



THE ROUND TABLE

Monthly Newsletter Of The Denver Radio Club

Since 1917

July 2021

PRESIDENT'S MESSAGE

BY GERRY VILLHAUER, W0GV

Hello DRC Members,

I hope you all are well and staying safe. I have been asked by several members when we are going to go back to regular in person meetings. My answer at this point is, I really do not know. We are investigating the possibilities of a couple new locations. As far as us going back to the Jeffco Court Building, the county is only allowing meetings with the "Internal Organizations" meaning the county commissioners and like business. No outsiders at this time. In any event, we will continue with our virtual meetings for the time being.

Field Day was a successful event. Not to say we did not have a few hick-ups. I guess that is always the way with any event and the several rain storms that passed through did not help. The point is, we recovered and continued on, which is the whole idea if this was an actual emergency situation. Overall, our new location worked out very well. I heard many good comments and very few negative. It is much easier setting up and tearing down there than at Chief Hosa, because of the flat ground. We did have a lot visitors and newly licensed hams, especially on Saturday. Band conditions were very poor. Most of our contacts were on 20 meters and some on 40 meters. We could have accommodated getting more visitors and new hams on the air if we had better band conditions and operated on several bands. Doron will have our stats and his comments as soon as all is tabulated. Thanks to all who help and attended!

Congratulations to Bill Worthington (KE0YKV) our June meeting winner of a \$25 HRO gift certificate.

Thanks to Bob (N6TV) for our June presentation "Everything you need to know about USB and Serial Interfaces". Bob defiantly knows his way around the subject. Lots of great information was shared.

Out July presentation will be a "Don't Miss it Program" titled "Kit Building for Success", presented by Joe Eisenberg (K0NEB). If his name is familiar to you, that is probably because he is the kit building editor for CQ Magazine and the current author of the Construction Techniques chapter in the annual ARRL Handbook. Joe travels and speaks at ham fests and conventions and puts on group kit building experiences from very simple to complex kits. Mark your calendar for our July 21, 2021 virtual meeting. Don't forget the Elmer Session, prior to our meeting.

Thanks to all of our new members who have recently joined the DRC. Your support is very much appreciated. Please come to meetings and events and stay active. Your name and call will be posted in this edition of the Round Table.

73 for now,

Gerry
W0GV
President



WHO'S NEW IN THE DRC?

BY BOB WILLSON, KC0CZ

The DRC is a very active club in the Denver metro area and we'd like to have all of our members listen for these new calls and welcome them to the club and repeaters. Welcome to our newest members:

David Maddox - WA1YML	James Langsted - KC0RPS	Joseph Malingowski - N3TAV
Robert Cummings - WA4MBG	Richard Nelson - N6WHV	Kevin Hines - K0KMH
Tom Martin - KD0WPQ	Mary Stinson - K0ZV	Lloyd Barber - KE0AB
Daniel Acker - KF0FSY	Walton Stinson - W0CP	Evan Moak - KF0FPI

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

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

LEARNING NET REPORT

BY FRED HART, AA0JK

Purpose:

We are here to help introduce, and promote, a variety of topics of interest to all amateur radio operators.

Our intent is to help participants get more active, involved, and engaged in amateur radio.

Topics of interest we encourage:

Personal Communications

-Getting started in the various modes, of communications.

Emergency communications

- Participation in public service.
- Training in emergency communication for volunteers.

Radio electronics, and technology

- Kit building, understanding signal propagation. and building antennas.

We strive to put experienced members / volunteers, at the forefront, as a regular source of knowledge-sharing in the Denver Radio Club. We hope members participating in the DRC learning net will find it rewarding to share experiences, and learning, that will motivate more of our amateur radio community toward lifelong journeys as Hams.

If you have experience in, and have a passion for, any amateur radio related topics, please consider providing the DRC with presentations that will motivate other Hams to share your interests.

June topics we have discussed:

- Get On The Air – New Hams – ARRL Get on the Air (arrl.org)
- Getting Your Amateur Radio License – Upgrading – On line study-aids
- Space Weather – Geophysical CME impact on power grid. - Australia power grid down due to massive solar wind shock wave impact on earth's upper atmosphere



- Raspberry Pi Uses in Amateur Radio KM4ACK GitHub - km4ack/pi-build
- Emergency Communications
- Grab and Go emergency communications
- Solar Power for emergency communication (Field Day)
- OH8STN Ham Radio – Ham Radio, Amateur radio, Raspberry Pi, Portable Power, grid down, off grid, Emergency Communications, Winlink, JS8Call
- July QST
- MARS Military Affiliated Radio System
- Internet Linking system
- Hellschreiber: <https://youtu.be/-on11UVAcrw>
- Surfin': Check Out One Heck of a Mode (arrl.org)
- Mile Hi Hook and Ladder Event

Great topics from our group. We certainly enjoy everyone's participation. Thanks to all.

If you are listening and don't yet have your license, you can contact us at the W0TX web-site, w0tx@w0tx.org, or elmer@w0tx.org.

If we don't have the answer here on the net, we have a lot of experienced Hams in the club that can help.

Getting that first Technician license? Upgrading to General or Extra? We're here to help. You may also find Dave Casler's Amateur Radio Licensing Guides helpful: <https://dcasler.com/ham-radio/>

We would encourage those who have been Hams for several years to also join us. Your experience and input is welcomed.

Finding your place in the amateur radio community - -> Are you looking to be more involved, learn new skills, find a mentor or friends to share your amateur radio interest? Check out your local Denver Radio Club, and start making the most of your amateur radio license.



arrl.org/public-service

Use your communication skills to help keep your community safe!



weather.gov/marine/ham

warrenares.org/home/skywarn-weather-spotting

SKYWARN Spotter Training Updates: weather.gov/bou/spot_training



During severe weather events, amateur radio operators bring significant resources to storm spotting, including an established communications system that can function in an emergency. They provide real-time information to partners like emergency management and forecasters at the national weather service. The data received from hams helps issue weather watches, warnings, and advisories.

What topics would you like to discuss? Join us Wednesday nights, 7:30 PM, 145.490, 100 Hz PL tone & linked to 448.625, 100Hz PL tone.

73,

Fred
AA0JK
elmer@w0tx.org

P.S.: A special thanks goes out to Doron, K1DBC, for net control duties, and his web site with the Green Screen adding an additional great perspective to the Learning net activities.

JULY PRESENTATION ANNOUNCEMENT

BY JOE EISENBERG, K0NEB

My presentation will be "Kit Building Techniques For Success". I will go over how to handle and sort parts, proper solder and soldering tools, and take a look at some kits appropriate for beginners, intermediate builders and experienced builders.

I am the current kit building editor for CQ Magazine and have produced the column for 12 years. I also am the current author of the Construction Techniques chapter in the annual ARRL Handbook, since the 2014 edition. I have been licensed since 1969 and am a Life Member/Diamond Club member of ARRL. I travel and speak at numerous hamfests and conventions and can put on group kit building experiences for clubs from very simple kits up to more complex kits for experienced builders. The photo of me was taken while operating on the set of "Last Man Standing".



