



ROUNDTABLE

The Denver Radio Club Newsletter

Since 1917

100 years of amateur radio in Colorado

July 2017

PRESIDENT'S MESSAGE

BY GERRY VILLHAUER, W0GV

Hello DRC Members,

I hope you are enjoying the great and sometimes too hot summer weather. I know the summer is sure flying by for Cathy and me; so much to do and so little time to get it all done.

Field Day has come and gone for another year. We had a wonderful turn out with many, many visitors and prospective hams coming to check it out. I believe we had many more new and inspiring hams on the air than in previous years. This is a great opportunity to get people, who have never experienced the HF bands or ham radio in general, a chance to get on the air and make actual contacts. It is really fulfilling to see an 8 year old boy's eyes light up when he has made a contact on 20 meters with a station a thousand miles for Colorado. Thanks to Jason (AC0UA) for again coordinating a very successful field day and also thanks to Dave (K0HTX) for assisting Jason with managing the site. And to our chef, Jim (K0TOR) assisted by Katie and Tory Gillespie for the many hours in the The Salvation Army canteen, preparing all the meals and snacks. And to all of you who helped set up the tower, antennas and the equipment, Thank You; we could not have done it without you.

Our June program on Mesh Network for ham radio, presented by Jeremiah (N0KMO) and Brad (K0BJR) was a hit with the attendees. Lots of questions were generated from the floor. I am sure the club looks forward to more information and progress reports as the network grows throughout the area.

Our July meeting and presentation will be on July 19th. The summer time is in the middle of Sporadic E season on the 6 and 10 meter bands. Bill Rinker (W6OAV) will be telling us all about Sporadic E and how you can have fun with this propagation without large antennas or high power. Bill will have a PowerPoint presentation to explain what it is, how you can find it and how to work it, along with a couple demonstrations. Mark your calendar for Wednesday July 19th for this very interesting presentation.

Thanks to all of you who recently joined and made the DRC "Your Club". Please stay active on the air, come to meetings, programs and events. Your name and call will be listed in the body of the Round Table.

73 for now,

Gerry (W0GV)
President

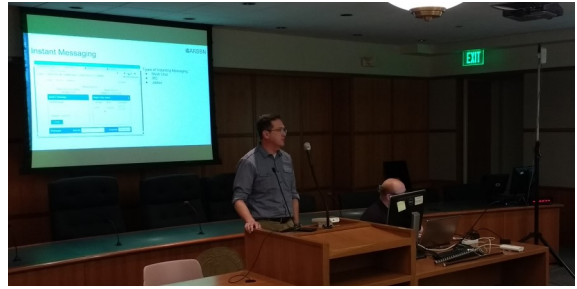


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JUNE MEETING – WHAT'D I MISS?

BY BRENNAN PATE, AD0UZ

The well-attended meeting was a good introduction to mesh networking as applied to ham radio via CARBBN (Colorado Amateur Radio Broadband Network). Jeremiah (N0KMO) and Brad (K0BJR) did a good job of explaining how the network works, the benefits to using the network and some of their plans and other possibilities for the future. Mesh networking can be used to pass data, messaging and voice, and monitor remote sensors among other things, over a network of “nodes” that are setup using simple and low cost equipment. They also briefly touched on the part 15 vs 97 rules and regs. To get more information look over their website at: carbnn.org.



WHO'S NEW IN THE DRC?

BY BOB WILLSON, KC0CZ

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

Carl Keiser	KE0ER
Robert Maupin	KE0NTE
James Record	AD0YO

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 the subjects discussed at the May Technical Committee meeting. The project coordinators' call signs are in red.

DRC/TSA Aurora Site (**WW0LF**)

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

Status: The board will discuss producing a business case for the TSA detailing who the DRC is and what the DRC can do for the TSA. This document can be passed to our various TSA contacts as the TSA changes their organization (which happens often).

Station 4 Remote Power Control (**Board**)

Goal: Investigate purchasing and installing Internet controlled power outlets.

Status: The number of units required for Station 4 and for Centennial Cone has been determined. The board will determine which units to purchase.

