



ROUNDTABLE

The Denver Radio Club Newsletter

Since 1917

August 2019

PRESIDENT'S MESSAGE

BY GERRY VILLHAUER, W0GV

Hello DRC Members,

What can I say about the weather? HOT!

I have several items to bring you up to date on happenings in the club. The 447.825 repeater at St. Anthony's Hospital has been relocated to a higher location on the hospital with a gain of nearly 70 foot in vertical height and an unobstructed view in all directions. I believe our antenna is the highest on the building. We solicit your experience using this repeater system. Remember to set your radio for Narrow Band FM and use a Digital Coded Squelch Code of 073. A big thanks to our tech crew for a job very well done.

Several months ago the Board approved the expense to move the 449.775 Yaesu Fusion repeater from station 4 in Lakewood to our site at Centennial Cone. The frequency coordination process was started but, we came upon a snag with the coordination. The tech committee is still working on solving this issue. I will report more as it develops.

There is a request out for help with the 100 year celebration of Radio Station WWV in Fort Collins, CO. This is an opportunity to help operate ham radio in SSB, CW and Digital modes from the WWV site for this historic celebration. The Special Events Station (SES) will operate from Friday September 27 through Wednesday October 2nd. For more information please contact WWV100@ncarc.net.

Thanks to Chris Hamilton (AE5IT) for a very interesting and informative presentation on Standing Waves on transmission lines. Chris' transmission line simulator gives a good visual presentation of what is actually happening on transmission line. Great show Chris!

The setup and operation of remote stations is the topic for the August DRC meeting. Bill (WT0DX) and Paul (NO0T) will provide information on the various techniques for setting up and operating a remote station. Both have their own remote stations, and have made 1000s of contacts using their setups. The various approaches to setting up a remote station, and the most critical aspects leading towards reliable operation will be covered. Descriptions of their stations will be provided, and live demonstrations should be possible at the meeting. Mark your calendar, this will be a very Interesting program.

PLEASE get your table reservation in for our DRC Hamfest on Sunday August 18th. If you don't plan on having a table, put the date on your calendar for the DRC HAMFEST...THE BIG ONE! For more details and to print off a table reservation form at www.w0tx.org.

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



Sunday August 18th - Jefferson County Fairgrounds

DENVER HAMFEST



Since 1917

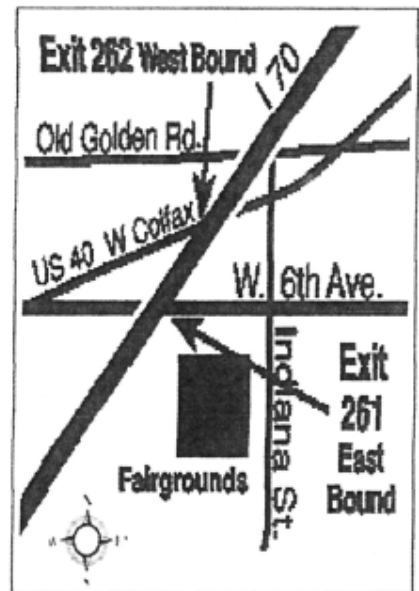
Denver Radio Club, W0TX 2019

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

More Tables & Less Crowding

INDOORS

- Admission: \$6 (Children under 13 free w/adult)
- Exact change appreciated
- Tables: Advance Purchase: \$12 (Paid by Aug 14)
- At the Door \$16
- Hourly Door Prizes - Main Drawing at Noon
(Must be present to win)
- Vendor Set-Up Starts at 7:30 AM
- Doors Open: 8:30 AM - 1:00 PM
- License Testing/VE Exams at 10 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



Jefferson County Fairgrounds

WWW.W0TX.ORG

15200 West 6th Avenue Golden, CO

For more info visit our website or contact:
Cathy Villhauer, N0CRZ 303-467-0223 E-Mail: drcfest@w0tx.org

KCNC-TV MOBIL WEATHER LAB & METEROLOGIST

PROVIDED BY PAUL DEETH, WA2YZT

(W0GV note: The KCNC TV Mobile Weather Lab will be at our hamfest along with meteorologist Ashton Alteri.)

The KCNC-TV Mobile Weather Lab, (MWL) is the second such vehicle to be built by KCNC-TV, which was the first TV station in Denver to build a vehicle to cover live weather. The first MWL was designed and built by the engineers at KCNC. This newer MWL was also designed by the engineers and the Meteorologist at KCNC-TV and was built by Accelerated Media. <https://www.acceleratedmt.com>.

This newer MWL can operate as a live reporting vehicle while driving in severe weather to bring live weather conditions to the studio and viewers at home by use of cell phone technology.