WHEAT RIDGE SIREN TEST

BY BRENNAN PATE, AD0UZ

I received a report that the test went well. Thanks to all that helped: W0BKs, KE0WWW, KE0CNU, K0LAI, K6HJV, KD0NRO, KD0WMO, KD0YMG, WZ0S, N0GWM, WW0LF, AA0JK, K0AFQ, K1DBC, KD0DUJ, K0LAI, WG0N, K0KPS, and W0GV! We'd love to have you join us next year.

Apologies for the long-winded report.

INVISIBLE HF ANTENNAS

BY BILL RINKER, W6OAV

Are you in an HOA environment where you cannot install an outdoor HF antenna? If so, consider using #26 Poly-Stealth wire which is very strong and nearly invisible. See Figure 1. The wire will easily handle 100 watts SSB PEP or 50 watts CW. In years past I've had no problem running 500 watts PEP into a 40 meter dipole made with this wire. Keep in mind that this wire is rated at 3.7 amps into a long run. 100 watts of RF into a dipole's feed point produces approximately only 1.2 amps of RF current at the feed point tapering to nearly zero at the ends of the antenna.

The Poly-Stealth wire is advertised as:

- Ideal balance of strength and flexibility.

- Low-Gloss finish and small size makes wire disappear into the background.

- Superior abrasion resistance for running through trees.

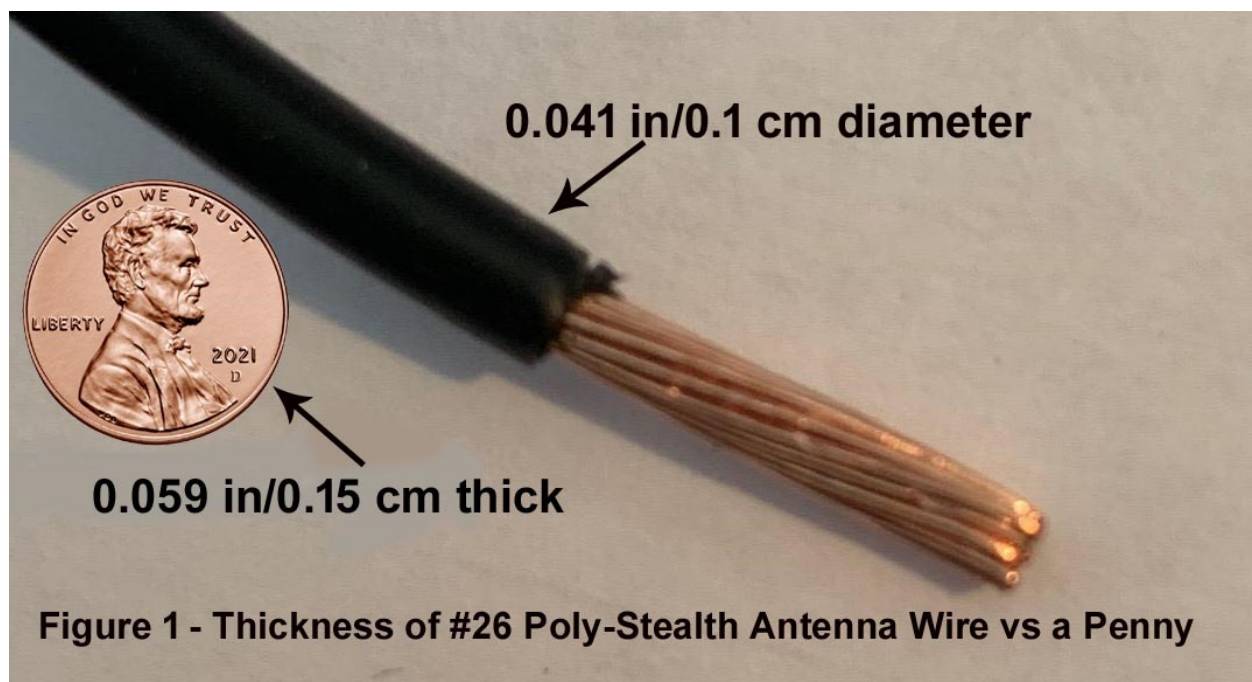
- UV & Weather resistant for use on the seacoast or in other harsh environments subjected to acid rain, high wind, or high snow and ice loads.

The Poly-Stealth wire is available at:

<https://www.amateurradiosupplies.com/category-s/218.htm>

<http://www.davisrf.com/antenna-wire/polystealth.php>

<https://www.dxengineering.com/search/part-type/wire/product-line/dx-engineering-stealth-antenna-wire?autoview=SKU&sortby=Default&sortorder=Default>



WHAT'S THAT SOUND?

“DIT DIT DIT RY RY RY DIT DIT DIT”

BY FRED HART, AA0JK

Denver Radio Club's Wednesday Night Learning Net.

Ah yes, just to break up the normal routine of the net, Doron, K1DBC, throws out the question, “What's That Sound?”. Game show time. He captures every ones attention with the quiz. And yes, fond memories also come to the forefront, as the rhythm of musical sounds came across the air.

For those of us that have enjoyed the RTTY mode, past and present, the answer came immediately, “Teletype”.

Despite the advancements in technology, Teletype, past, electrical mechanical generated. Now computer software driven, is still with us.

The musical beat of a model 28 ASR, was introduced to me while in the Navy. Duty station, Naval Air Station Agaña, Guam. A major communication center at the time.

Priorities were first, on arrival. Reporting for duty, paper work, housing assignment, and chow-hall. This completed, my next question was, “Where's the Ham Shack?”

After inspecting my amateur radio license, I was issued a key to a second floor quonset-hut. Upon entering, I found rooms full of communication equipment, mostly Teletype. The appearance of it all showed little activity for quite some time. First on the list, lets clean this place up. Major project.

Once some semblance of origination was reached, the Ham Radio portion of the area became the focal point of this adventure.

A well equipped operation position was before me. Collins radios, as per the norm for Navy Ham Shacks. Hallicrafter transceiver. A three KW linear amp to the left of main desk, floor to ceiling cabinet. And yes, Teletype. Beautiful! I had found my future getaway from Aviation duties.

A small room next to this, was a small area with a desk and a model 28 ASR. This would be my operating position for the following months as my tour of duty unfolded. I unpacked my personal radio and peripherals. Always with me, duty station to duty station.

I hooked my transceiver to the station's TH6 DX beam, powered-up, and I was on the air. CQ CQ CQ, (CW), this is WØWMM/KG6 calling. Unbeknownst to me at the time, this station was rare DX. The airwaves lit-up.