General Discussion

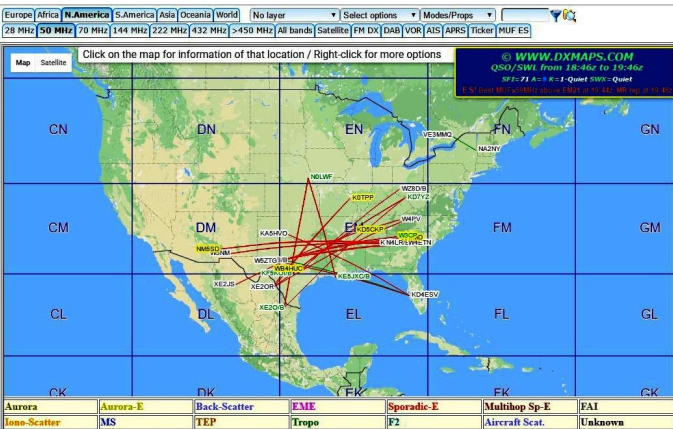
The Tech Committee discussed possible improvements to the various DRC systems. Tech Committee members will consider recommendations for the next Tech Committee meeting.

JULY MEETING PRESENTATION

BY BILL RINKER, W6OAV

Right now we are in the middle of the summer Sporadic E (Es) season on 10 and 6 meters. Es allows VHF signals (28-144 MHz) to propagate over long distances via a reflection from the Es layer. Es doesn't require big antennas, high power or any specific polarization. It is a fun mode with lots of surprises.

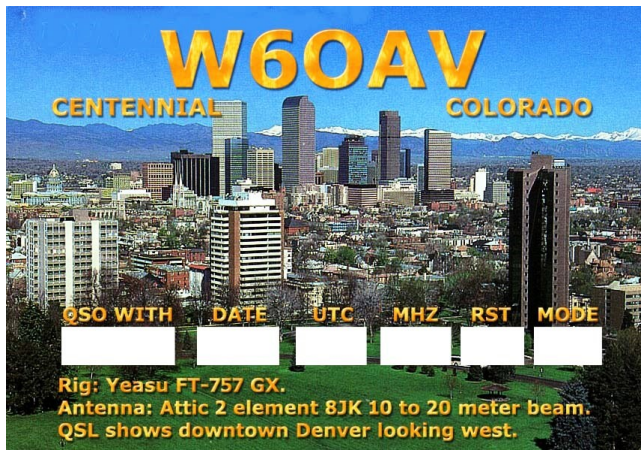
If you are interested in learning about Es, plan to attend the July meeting. A PowerPoint presentation will cover what Es is, how it works, how to find it and how to work it. There will be a couple of demonstrations as well.



CALLING ALL QSLs...

BY BRENNAN PATE, AD0UZ

This month's QSL card was provided by Bill (W6OAV).



This is the last one I have in the queue. So, if you would like to have your QSL card featured in an upcoming edition of the Roundtable please send a copy of it (PDF or JPG, etc.) to drc.editor@gmail.com.

Alternatively, if you have received a unusual or exotic one in the past and would like to share it, then send it on over.

Boy Scouts - DMR AND JOTA

FROM GEORGE WEBER, KA0BSA

KA0BSA is a club call for the Denver Area Council Boy Scouts Amateur Radio Club. We have club stations at the Denver Scout Office just of 6th Avenue in Lakewood, at Peaceful Valley Scout Ranch in Elbert, and soon at Camp Tahose near Nederland. We teach Radio Merit Badge, ham license class, and have a demonstration station in the Colorado Adventure Point at the Denver Scout Office.

One of our major thrusts is getting Scouts to participate in the International *Jamboree on the Air* (JOTA) held the third full weekend in October. We try to participate on as many bands and in as many modes as possible. The guidelines for DMR, a fairly new mode of us, are explained below. DRC's DMR repeaters look like they are well suited as you have repeater frequencies set up for TAC-310 and other US and regional links. We would not want to monopolize the repeater but do wish to seek permission and do hope to have the Scouts (third party) be able to talk around the world using DMR.

If you have questions or need any further information please contact: Sid Hughes – K0SCH and/or George Weber – KA0BSA KA0BSA@gmail.com and/or KA0BSA@arrl.net

===== DMR USAGE for JOTA =====

<http://www.dmr-marc.net>

All wide area talkgroups are permitted for use for JOTA for establishing contacts. After contact is established, stations should utilize as few resources as possible. For international, national, and regional QSO's, stations should move their transmissions to one of the DMR-MARC UA talkgroups or to the DCI TAC-310 talkgroup.