The MWL also has the capability of sending pictures back to the studio when parked by using conventional 2 GHz microwave on a 20-foot mast and when it is too far away for that technology, it has a small satellite dish on the roof that can be deployed to send reports to the studio. The MWL has convention cell phone for communication as well as UHF 2-way radio and a satellite telephone when it is out of cell phone range. The MWL has an onboard 6kW generator attached to the truck engine to provide AC power for the equipment.

Meteorologist Ashton Altieri is proud to be part of the popular CBS4 *This Morning* show each weekday from 4:30 - 7 a.m. as well as CBS4 *News At Noon*. Ashton joined the CBS4 Weather Team in the summer of 2016 after working at WFAA-TV in Dallas. Prior to his time in Texas, he spent seven years at 9NEWS in Denver. He always knew he would eventually return to Colorado because of unique challenges that come with forecasting Front Range weather. Originally from New Jersey, Ashton spent most of his time growing up in Michigan where he competed at the state level in Cross Country and Track and also became an Eagle Scout. He continues to be active in scouting and Ashton credits his passion for weather to earning the weather merit badge when he was 12 years old. An unforgettable encounter with a nearby tornado while on a camping trip the same year sealed his interest in the subject. Ashton is a Ham operator, WC0CNC holding a Technician class license.



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:

| | |
|------------------------------|-------------------------|
| Christopher McKinney - KC0JM | Thomas Frerichs - AE0GQ |
| Jeff Battin - AK0DX | Richard Kecso - K0RJK |

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

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

TECHNICAL COMMITTEE REPORT

BY BILL RINKER, W6OAV

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

ITEMS COMPLETED THIS MONTH

St Anthony Repeater

Goal: Improve coverage by moving the repeater and antenna to a better location on the building.

Status: On 7/13/19 the move was completed. The following were members of the work party: Orlen (WW0LF), Dave (WG0N), Doron (K1DBC), Tim (KE0VAW), and Kevin (AD0GX). The Radio Mobile maps indicate a good improved coverage area.

6 Meter Repeater

Goal: Troubleshoot audio and "buzz" issues.

Status: On 7/6/19 Lance (N0ETV) and Gerry (W0GV) went to the site. The RX sensitive was 1 microvolt. Replacing a bad connector in the RX line improved sensitivity to 0.25 mv through the filters. TX power was 60 watts. There was no ripple under power supply under load. WG0N, testing the repeater from afar, gave the repeater a "clean bill of health".

OUTSTANDING ITEMS

DRC/TSA Aurora Site

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

Status: The Board has approved the MOU and is corresponding with the TSA relative to the installation of wiring and coax runs.

Move the Fusion repeater to Centennial Cone

Goal: Provide better coverage.

Status: The board has approved the move. The Frequency Coordinator is reviewing the move request. There may be an issue relative to the proximity to another repeater.

DRC Repository verses Cloud Services

Goal: Research using the DRC repository or another cloud service for off premise storing of club records.

Status: Research in progress. Brennan (AD0UZ) has submitted a proposal to the board.

Station 4 Remote Power Control

Goal: Determine which tech committee members will be responsible for controlling the system.

Status: Board members have the codes.

NEW ITEMS

Fusion Repeater – Mode?

Goal: Determine whether the repeater should be analog/digital or digital only. Local non-Fusion analog only users are subjected to immediate digital signals when remote Fusion users connect to the Colorado-Link network.

Status: The repeater will be optioned for Fusion-digital only. DRC has plenty of wide coverage analog repeaters available.

JULY MEETING - WHAT'D I MISS?

BY BILL RINKER, W6OAV

After introductions and announcements about the upcoming DRC ham fest, Gerry, W0GV, turned the meeting over to our guest speaker Chris (AE5IT). Chris' presentation was titled "Impedance, Reflections and Transformations".

Chris began the presentation by describing Wave Superposition theory, the causes of Standing Waves, Standing Wave Ratios (SWR), the four ways of measuring SWR and the development of SWR envelopes.

Chris then demonstrated the various types of Standing Waves and the action of impedance transformers using a homebrew mechanical version of a Shive wave machine, (Figure 1). He then used a Lecher wires equipped with LED detectors to demonstrate the various types of Standing Waves caused by different load impedances, (Figure 2).



Figure 1- SWR demonstration using a homebrew mechanical wave machine

As Chris demonstrated, a high SWR doesn't really matter relative to antenna radiating efficiency as long as the transmission line is very low loss and a tuner is used to match the output impedance of the transmitter to the input impedance of the transmission line. Any power reflected back to the tuner is re-reflected back to the antenna. Reflected power is not wasted power as long as the transmission line loss is very small, such as with open wire.