The months that followed, between detachments, around the pacific rim, this was home away from home. Upon completion of my tour of duty, I was offered the model 28. At first I hadn't taken the offer seriously, then Chief Don Lefavor, who had also helped me join MARS, told me that as a member of MARS, I was entitled to have this equipment. He had the teletype shipped to the communications center for overhaul, then crated, and shipped to Colorado. It still graces my ham shack to this day. (See Image)



RTTY is a great mode. The rhythmic sounds are still heard in my shack.

[https://youtu.be/ dHP7eB8yR8](https://youtu.be/dHP7eB8yR8)
<https://youtu.be/e8mO3F8qfvk>
<https://youtu.be/dSyRDzQ0FfQ>

73,

Fred
AA0JK



SOMETHING TO BUILD IN YOUR SPARE TIME

PROVIDED BY TOM KOCIALSKI, KC2CAG

Here is a link for an interesting video on building your own vacuum tubes:

<https://www.youtube.com/watch?v=EzyXMEpg4qw>



STATION 4 BUILDING UNDERGOES REPAIRS

By BILL RINKER, W6OAV

The club owes a big "Thank You" to Bill, AC0VC. He spent the hottest record breaking day in June (101F) repairing weather damage which had occurred to the Station 4 building. Figure 1 shows the weather damage. Figure 2 shows the results of Bill's repairs. All areas in brown are new. Again, thank you Bill.



Figure 1 - Before repairs



Figure 2 - After repairs

RF SAFETY ASSESSMENT

By BILL RINKER, W6OAV

New FCC RF Safety rules for hams went into effect on May 2021. Hams must do an assessment to see if radiation from their antennas is at a safe level for themselves (controlled environment) and for their neighbors (uncontrolled environment). The hams should then keep this assessment handy in case a neighbor issues a complaint. At this time the FCC may want to see a copy of the assessment.

So, how does a ham easily perform the assessment? One way is to use the RF Exposure calculator kindly provided by the Lake Washington Ham Club at:

<http://www.lakewashingtonhamclub.org/resources/rf-exposure-calculator/>

This calculator is extremely easy to use. Just enter into the calculator the operating power, antenna gain, duty cycle, operating frequency and click "Calculate". The calculator will then display the distances required to meet the new RF safety requirements. Figure 1 shows an example of the calculator configured for a 1KW SSB 10 meter station. Notice that the allowable power density for the neighbor (uncontrolled environment) is stricter than that for the ham (controlled environment).

A wealth of RF safety information is available at: <http://www.arrl.org/rf-exposure>

Parameters

- Power at Antenna: (Need help with this?) (watts)
- Mode duty cycle:
- Transmit duty cycle: (time transmitting)
You transmit for minutes then receive for minutes (and repeat).
- Antenna Gain (dBi):
- Operating Frequency (MHz):

Include Effects of Ground Reflections

Results for a controlled environment:

Maximum Allowed Power Density (mw/cm²):

Minimum Safe Distance (feet):

For an uncontrolled environment:

Maximum Allowed Power Density (mw/cm²):

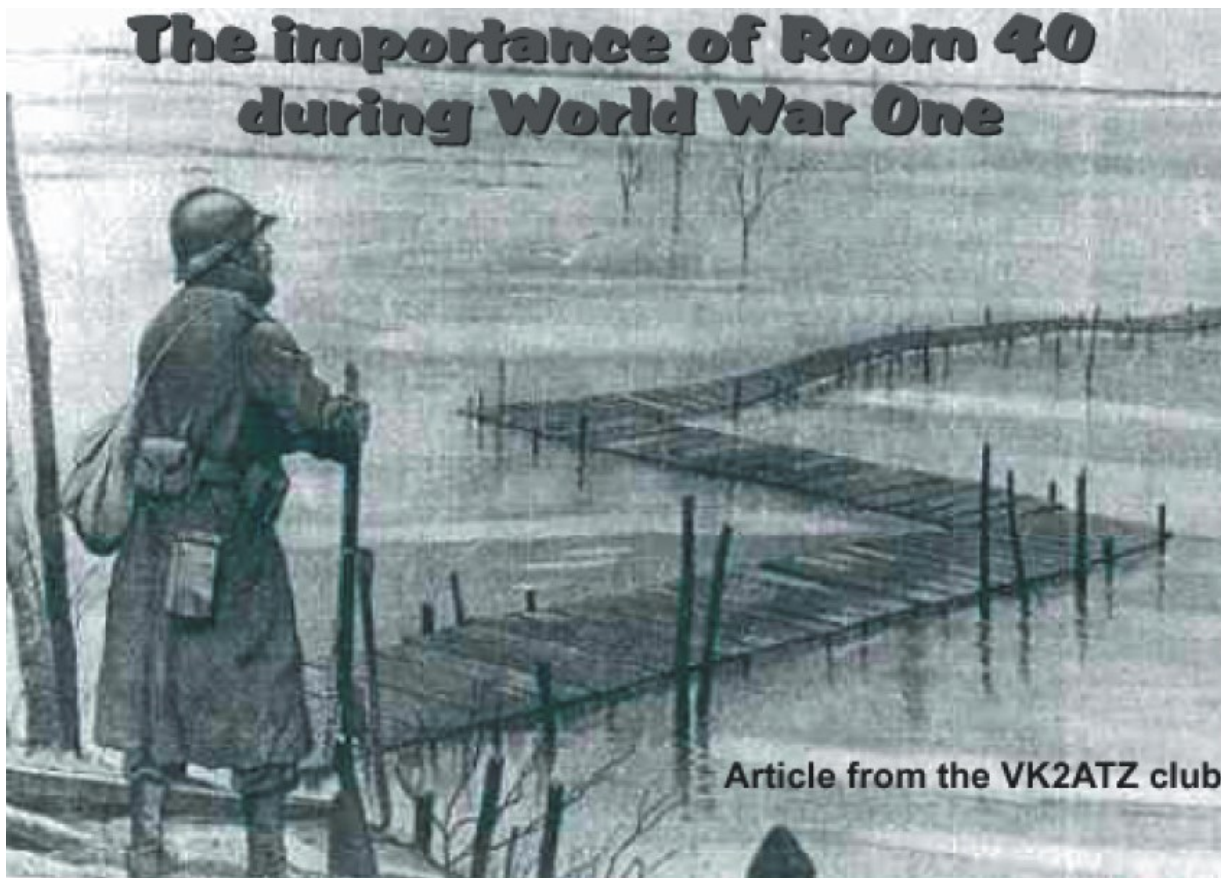
Minimum Safe Distance (feet):

Figure 1 – Sample RF Exposure Calculator Set for 10 Meters

THE IMPORTANCE OF ROOM 40 DURING WORLD WAR ONE

ARTICLE FROM THE VK2ATZ CLUB
PROVIDED BY BILL RINKER, W6OAV

This article came from a many years defunct English magazine titled "Ham Mag".



Article from the VK2ATZ club

Naval Intelligence Division to examine intercepted German Radio messages. The sea messages had been intercepted by the stations of the Marconi Company. Sir Alfred quickly realised that valuable information could be gained by reading these messages. Staff were recruited and Room 40 (later designated 1D25) of the Admiralty was established with the task of intercepting and breaking the enemy's messages and codes.