For intrastate contacts, stations may use their area's statewide talkgroup (if applicable). The use of your repeater's local talkgroup (if applicable) is always permitted. A full list of repeaters and their available talkgroups can be found at <http://www.dmr-marc.net/repeaters.html>

SIMPLEX Channels: 441.0000*, 446.5000, 446.0750,

433.4500, 145.7900*, 145.5100. All simplex frequencies operate on time-slot 1 and use color code 1. (*are commonly used as the National DMR Simplex Channels and should be used only as Calling Channels for JOTA. Always listen first to avoid interfering with another QSO.)

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LEARNING NET REPORT

BY FRED HART, AA0JK

Thanks goes out to our net controllers: Larry (K0LAI), Alex (W2PBR), and Steve (KD0WMO).



Topics discussed this past month:

- Portable antennas
- Super antenna backpack
- MFJ 1675T - 1699T Mobile antennas
- Used vs New Transceivers Pros – Cons. eHam.net Product Reviews
- Field-Day 2017
- W0TX Web-Page
- K7AGE Ham Radio Field Day: <https://youtu.be/oOXzSqNd6PY>
- Off -set frequencies settings, Lynaire, K0LPR
- Transceivers memory batteries: Steven, KB0KUC
- Heathkit SB-102 Transceiver: Larry, K0LAI

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. In the event of emergencies such as floods, fires, or other public service, the amateurs 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 Coordinators: Mike Vespoli (KE0HFH) and Brennan Pate (AD0UZ), at emcomm@w0tx.org.

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.

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 / 448.625.

(Note: The third Wednesday of the month is devoted to the DRC club meeting. See the [W0TX web site](#) for additional information.)

73,
AA0JK
Fred

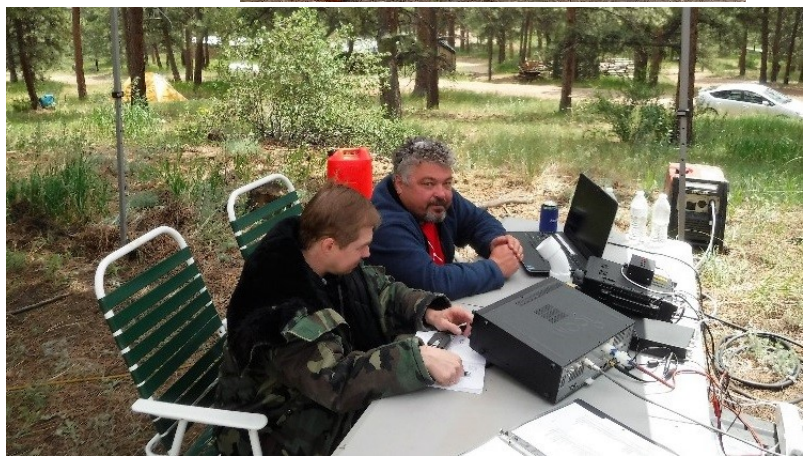
FIELD DAY PHOTOS

NOTE BY EDITOR

PHOTOS PROVIDED BY FRED HART, AA0JK

The following photos from Field Day were provided by Fred (AA0JK). If you have photos and a particular story about field day you'd like to have published, email them to drc.editor@gmail.com. Look for more reporting from Field Day Chairman, Jason Smallwood (AC0UA) in next month's Roundtable.



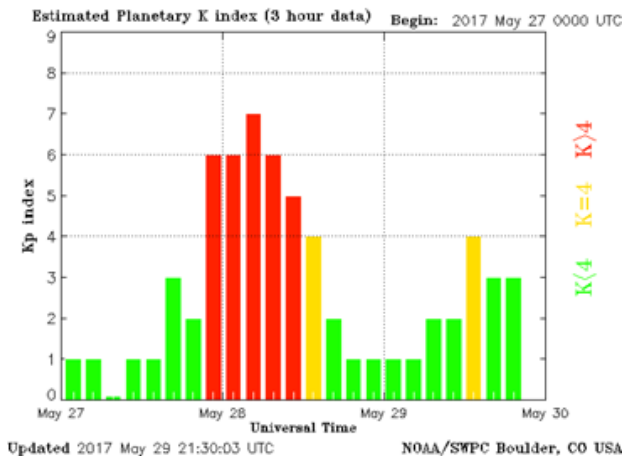


SOLAR UPDATE

PROVIDED BY Fred Hart, AA0JK

Solar Geophysical Activity Report “ June 2017

The last days of May saw sudden Geomagnetic Impulse activity.