Figure 2 - SWR demonstration using homebrew Lecher wires

(Note: For more information on this subject, read the article titled “Don’t Worry About High SWR” in the February 2016 issue of the Roundtable. This issue is available at: [https://www.w0tx.org/RoundtableArchive/2016-RoundTables/RT201602\(FEB\).pdf](https://www.w0tx.org/RoundtableArchive/2016-RoundTables/RT201602(FEB).pdf)).

LEARNING NET REPORT

BY FRED HART, AA0JK

Thanks go out to our Net Controller(s): Doron (K1DBC), Barb (KD0SYD), Alex (KS0E).



The following topics were discussed this past month:

- Field Day
- Grounding
 - Grounding and Bonding – ARRL item #0659, <https://ask-the-electrician.com/electrical/electrical-code/electrical-grounding.html>
 - Grounding FAQ, <http://www.arrl.org/grounding>, http://www.w8ji.com/station_ground.htm
 - Email from Joel Hallas, W1ZR (ARRL – The Doctor is In) response to questions concerning Grounding.
- Online Logging
- Denver Radio Clubs swap fest August 18th. CBS Chanel 4 Weather Vehicle to be on display.
- Standing Wave Ratio (SWR)

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. Ques-

tions 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

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.

AUGUST MEETING PRESENTATION

BY BILL, WT0DX AND PAUL, NO0T

The setup and operation of remote stations is the topic for the August DRC meeting. Bill (WT0DX) and Paul (NO0T) will provide information on the various techniques for setting up and operating a remote station. Both have their own remote stations, and have made 1000s of contacts using their setups. The various approaches to setting up a remote station, and the most critical aspects leading towards reliable operation will be covered. Description of their stations will be provided, and live demonstrations should be possible at the meeting.

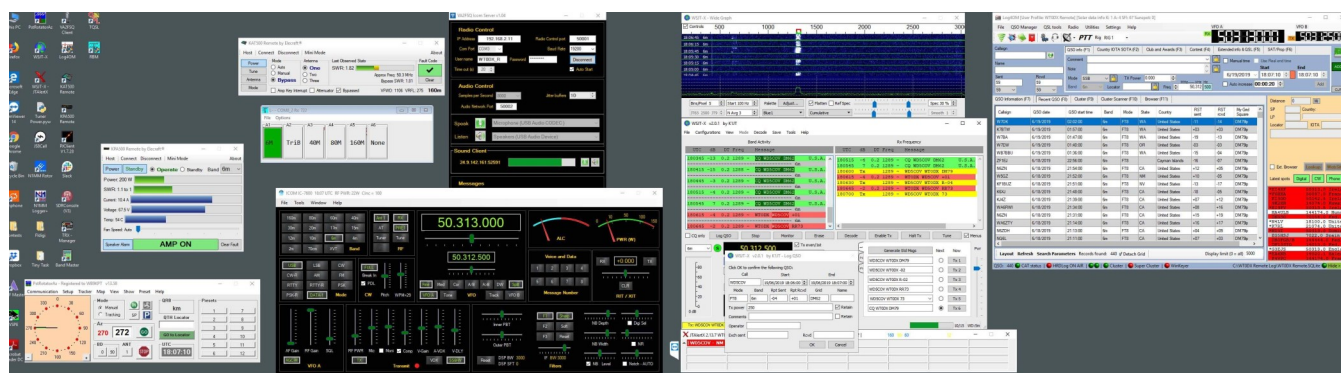


Figure 1 - The control panel for the WT0DX remote station

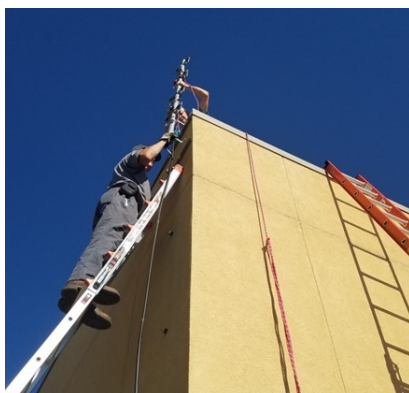


Figure 2 - The remote station for Paul N00T, located at his daughter's house.

A HOSPITAL VISIT

By KEVIN SCHMIDT, AD0GX

On Saturday, July 13th, five DRC members all went to the hospital, but not as patients. They were instead a small work party consisting of Orlen (WW0LF), Dave (WG0N), Doron (K1DBC), Tim (KE0VAW), and Kevin (AD0GX). Their mission was to relocate the antenna and the 447.825 MHz UHF repeater from the fifth story elevator tower of Ortho Colorado Hospital to the eighth story roof of neighboring St. Anthony Hospital. Both hospitals sit just west of the Denver Federal Center between Alameda and 6th Avenue. The team was met by Phil (KC0UQK), a St. Anthony Emergency Coordinator, to provide access and assistance.