The first intercept station was set up in a Coast Guard Station in Huntstanton with the help of two amateur radio operators: Russel Clarke and B. Hippisley. The number of these stations grew to 14 with all having direct lines to the Admiralty.

In 1914 the codebreakers obtained copies of the German codebooks from captured or destroyed ships. A copy of the Mercantile Signal Book was obtained from Australia while the German Naval Signal Book was obtained from Russia. In April 1915 a copy of the German Diplomatic Code was obtained and another rich source of information had been secured. These books were the basis of breaking and reading coded traffic..





Room 40 was able to give early warning to the British Grand Fleet about the movement of the German Fleet and in early 1915 the first Direction Finding (DF) station was established at Chelmsford. Soon after, other DF stations were set up along the coast of England and Ireland. Room 40 now had another important source of intelligence, as DF stations proved invaluable in the location of German U-boats. In May 1916 Room 40 was instrumental in relaying up-to-date information on the German High Sea Fleet during the battle of Jutland. Unfortunately the information was relayed without comments and proved confusing. This resulted in the information being doubted by the Admiralty and to their detriment was not acted upon.

Although the Battle of Jutland was a victory for the Germans, they were not eager to face the British Fleet. Therefore the Germans began extensive submarine warfare on merchant shipping which resulted in submarine operations becoming top priority for all staff of Room 40. Every scrap of information on the movements and intentions of German submarines became invaluable to the Admiralty. When the Germans changed their codes in 1916, Room 40's DF and interception sections were so experienced that they were able to obtain a good flow of intelligence. More help came from divers who recovered codes from sunken Uboats.

Room 40 was also able to give advanced warning when the Germans sent their Zeppelins to drop bombs over England. Westlakes Amateur Radio Club Inc. Magazine December 2008 In 1917 Room 40 was reorganised, and instead of simply passing decrypted messages, they were combined into intelligence reports. After years of studying the German Fleet, the staff of Room 40 were very knowledgeable and capable of making accurate intelligence assessments.



In early 1917 the cryptographers of Room 40 worked on what was to become the most important message solved during WW I: The Zimmerman Telegram. This message was sent by Zimmerman, the German Secretary of State fro Foreign Affairs. To the German Minister in Mexico. Room 40's solution of the telegraph helped propel the United States into the First World War when it was shown to the President. Following in the text of the famous telegram : "We intend to begin unrestricted submarine warfare on the first of February. We shall endeavour in spite of this to keep the United States neutral. In the event of this not succeeding we shall make Mexico a proposal of alliance on the following basis : Make war together, generous financial support and an understanding on our

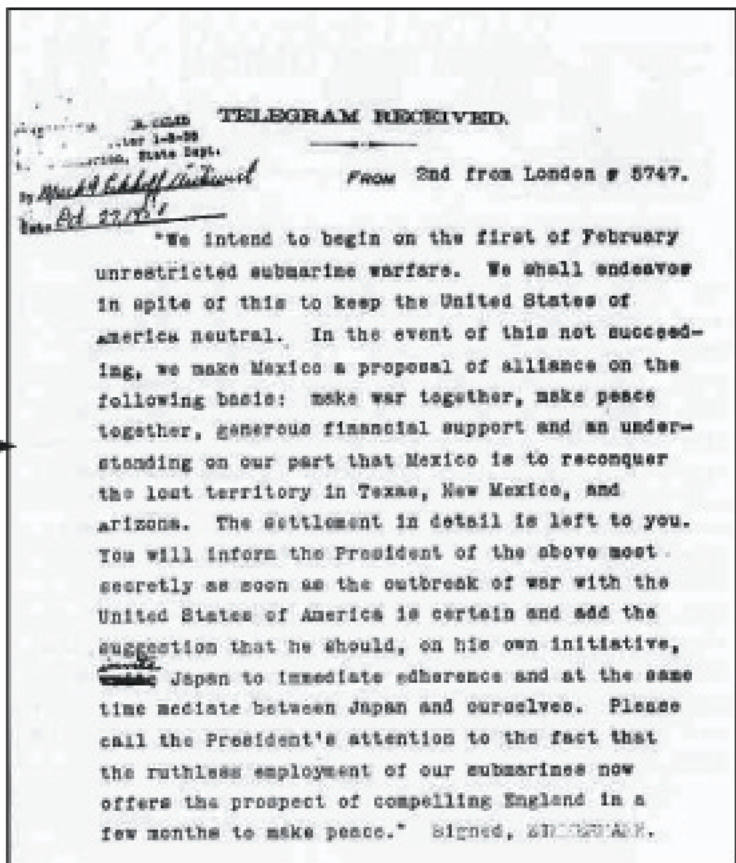
part that Mexico is to reconquer the lost territory in Texas, New Mexico and Arizona. The settlement detail is left up to you. You will inform the President (of Mexico) of the above most secretly as soon as the outbreak of war with the United States is certain and add the suggestion that he should , on his own initiative invite Japan to immediate adherence and at the same time mediate between Japan and ourselves. Please call the President's attention to the fact that the unrestricted deployment of our submarines now offer the prospect of compelling England to make peace within a few months. Acknowledge receipt. Zimmerman."

By 1918 the Germans were aware that their communications were being read and adopted methods to prevent the British knowing or guessing the movements of their fleet. But in early November, plain language messages were intercepted indicating that the German Fleet had mutinied and so ended World War One. An important achievement by Room 40 was that after the war, intercepted traffic was used as evidence at trials of spies and saboteurs. It is estimated that from October 1914 to February 1919, Room 40 had intercepted and solved 15,000 German secret messages. Room 40 employed 800 wireless operators and 80 cryptographers and clerks.

Room 40 was taken over by the Foreign Office and became Great Britain's main cryptoanalytic agency. In 1939 the Foreign Office moved its Department of Communications to Bletchley Park, about 50 miles north of London and that where Ultra Secret and a man called Intrepid come in, But that's another story...

World Radio January 1991

The Zimmerman telegram



WYOMING HAMCON 2021

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

The Wyoming ARRL Section Convention will be held on October 9th. We will be opening early registration soon. See wyhamcon.org/site for more details.