May 28th - CME Passage / Bz South / G3 Storm

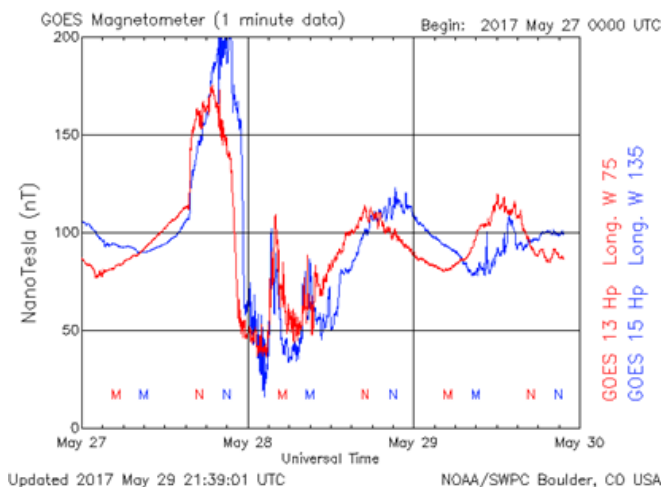
The Bz component of the interplanetary magnetic field (IMF) continued to point sharply south for several hours following an initially weak CME passage on Saturday, a condition known to enhance geomagnetic activity. Strong (G3) storming was observed at higher latitudes early Sunday morning.

ALERT:

Geomagnetic K-index of 7
 Threshold Reached: 2017 May 28th 0419 UTC
 Synoptic Period: 0300-0600 UTC
 Arrival Warning: Yes
 NOAA Scale: G3 – Strong

SUMMARY: Geomagnetic Sudden Impulse

Observed: 2017 May 27th 1536 UTC



Saturday, May 27th

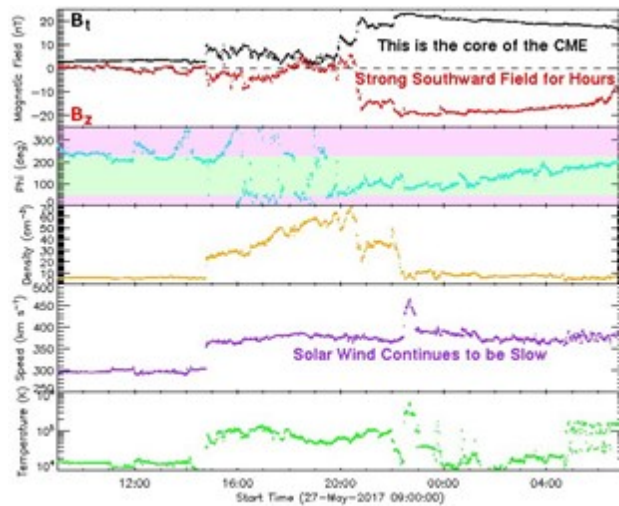
THE CME ARRIVED: Arriving almost 24 hours later than expected, a CME sideswiped Earth's magnetic field on May 27th at approximately 1500 UT. The relatively weak impact did not caused any notable geomagnetic activity.

Sunday, May 28th

CME HITS: A CME hit Earth's magnetic field on May 27th . At first, for several hours, the seemingly weak impact barely disturbed our planet's magnetic environment. Then the storms began. As Earth passed through the CME's wake, energetic particles poured through a crack in Earth's magnetosphere, sparking strong G3-class geomagnetic storms.

(Continued on page 8)

The storms subsided. Earth was exiting the CME's wake, and our planet's magnetic field was quieting. Nevertheless, there was a lingering chance of G1-class storms on May 28th.



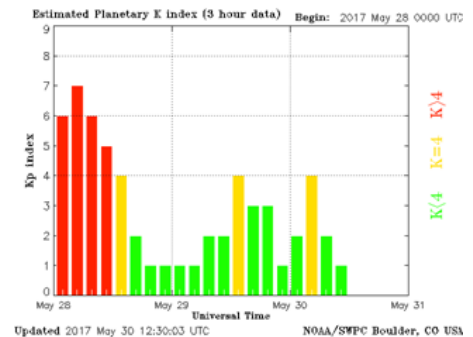
Monday, May. 29th - The storms were subsiding. Earth was exiting a CME's wake, and our planet's magnetic field was quieting. NOAA forecasters were saying that there was no more than a 15% chance of G1-class geomagnetic storms on May 29th.