One of the early challenges was getting access to the antenna on Ortho Colorado. The antenna was mounted on an exterior brick wall twenty feet above the roof line. How do you get a ladder tall enough to fit into a standard patient care elevator? Fortunately, Orlen and Kevin both had folding ladders with sufficient length to meet both required access and height.

Once on the roof, the team was quickly able to dismantle the antenna and carefully lower it down to members that safely took control. The heliax coax was easily disconnected from the antenna and efforts went in to salvaging the critical coax for future projects. Due to the hot summer sun and heat beaming down on the black membrane roof material, the coax connector sealer was a defiant and black sticky mess to remove. Who says you can't use too much sealer on connectors?

After disconnecting the coax from the lightning arrestor in the refreshing, air conditioned IT server room below, the coax was gingerly pulled up through



the conduit and out the weatherhead fitting on the roof. The coax was coiled and secured into its large diameter mass. Next came the rack removal of the UHF repeater and the duplexer cans. Care must be taken to avoid jostling the cans and changing their critical cavity frequency settings. The first half of the mission was accomplished. Off through the corridors to the St. Anthony Hospital side with all the equipment and tools.



We all exited the elevator on the eighth floor mechanical room on the St. Anthony side of the hospital. Out to the rooftop with a spectacular panoramic view of the city, we accessed the new radio room. Inside was a rack of VHF and 800 MHz radios, cousins to the UHF radio we were relocating. Up to vertical ladders to the roof was the antenna mounts that the UHF folded dipole antenna was going to be mounted to. No rooftop ladder was needed here! The antenna bracketing was quickly changed to meet the horizontal pipe that it was to be mounted to. The relocated antenna was secured to the mounts making sure that the antenna was plumb in all the vertical orientations. Any tilting would diminish propagation in that distance.

Meanwhile, others quickly made short order of the minor housekeeping needed for the repeater's new room. Previously abandoned coax was traced to the roof saving tremendous effort in restringing new coax. New grounding had to be installed in the new location. Fortunately, the hospital had installed a commercial grounding bus within the room and wiring took advantage of that.

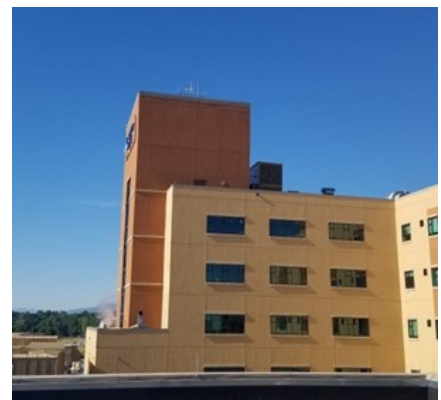


Uh Oh! Another small challenge. The Samlex 1223 power supply was equipped with a 20 amp twist-lock male plug to meet the previous IT room electrical requirements, not the standard 15 amp outlet on emergency power supply. Fortunately, Orlen's garage, a treasure trove of electrical and radio parts, provided the necessary wire and plug to make it work. (Remember, Hams never throw out any parts for fear that they may need it to be used again). Quick change on the plug and the repeater and duplexer was installed into its new rack.

Not fifteen seconds after the power was restored to the 447.825 MHz repeater that our club President Gerry (W0GV), was able to make a call on the channel from across town. Back on the air, again!

So why was the antenna and repeater relocated? The original location had an elevation of 5720 feet. The new location, 39043'1" N 10507'55" W, moved the antenna to a new height of 5790 feet allowing for greater distance of the signal.

As a side note, St. Anthony Hospital sits directly west of the Denver Federal Center where FEMA MERS (Mobile Emergency Response Support) has one of six regional detachments that provides Emergency Disaster Communications. With MERS' antenna farm at the DFC, St Anthony had to protect itself from the spurious radiation effecting medical testing within the hospital and was built as a Faraday cage. Radio communications are possible within the hospital through the usage of bi-directional antennas that allow outside signals from external roof antennas to specialized distributive antennas inside the hospital. This allows public safety agencies the ability to communicate into and out of the hospital.



The Denver Radio Club can't extend enough appreciation for the assistance provided by Phil (KC0UQK) in allowing the DRC to undertake this project. In addition, the DRC appreciates the support that Centura St. Anthony Hospital, a DRC supported agency, which provides in allowing the club to use this site.



UP IN THE AIR AGAIN

By TOM KOICIALSKI, KC2CAG

My stealth vertical went horizontal for a few weeks. The neighbor behind my house wanted to replace the almost 40 year old fence with a new one, so I agreed to split the cost. In preparation for tearing down the old fence, I took down my 31 foot telescoping pole which supported my vertical wire HF antenna. The pole had been firmly attached to the old fence. So it went horizontal...and silent. And, for the sake of household serenity, I relocated the pole to an area of the yard where it would be less visible.