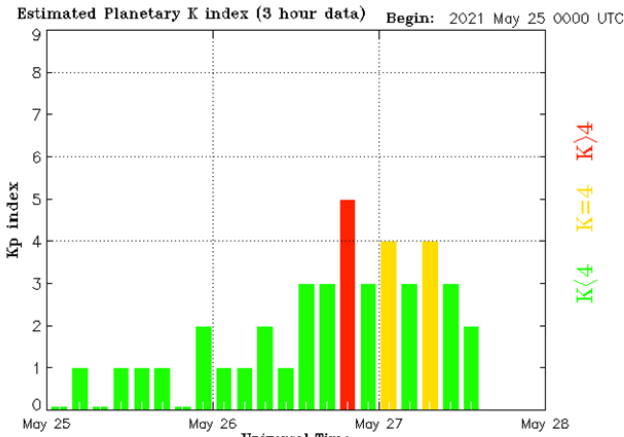
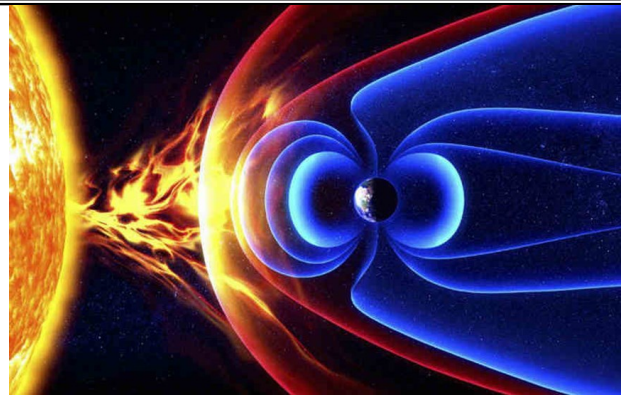
We have a large venue, and we plan to have as many activities as we can during the event. If anyone has more questions, or would like to be a vendor or forum presenter, please contact us at: wyhamcon.org/site/contact-us

73 and we hope to see you all in October in Cheyenne.

SOLAR GEOPHYSICAL ACTIVITY REPORT

PROVIDED BY FRED HART, AA0JK

June started out quiet, but only after the last days of May launched an unexpected coronal mass ejection. The CME was not fast, but it was dense, doubling the density of solar wind in its wake. The impact ultimately sparked a G1 geomagnetic storm. The storm's green afterglow was seen over Canada during the early hours of May 27th.

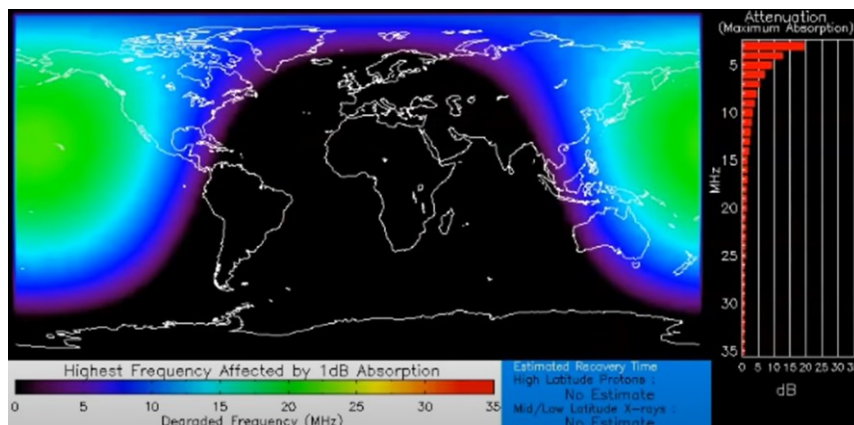


Updated 2021 May 27 15:25:02 UTC NOAA/SWPC Boulder, CO USA

At the time of impact with Earth's upper atmosphere, Queensland, Australia, was hit with a widespread power outage. Power system failures were wide spread.

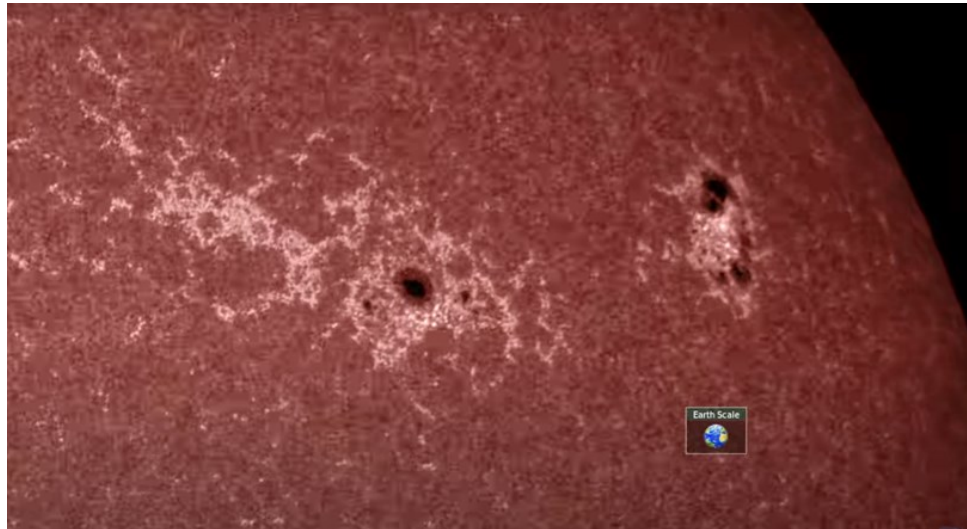
A Queensland power plant explosion caused massive outages affecting almost 500,000 homes from northern New South Wales to Cairns. A government owned power station, CS Energy, confirmed a fire at Callide power station near Biloela shutting down three of the station's operating generators. Ergon Energy, which distributes power outside the southeast, reported outages in Cairns, Townsville, Mackay, Rockhampton, Bundaberg and Gladstone.

Queensland Australia: When the dense CME impacted Earth, numerous reports of power outages came in. Octavia White, of Brisbane, reported a power outage that left 300,000 homes without power. The Brisbane airport was in disarray from the power surge. Numerous others in Queensland reported a fire at a power supply station when the power went down at the same time the CME struck.

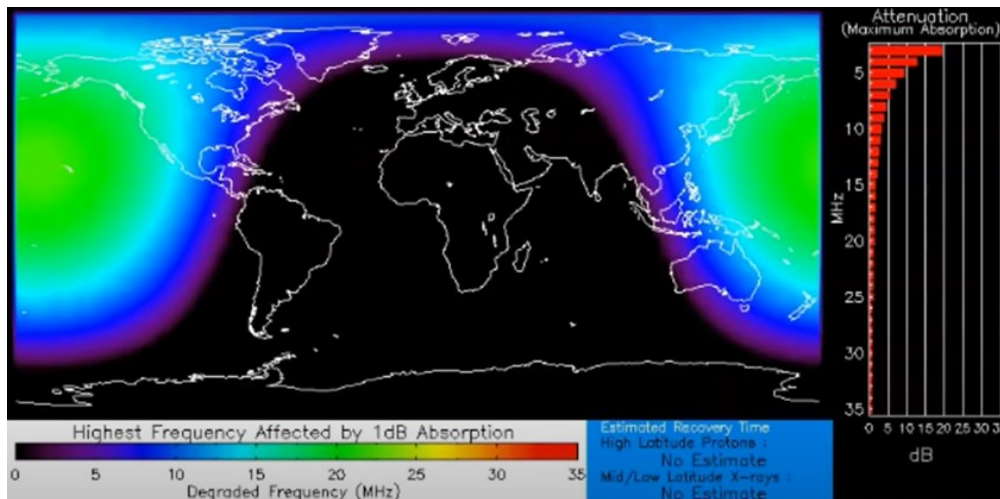


Brian J. , Brisbane, reported an explosion at a nearby power plant that took out two of four units in that 1600MW station during the brown-out.