Direct hit from solar eruption: <https://youtu.be/mITZTcplsQU>, TamithaSkov

Strong (G3) geomagnetic storm conditions reported on 05/28/2017

NOAA's Space Weather Prediction Center (SWPC) said strong (G3) geomagnetic storm conditions occurred overnight. The SWPC issued a G3 alert at 0419 UTC on May 28, due to activity associated with a coronal mass ejection (CME) on May 23rd .

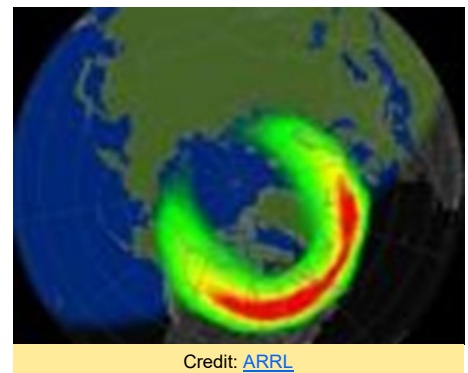
"Although the solar wind speed is relatively slow, the embedded magnetic field had a prolonged period of southward Bz (a magnetic field component) that was causing the geomagnetic activity," the SWPC alert said. Moderate (G2) and strong (G3) storm warnings were valid until 0900 UTC on May 28th , and the forecast called for only a slight chance of minor storming for the remainder of May 28th.



A G3 storm can affect the electric power grid, cause intermittent HF radio conditions and affect satellite navigation as well as low-frequency navigation systems. In such conditions, increased drag on low-Earth orbit satellites can occur.

May. 31st

AN EXPLOSION ON THE SUN: May 30th , a dark filament of magnetism lifted off the surface of the sun and blasted through the sun's atmosphere: movie.



Credit: ARRL

Continued from page 8)

June 2017



Credit: spaceweather.com

Week One:

Jun. 1st - ACTIVE SUNSPOT: A new sunspot was emerging over the sun's eastern limb, and it was crackling with C-class solar flares. NASA's Solar Dynamics Observatory caught the active region hurling a plume and ball of plasma high above the sun's surface during the early hours of June 1st:

Numbered AR2661, this new sunspot was still rotating into view, so its full size and potential for stronger flares were not known.

Solar Storm Forecast 06-01-2017: <https://youtu.be/WjzyWDhTHIU>, Tamitha Skov

Jun. 2nd - AN ACTIVE SUNSPOT EMERGES: On June 1st, a small but surprisingly active sunspot rotated over the sun's eastern limb. It announced itself with a fusillade of C-class solar flares. One of them hurled this plume and ball of plasma high above the sun's surface:

Numbered AR2661, this new sunspot was still rotating into view, so its full size and potential for stronger flares was not yet known. This much was certain: It had already propelled a series of coronal mass ejections (CME) into space. A movie from SOHO shows them billowing away from the sun's eastern limb. These were the kind of clouds that can spark strong geomagnetic storms. None of the explosions were targeting Earth, although this had the potential to change in the days ahead as AR2661 rotates toward our planet.



Credit: spaceweather.com

June 4th - ACTIVE SUNSPOT: Sunspot AR2661 had more than doubled in size since it initially appeared on June 1st and it was still crackling with C-class solar flares. There was a maelstrom around the sunspot's primary dark core.

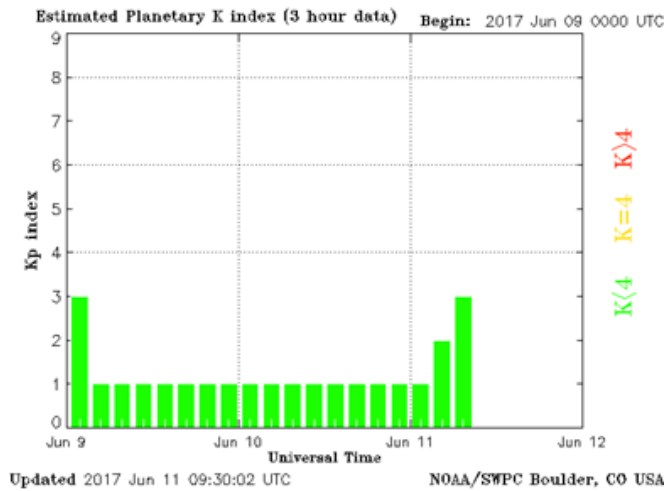
Friday, June 9th - ALL QUIET: With the rapid decay of sunspot AR2661, solar flare activity had ceased and the sun's X-ray output was flat-lining. The sunspot was fading so rapidly, in fact, that the disk of the sun was expected to potentially become blank by the end of the day. NOAA forecasters said the chance of a strong solar flare on June 9th was no more than 1%.