The vertical wire was matched by an SGC-237 coupler, so why not replace it with a rain gutter antenna matched by the same coupler? Surely you have heard the stories about how well a rain gutter can serve as a decent antenna, right? Maybe for somebody, but not for me, so I had to set about to re-do the vertical, with some improvements, after the new fence went up.

The former setup used an old telco enclosure as additional weatherproofing for the SGC-237 and its connections. An MFJ bias tee (for providing power to the coupler) was screwed to the fence and protected from the weather by a suitably altered plastic milk jug. According to my wife, the telco enclosure looked like a rodent trap, and the milk jug / bias tee combo stuck on the fence looked even worse. My ground radials were a hodgepodge of bare copper wire emanating from the coupler and strung out along the fence lines and in the mulched planting areas around the backyard bushes. Besides being a routine tripping hazard, they were accidentally (I'm told) occasionally cut when my wife trimmed the bushes.



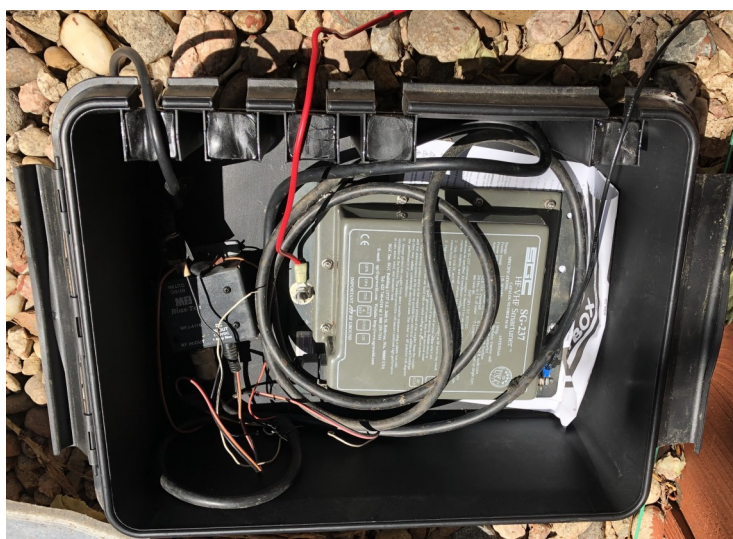


Additionally, the neighbor's cottonwood (sic) tree had grown in such a way that it pushed my vertical off kilter near the top. So improvements were needed.

I spent some quality time wrangling with the cottonwood tree, attempting to remove enough branches to allow the vertical to have a clear path vertically with the re-erected pole.

I had a surplus rectangular plate sitting on a shelf in the garage, waiting for some appropriate use. I used it at the base of the antenna pole to couple the ground radials before routing them to the SGC coupler. The radials themselves were now insulated 14 gauge stranded copper wire which allowed a neat, straight placement along the fence lines and in and around the planting area, but located out of the way of the bushes to eliminate tripping and (accidental) cutting. I coated the radial wire connections at the ground plate with a brush-on plastic compound.

The "rodent trap" was replaced with a commercial weatherproof enclosure that was big enough to house both the SGC coupler and the bias tee. Both were now located on the ground next to the base of the antenna.



Almost done! The final step was to shroud the weatherproof enclosure with an ersatz boulder that I obtained free from a neighbor a few years ago... figuring that someday I might have a use for it. That day had arrived.

Done. And it works! Bring on the peak of the next solar cycle!! Can you see the antenna?



WWV CENTENNIAL - WE NEED YOUR HELP!

FROM DAVE SWARTZ, W0DAS

We are contacting you and your club today to ask for help with several aspects of the WWV special event station, WW0WWV.

We are in need of more operators! The SES will operate from Friday evening, September 27, through Wednesday evening, October 2, 2019, continuous. We are looking for individual or paired operators, CW, SSB, and data modes, to work 2-hour shifts and an opportunity to work multiple shifts, if desired.

Running an event of this magnitude takes resources. If you can't personally join us this fall and would like to help the WW0WWV special event station, we are accepting donations via our website, <http://www100.com/index.php/donate-to-www100>. Any financial support you can offer will certainly help!

If you live within 2 hours of Fort Collins, consider loaning your gear to the project. We are accepting loaner equipment like power supplies, coax, antenna rotors, etc. Do complete the on-line form if you can provide any assistance: <http://www100.com/index.php/volunteering/volunteer-equipment-form>

If you have any questions or would like to discuss the WWV event, please contact the project at WWWV100@ncarc.net. We hope to see you this fall at WWV!