A coronal mass ejection (CME) struck Earth's magnetic field.



Sunspot AR2824 blew its top on May 28th (2313 UT). It erupted and blew away some of the sun's atmosphere. The C9-class flare shoved aside giant loops of hot plasma. NASA's Solar Dynamics Observatory recorded a shadowy solar tsunami racing across the sun's surface. Plasma rippled out from the blast site, asymmetrically, traveling mainly north and east. Such waves usually herald a coronal mass ejection, but the sun's gravity pulled the plasma back down into the corona.



NOAA reported Type II radio emissions from the plasma wave as it traveled through the sun's atmosphere at speeds faster than 2000 km/s.

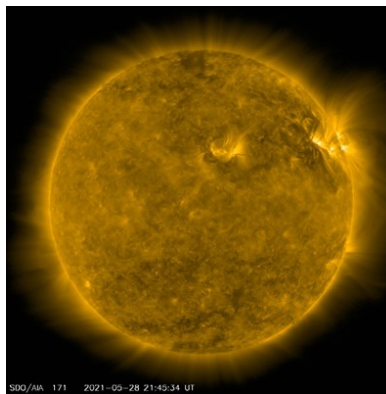


Image Credit: SDO/AIA

June 5th

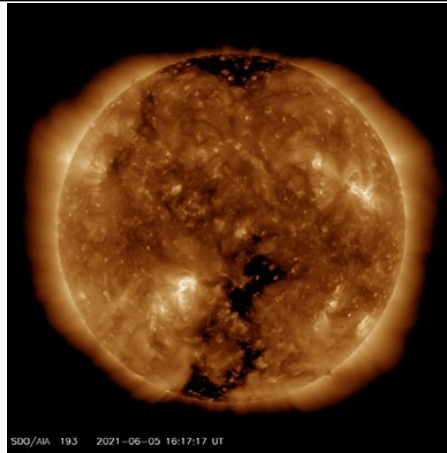


Image Credit: SDO/AIA

AR2827 departed, as filaments were ripping away from the western limb.

AR2829 Rotating into center longitude.

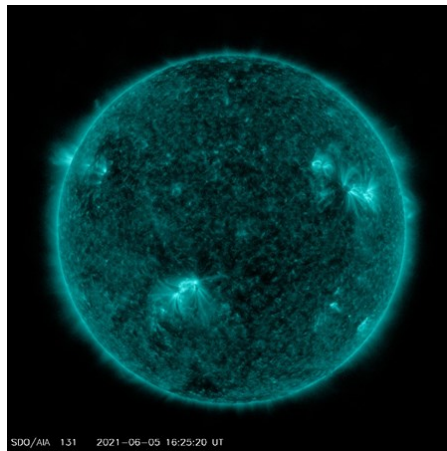


Image Credit: SDO/AIA

Mostly quiet, slight morphing around the southern coronal hole at Earth facing longitudes.

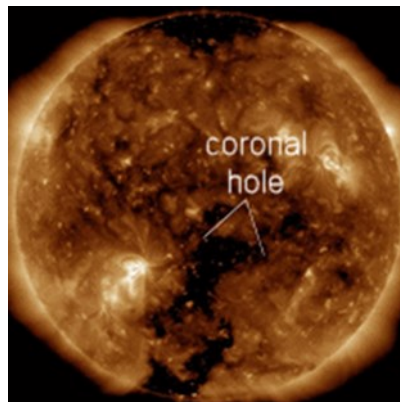


Image Credit: SDO/AIA

A stream of solar wind flowing from this southern coronal hole was expected to reach Earth on June 8th.

June 10th



Departing sunspot AR2831 erupted on June 9th (1159 UT) and hurled a massive plume of plasma into space.

June 15th - Geomagnetic unrest this week. Minor geomagnetic unrest was expected on June 15-16 when a stream of solar wind hit Earth's magnetic field. The gaseous material was flowing from a southern hole in the sun's atmosphere.

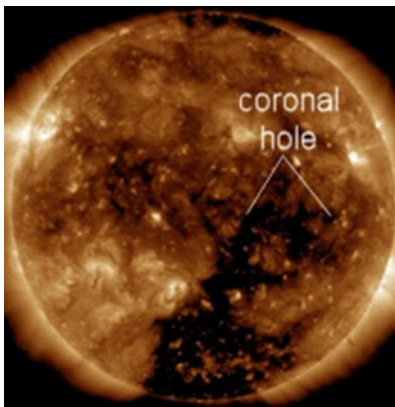


Image Credit: SDO/AIA

Wednesday, June 16th - Earth was inside a stream of solar wind flowing from this southern coronal hole.

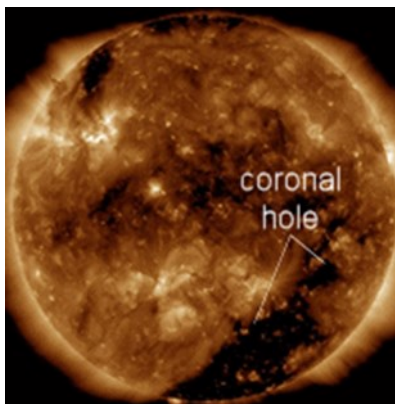
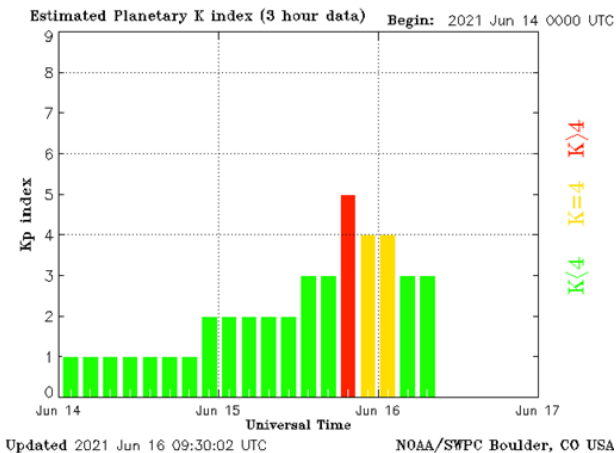


Image Credit: SDO/AIA

A fast-moving (almost 600 km/s) stream of solar wind was buffeting Earth's magnetic field. As a result, isolated G1-class geomagnetic storms were buffeting Earth's upper atmosphere.