Saturday, June 10th - BLANK SUN HERALDS SOLAR MINIMUM: Sunspot AR2661 had dissolved, leaving the face of the sun blank. This was the 39th day in 2017 (so far) that the sun has been without spots, continuing a sharp decline in the solar cycle. Forecasters expect Solar Minimum to arrive in 2019-2020.

Big events this week were multiple sporadic-E linkups on six meters.

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Field Day weekend, June 24th and 25th was showing a changed prediction, with solar flux at 78, and planetary A index of 5 on all three days. This was an improvement from prior week's forecast in ARLP022 which projected a higher geomagnetic (A index) forecast and lower solar flux.

June 16th - Geomagnetic Storm Watch

A high speed solar wind stream flowing from a pair of relatively small coronal holes was expected to reach Earth within 24 hours. A minor (G1) geomagnetic storm watch was in effect.

A fast-moving stream of solar wind was expected to buffet Earth's magnetic field.

Sunspot AR2663 had a 'beta-gamma' magnetic field that harbored energy for M-class solar flares. (Credit: SDO/HMI)

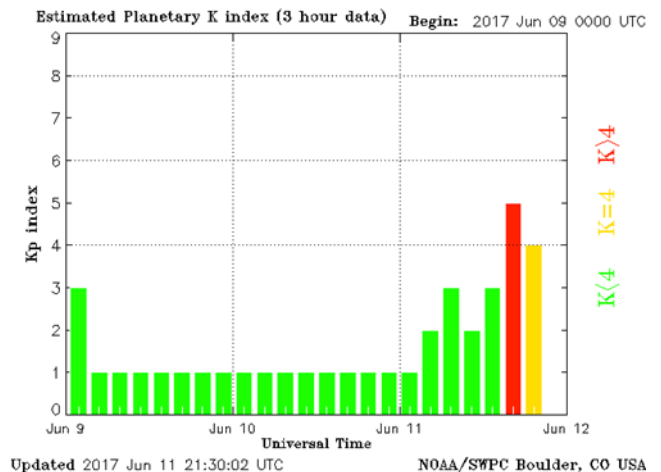
Week Two:

Sunday, June 11th - BLANK SUN HERALDS SOLAR MINIMUM: Sunspot AR2661 had dissolved, leaving the face of the sun blank. This was the 39th day in 2017 (so far) that the sun has been without spots, continuing a sharp decline in the solar cycle.

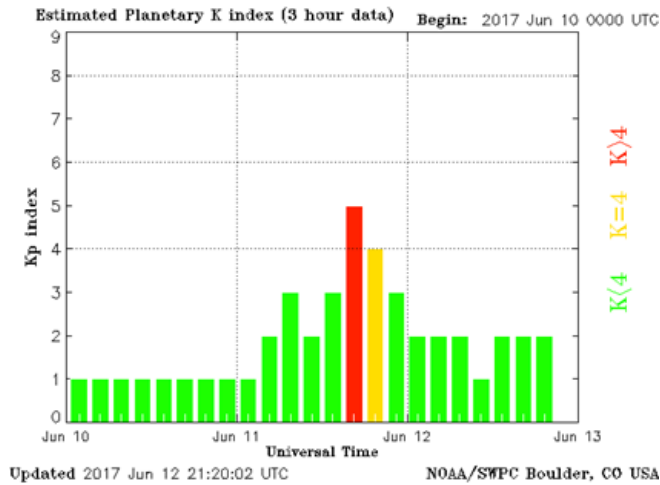
CORONAL MASS EJECTIONS: Despite the lack of sunspots, the sun is active. SOHO (the Solar and Heliospheric Observatory) observed two coronal mass ejections (CMEs) on June 11th, a faint one on the sun's western limb and a bright one on the sun's eastern limb.

Monday, June 12th - WEEKEND CMEs Not Expected to HIT EARTH: On June 11th, the Solar and Heliospheric Observatory observed two CMEs racing away from the sun. Neither were expected to hit Earth. One sail just west of the sun-Earth line, while the other appeared to have been a farside explosion. No geomagnetic storms would result from these events.

