7:30 p.m. 145.490 / 448.625 (No PL)	10	11	12
13 Full Moon	14 	15	16 **DRC Meeting** Elmer 6 p.m. General 7 p.m.	17	18	19 **EME Contest -** Starts 0000 UTC
20 **EME Contest -** Ends 2359 UTC	21 **School Club Roundup** Starts 1300 UTC Last Quarter	22	23 **Learning Net** 7:30 p.m. 145.490 / 448.625 (No PL)	24	25 **School Club Roundup** Ends 2359 UTC	26
27 New Moon	28	29	30 **Learning Net** 7:30 p.m. 145.490 / 448.625 (No PL)	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
Membership	KC0CZ	Bob Willson	303-659-0517	rwillso2@centurylink.net
Net Control	K0TOR	Jim Beall	303-798-2351	k0tor@arrl.net
Public Relations	K0AXP	Dave Verlinde	*248-515-2371*	w0tx@w0tx.org
RT Managing Editor	AD0UZ	Brennan Pate	303-578-6283	drc.editor@gmail.com
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…

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

DENVER RADIO CLUB
2019 HOLIDAY DINNER MEETING
RESERVATION FORM

Please print out this form, fill it in, and mail it with your check.

THE DEADLINE TO MAIL RESERVATIONS IS DEC. 11TH, 2019 !
(Please help us by making your reservation early. Thanks!)

Name: _____ Call: _____

Address: _____

City: _____ Zip: _____

Phone #: _____ E-mail: _____

Total # of Persons Attending at $20.00 Each: _____

Entrée Choices: # of Rotisserie Chicken: _____ , # of Meatloaf: _____
(there is only one entrée per person)

Please make your check payable to: The Denver Radio Club

My check is in the amount of: $_____

Please mail this Reservation Form with your Check to:

Gerry Villhauer
6511 West 74th Ave.
Westminster, CO 80003 – 3129

Thanks for making your reservation. We appreciate your support!