Friday, June 18th

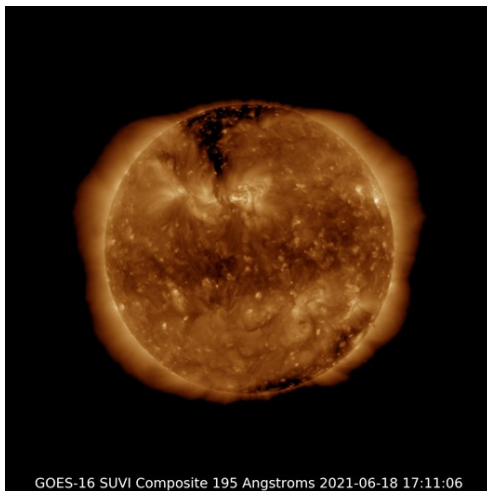


Image Credit: SDO/AIA

Earth was exiting a stream of solar wind flowing from this southern coronal hole that sparked a G1-class geomagnetic storm.

SOLSTICE, June 20th. Seasons are changing. Summer begins in the north; winter begins in the south. With the sun reaching its northernmost point in Earth's sky, one hemisphere will experience the longest day of the year, while the other experiences the longest night.

June 21st - Over the Sun's northern incoming limb, there were multiple filament flares, and eruptions. NASA's STEREO-A spacecraft, was monitoring three ultraviolet hot-spots on the far-side. One was an active sunspot, the source of a far-side CME reported on June 18th. Dark cores were expected to rotation into view over the east limb within ~48 hours.

June 24th

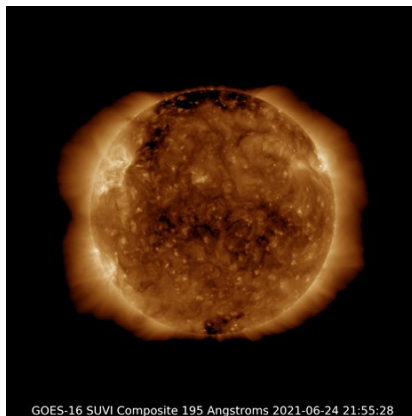
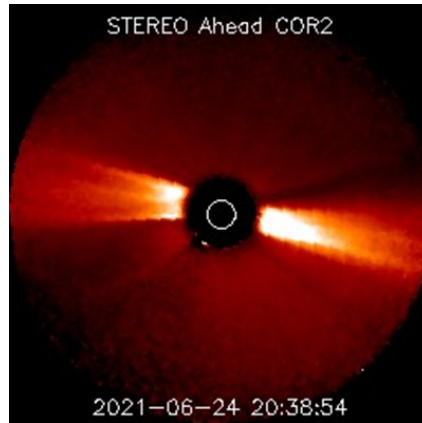


Image Credit: SDO/AIA

There were no significant coronal holes on the Earth-facing side of the Sun at this time.

A strong solar flare produced a couple of C and M-class solar flares that were eruptive and producing coronal mass ejections which had earth-directed components.

Filament eruption occurred - STEREO-A



Compact plasma ejections were wide spread, effecting the surrounding corona. SOHO graphed the eruptions as leaving the sun at 90°. Massive filaments were lifting and destabilizing, collapsing, then sliding down into the corona.

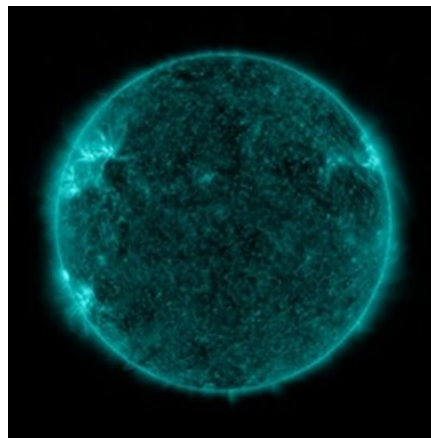
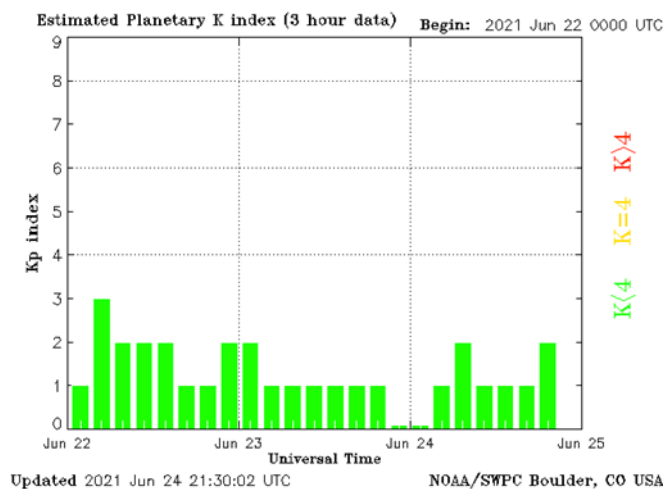


Image Credit: SDO



Geomagnetic Forecast: Issued 2021 Jun 23 2205 UTC. Prepared by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center. NOAA Geomagnetic Activity Observation and Forecast:

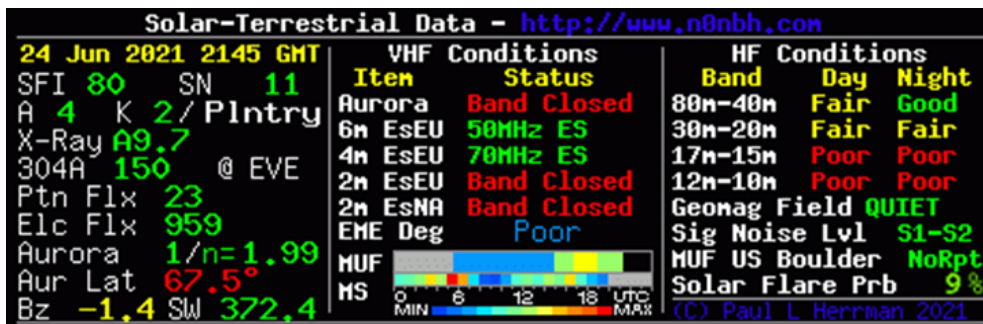
The greatest observed 3 hr Kp over the past 24 hours were 2 (below Scale levels).NOAA

The greatest expected Kp was 2, (below NOAA Scale levels).

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

No radio blackouts were observed over the past 24 hours.

No R1 (Minor) or greater radio blackouts were expected. No significant active region flare activity was forecast.



73,

Fred
AA0JK

DRC's Trading Post

Don't forget you can find **locally-sourced, ham-grown** merchandise at:
<https://www.w0tx.org/trade.htm>

PAST ROUND TABLE PAGES

PROVIDED BY WOODY LINWOOD, W0UI

A page from the April 1958 edition.

continued from page 3

ters. It was capable of receiving DSB, AM and SSB. The results of the tests with this RCVR led them to develop a SSB system for transoceanic tests. These tests from the U.S. to England continued until 1936 when the designs for production SSB units was initiated. During the next 10 years about 50 SSB circuits were established in all parts of the world.