A coronal hole, remnant of a much larger hole that lashed Earth with solar wind last month, would mitigate as it broke up and contracted. Minor solar wind effects were expected on June 13th.



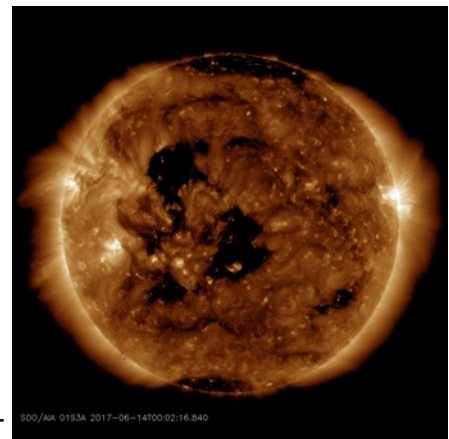
June 13th



An elevated solar wind stream above 500km/s, continued to move past our planet and was not expected to disrupt our geomagnetic field.

June 14th - Solar wind flowing from the indicated coronal hole expected to reach Earth on June 16th . Credit: NASA/SDO.

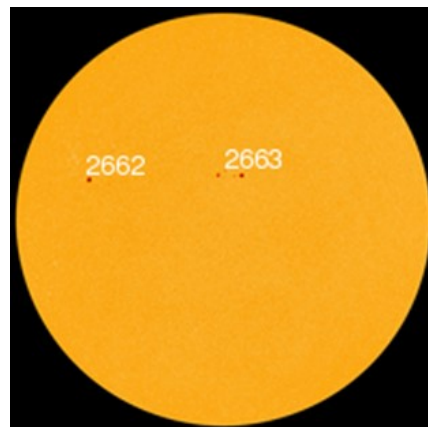
A HOLE IN THE SUN'S ATMOSPHERE: A large hole opened in the sun's atmosphere and it was turning toward Earth. NASA's Solar Dynamics Observatory was monitoring the structure, shown here in an extreme ultraviolet image taken on June 13th .



This is a coronal hole (CH) -- a region where the sun's magnetic field peels back and allows solar wind to escape. A fast-moving stream of solar wind from this coronal hole was expected to arrive on June 16th, sparking G1-class geomagnetic storms.

Forecasters noted that this stream was unusually fast with wind speeds as high as 700 km/s. Moreover, it was threaded with "negative polarity" (south-pointing) magnetic fields. Such fields do a good job connecting to Earth's magnetosphere and energizing geomagnetic storms

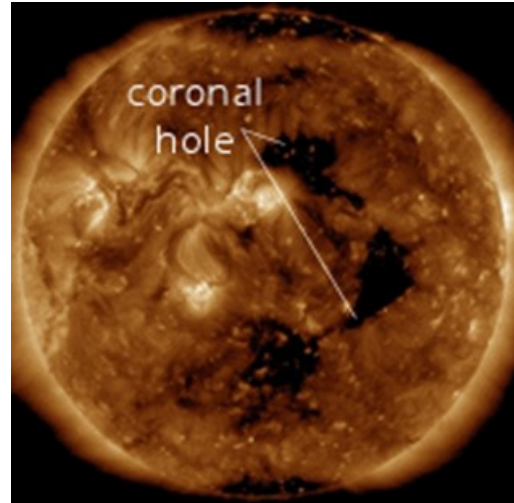
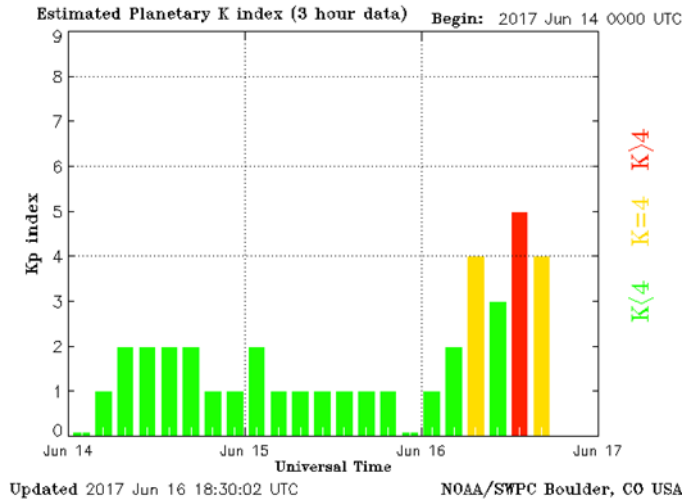
June 16th - New sunspot AR2663 had a 'beta-gamma' magnetic field that harbored enough energy to form a M-class solar flares. Credit: SDO/HMI



(Continued on page 12)

GEOMAGNETIC STORM WATCH: NOAA forecasters said there was a 20% chance of G1-class geomagnetic storms, June 16th, when a fast-moving stream of solar wind was expected to buffet Earth's magnetic field. The gaseous stream was flowing from a large hole in the sun's atmosphere.