73,

Dave Swartz
W0DAS
WWV Centennial Committee

IS HAM RADIO A HOBBY, A UTILITY...OR BOTH? A BATTLE OVER SPECTRUM HEATS UP

LINK PROVIDED BY TOM KOICIALSKI, KC2CAG

From the July 8th IEEE (Institute of Electrical and Electronics Engineers) *Spectrum* magazine: spectrum.ieee.org/tech-talk/telecom/wireless/is-ham-radio-a-hobby-a-utility-or-both-a-battle-over-spectrum-heats-up

SOLAR UPDATE

PROVIDED BY FRED HART, AA0JK

ESA / SOHO – Solar Observer

All seemed quite this month. Low activity as the Sun bottoms out at solar minimum.

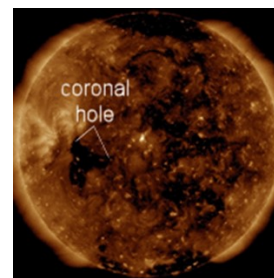
Forecasts are very uncertain, but as usual the forecasts for the next solar cycle are all over the map.

“Grand Solar Minimum” Lies Ahead??? <http://www.arrl.org/news/nature-article-suggest-a-grand-solar-minimum-lies-ahead>

<https://www.nature.com/articles/s41598-019-45584-3>

A Sunspot from the next solar cycle made a brief appearance on July 1st. It materialized in the Sun's southern hemisphere (S21W02), then hours later, vanished. The polarity of its magnetic field marked it as a likely member of Solar Cycle 25. It produced a small B-Flare as it formed on the high latitude of the southern hemisphere.

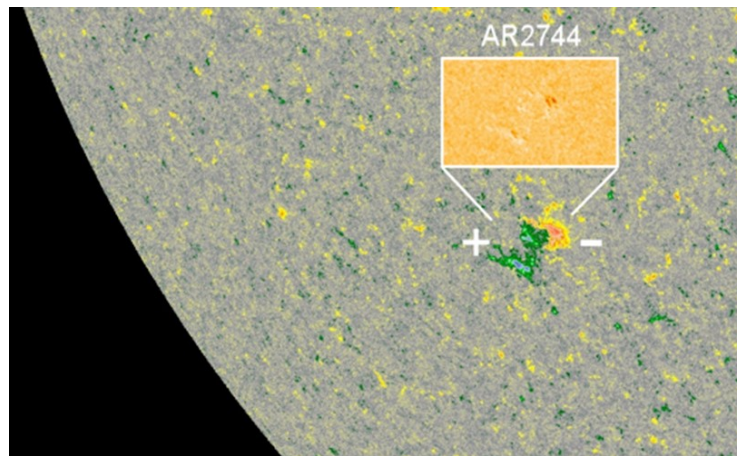
Image Credit: SDO/AIA



All was quiet. Solar wind flowing 550 km/s from this equatorial coronal hole was expected to produce an Earth directed solar wind stream forecast to reach Earth on July 4th.

No fireworks on the 4th of July. Solar activity was very low. NOAA forecasters said there was no more than a 1% chance of even the feeblest solar flare on July 4th. Indeed, the Sun's X-ray output was flat-lining. No fireworks? This is what happened as the 4th of July coincided with one of the deepest Solar Minima in a century.

July 8th - Another sunspot from the next solar cycle: Solar Cycle 25 was coming to life. For the second time in July, a sunspot from the next solar cycle emerged in the Sun's southern hemisphere. Numbered "AR2744", it is inset in this magnetic map of the Sun's surface from NASA's Solar Dynamics Observatory:



How do we know this sunspot belongs to Solar Cycle 25? Its magnetic polarity tells us so. Southern sunspots from old Solar Cycle 24 have a -/+ polarity. This sunspot is the opposite: +/- . According to Hale's Law, sunspots switch polarities from one solar cycle to the next. AR2744 is therefore a member of Solar Cycle 25.

This development does not mean Solar Minimum is finished. On the contrary, low solar activity will probably continue for at least another year as Solar Cycle 24 decays, and Solar Cycle 25 sputters to life.

July 10th - The solar wind arrived: A high-speed stream of solar wind was buffeting Earth's magnetic field, causing intermittent G1-class geomagnetic storms.

The weak CME passage was followed by the onset of an expected coronal hole stream, and was enough to generate a minor (G1) geomagnetic storm. The solar wind speed was above 650 km/s, and was expected to lead to additional periods of geomagnetic unrest at higher latitudes.