During World War II, SSB did valuable service in providing connections between the U.S. and the armed forces in all parts of the world. Many of these were multichannel teletypewriter systems.

THE AMAZING MASER

YLs may use rubies in their radio receivers instead of using them as jewels. The Navy is pointing at Venus a radio synthetic ruby. It is called a MASER, which means the technical words "micro-wave amplification by stimulated emission of radiation." Radio telescopes already see things which optical telescopes cannot, and it is hoped that the new electronic telescopes will eventually be even a hundred times more sensitive than they are at present. Since males throughout the ages always sought the favors of the goddess Venus with jewels, it is only fitting that the Navy point its first jewel MASER at Venus. Leave it to the Navy to do the right thing in such matters.

-4-

IN THE MAIL BOX

The Dawes County Amateur Radio Club of Chadron, Nebraska will meet June 1st for their annual picnic. We will meet at Chadron State Park, 10 miles south of Chadron on highway 19. Signs will mark the way at the park.

We will have a transmitter at the park tuned at 3850 for anyone wanting to check in on mobile. We are also planning a transmitter hunt and a swap table.

Everyone bring enough food for themselves which will be served family style. Coffee and pop will be served by the club.

Please come rain or shine as arrangements will be made to be indoors if weather is inclement.

EVERYONE WELCOME

OM's-YL's-exYL's-Harmonics

Mrs. Bonnie Davis KNØJGE
Sec'y Dawes County Amateur
Radio Club

ANNUAL DENVER RADIO CLUB

H A M F E S T

July 20, 1958

Time and place to be announced

PLAN TO ATTEND

FUN FOR ALL

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
[East Anglian Film Archive](#)

THE ROUND TABLE ARCHIVE

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

THE ROUND TABLE ARTICLE INDEX

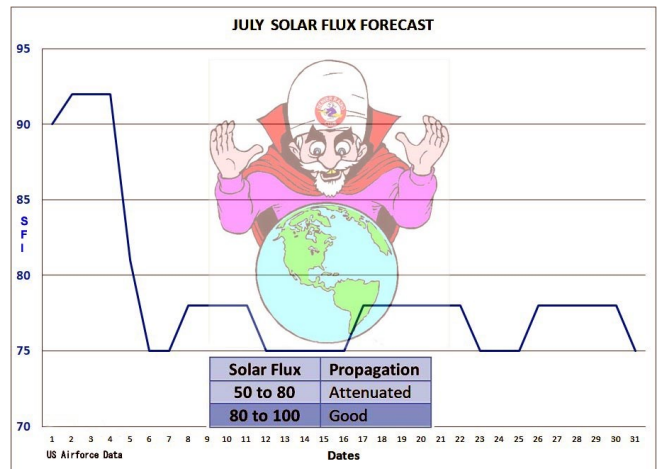
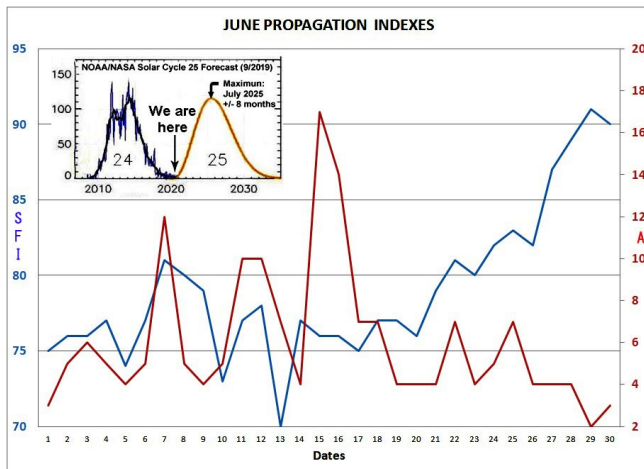
Go to: <http://www.w0tx.org/RoundtableArchive/-RoundTables-Index.pdf>

PAST & FUTURE PROPAGATION CONDITIONS

By Bill Rinker, W6OAV

The charts below show the Solar Flux and "A" indexes for last month and the forecast for this month's Solar Flux index.

Refer to the September 2010 *Round Table* for more complete information on interpreting these charts, which is available at: [http://www.w0tx.org/RoundtableArchive/2010-RoundTables/RT201009\(SEP\).pdf](http://www.w0tx.org/RoundtableArchive/2010-RoundTables/RT201009(SEP).pdf)



UPCOMING EVENTS
HAMFESTS & CONVENTIONS

Event	Date	Location	Sponsor Website
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None

UPCOMING QSO PARTIES

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

State/Province	Start Date	End Date	Sponsor Website	Notes
Missouri	07/31/2021	08/01/2021	Boeing Employees' Amateur Radio Society – St. Louis	
Maryland-DC	08/14/2021	08/15/2021	Anne Arundel Radio Club	
Hawaii	08/28/2021	08/29/2021	Hawaii QSO Party	
Kansas	08/28/2021	08/29/2021	Kansas QSO Party	
Ohio	08/28/2021	08/29/2021	Ohio QSO Party	
Colorado	09/04/2021	09/05/2021	Pikes Peak Radio Amateur Association	
Tennessee	09/05/2021	09/06/2021	Tennessee Contest Group	
Alabama	09/11/2021	09/12/2021	Alabama QSO Party	
Iowa	09/18/2021	09/19/2021	Story County ARC	
New Hampshire	09/18/2021	09/19/2021	Port City Amateur Radio Club	
New Jersey	09/18/2021	09/19/2021	Burlington County Radio Club	
Texas	09/18/2021	09/19/2021	Texas DX Society	
Washington	09/18/2021	09/19/2021	Western Washington DX Club	
Maine	09/25/2021	09/26/2021	Wireless Society of Southern Maine	

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](https://smile.amazon.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. W0TX Room 40931.
70cm	446.7875MHz (-)	BrandMeister Repeater: Slot 1 – Wide Area Traffic, Slot 2 – Local Talk Group 310804

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JULY 2021		<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  Last Quarter	2	3
4 	5	6	7 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	8	9  New Moon	10 IARU HF World Championship - Begins 1200 UTC
11 IARU HF World Championship - Ends 1159 UTC	12	13	14 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	15	16	17  First Quarter
18	19	20	21 DRC Online Meeting Elmer 6 p.m. Meeting 7 p.m.	22	23  Full Moon	24
25	26	27	28 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	29	30	31

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

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Website & YouTube	N0LAJ	Bill Hester	Check Roster	w0tx@w0tx.org

Please Let Us Know

Over the years we occasionally hear from hams who have read the Round Table in other states and countries around the world. We appreciate the comments and we would like to know where you are located. So if you live outside the Front Range or Denver Metro Area and read the newsletter either online, email or hard copy please send a short note via email with your *City, State or City, Country*.

We will publish it at a later date in our new regular feature called Round Table Round World.

To respond to this request send your information to drc.editor@gmail.com.

Subject: I'm located in...

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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