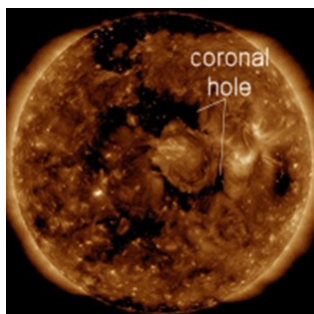
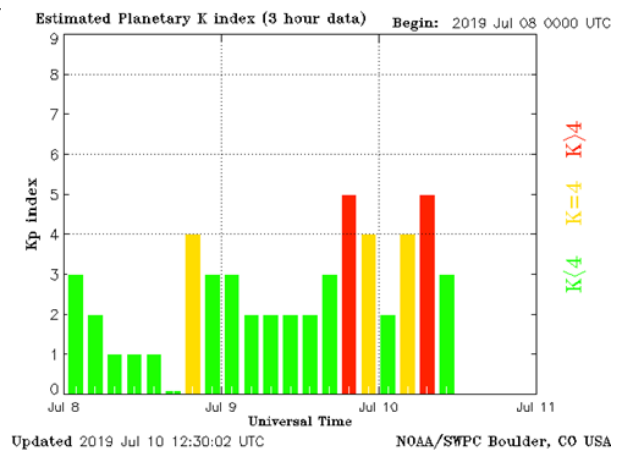
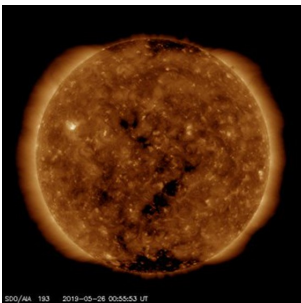


Image Credit: SDO/AIA

Solar wind flowing from this coronal hole was expected to reach Earth on July 10th.

The coronal holes were the only features connecting with Earth's magnetic field, magnetically pushing, and intensifying the solar wind.



July 13th - Larger coronal holes confined to the polar zones are indicative of solar minimums.

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

24 hr Summary... Solar activity has been very low. No sunspots were present on the visible disk. An approximate 15 degree long filament erupted along a channel centered near S28W42. This filament was in the vicinity of old Rgn 2744 (S28, L=214). Coronal dimming was observed in SDO/AIA 193 imagery.

Initial LASCO C2 imagery observed a narrow, slow-moving CME off the SW limb. WSA/ENLIL modeling of the CME indicated no Earth-directed components.

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

73,

Fred
AA0JK

THE ORIGIN OF "HAM SHACK"

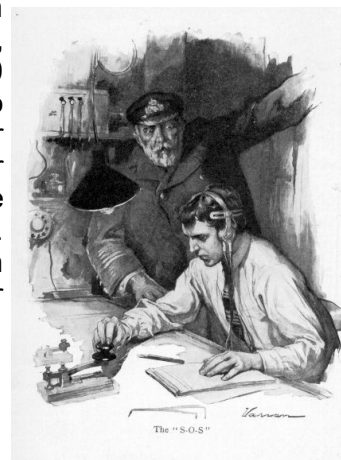
BY BILL RINKER, W6OAV

The following article was taken from the November 1965 issue of the Roundtable. The author is unknown.

The "ham shack" is a term we hear on the airwaves daily. On very few occasions have we heard the question "when did it start?" If you looked into the shack of yours truly or most any other ham shack's junk box, the name would probably speak for itself! I have been queried, "Why do you call it the shack?"

Just before the turn of the century, when a radio operator was known as a "Marconi Man" and radio was commonly known as "wireless", radio was just beginning to prove its worth on the seas. In about 1900 or 1901, "wireless" radio was to be installed on board a ship where no room was available. A wooden lean-to was constructed on a lower deck against an iron bulk head. The shack was about 4.5' by 3.5' for something like \$20.00. This is believed to be the start of our term "the shack". The equipment was a huge 8 inch spark coil plus transformer. The "Marconi Man" needed a strong arm to actuate the long bar which acted as a key as we know it. How does this compare with your shack?

(Picture Credit: pinterest.com)



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

[Classic Radio Gallery](#)

THE ROUNDTABLE ARCHIVE

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

THE ROUNDTABLE ARTICLE INDEX

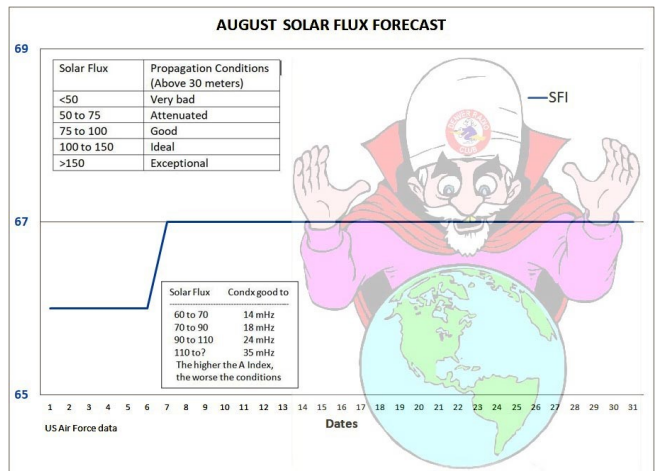
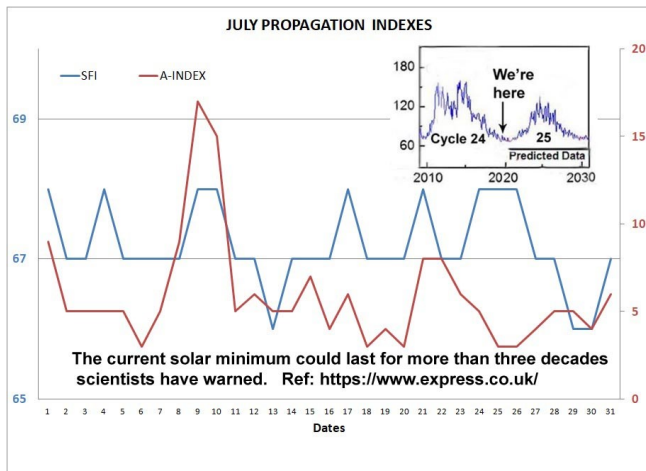
Go to: <http://www.w0tx.org/RoundtableArchive/-RoundTables-Index.pdf>

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 |
|---------------------------|----------|--|--|
| Western CO ARC Hamfest | 08/10/19 | First Christian Church, Grand Junction | W0RRZ.org |
| Denver Radio Club Hamfest | 08/18/19 | Jefferson County Fairgrounds | W0TX.org |

UPCOMING QSO PARTIES

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

| State/Province | Start Date | End Date | Sponsor Website | Notes |
|----------------|------------|------------|--|-------|
| Maryland-DC | 08/10/2019 | 08/11/2019 | Anne Arundel Radio Club | |
| Hawaii | 08/24/2019 | 08/26/2019 | Hawaii QSO Party | |
| Kansas | 08/24/2019 | 08/25/2019 | Kansas QSO Party | |
| Ohio | 08/24/2019 | 08/25/2019 | Ohio QSO Party | |
| Colorado | 08/31/2019 | 09/01/2019 | Pikes Peak Radio Amateur Association | |
| Tennessee | 09/01/2019 | 09/02/2019 | Tennessee QSO Party | |
| Alabama | 09/07/2019 | 09/08/2019 | Alabama QSO Party | |
| Iowa | 09/21/2019 | 09/22/2019 | Story County ARC | |
| New Jersey | 09/21/2019 | 09/22/2019 | New Jersey QSO Party | |
| Washington | 09/21/2019 | 09/22/2019 | Western Washington DX Club | |
| Maine | 09/28/2019 | 09/29/2019 | Wireless Society of Southern Maine | |
| Texas | 09/28/2019 | 09/29/2019 | Texas QSO Party | |
| 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 | Radio Society of Tucson (RST) | |

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 (-) 100Hz PL | Yaesu Fusion digital, Wires-X and analog. 100 Hz tone required for analog. |
| 70cm | 446.7875MHz (-) | BrandMeister Repeater: Slot 1 – Wide Area Traffic, Slot 2 – Local Talk Group 310804 |



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


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e-mail: denver@hamradio.com

| AUGUST 2019 | | | | | | | <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 | 3 222 MHz & Up - Starts 1800 UTC | |
| 4 222 MHz & Up - Ends 1759 UTC | 5 | 6 | 7 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)  First Quarter | 8 | 9 | 10 | |
| 11 | 12 | 13 | 14 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL) | 15  Full Moon | 16 | 17 10 GHz & Up - Starts 6 AM local | |
| 18 DRC Hamfest @ Jefferson County Fairgrounds 8:30 a.m. - 1:00 p.m. 10 GHz - Ends midnight local & Rookie Roundup RTTY 1800 - 2359 UTC | 19 | 20 | 21 DRC Meeting Elmer 6 p.m. General 7 p.m. | 22 | 23  Last Quarter | 24 | |
| 25 | 26 | 27 | 28 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL) | 29 | 30  New Moon | 31 | |

DRC BOARD OF DIRECTORS

| | | | | |
|----------------|--------|-------------------|--------------|--|
| President | W0GV | Gerry Villhauer | 303-467-0223 | w0gv@hotmail.com |
| Vice-President | K0HTX | Dave Gillespie | 303-795-8225 | k0htx@comcast.net |
| Secretary | WW0LF | Orlen Wolf | 303-279-6264 | owolf@mines.edu |
| Treasurer | K0TOR | Jim Beall | 303-798-2351 | k0tor@arrl.net |
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| 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 | 303-330-0721 | Contact owolf@mines.edu |
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| 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