Coronal Hole stream went geoeffective. The minor (G1) geomagnetic storm threshold was reached at 14:58 UTC (June 16th).



Solar wind flowing from the indicated coronal hole would reach Earth on June 16th. Credit: NASA/SDO.

Forecasters noted that this stream was unusually fast with wind speeds as high as 700 km/s. Moreover, it was threaded with "negative polarity" (south-pointing) magnetic fields. Such fields do a good job connecting to Earth's magnetosphere and energizing geomagnetic storms.

Dr. Tamitha Skov: <https://youtu.be/z795uEjCxYI> and <https://youtu.be/PYC6hzifWu0>

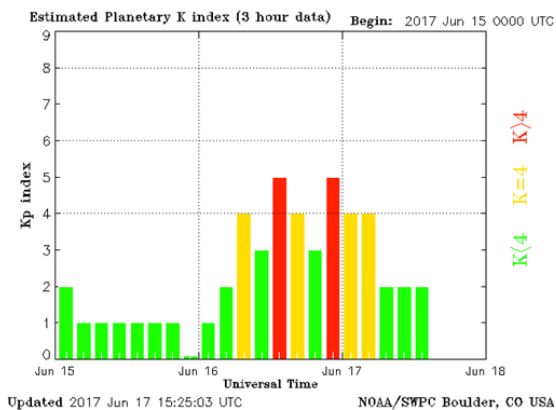
More Fast Wind Brings Chance for Aurora: Solar Storm Forecast 06-15-17

Six Meter sporadic E's opened from KS to Caribbean June 12th.

Remarkable JT65 contacts spotted. HH2AA around 2300Z.

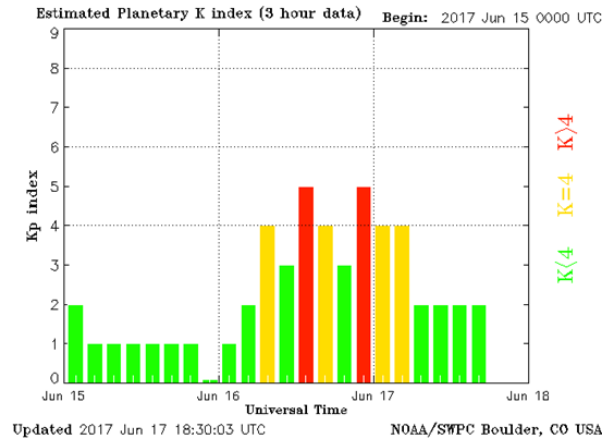
9K2GS, VK4MA, VK8MS, E51WL, and SV9CVY to North America on June 11th and 13th.

Huge Coronal Hole Turns Toward Earth / High Speed Solar Wind Stream above 700 km/s: <https://youtu.be/eZgkulapGrs>



(Continued on page 13)

Saturday, June 17th - ENTERING SOLAR WIND STREAM: Earth was entering a stream of high-speed solar wind flowing from a hole in the sun's atmosphere. This was causing intermittent G1-class geomagnetic storms around the poles.



How Space Weather is Predicted and What Effects it can have on Earth, Robert Steenburgh: <https://youtu.be/ttVjbB5WVi4?list=PLo2YDpGbMTNCWrXeT0T2shLv0Rn8RbvWQ>

Week Three

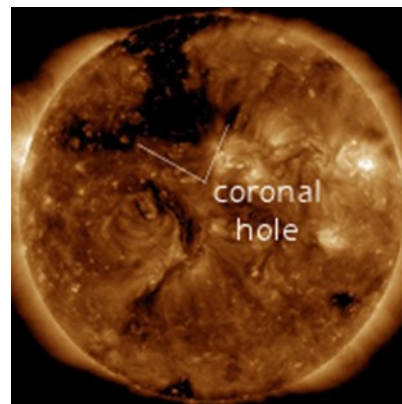
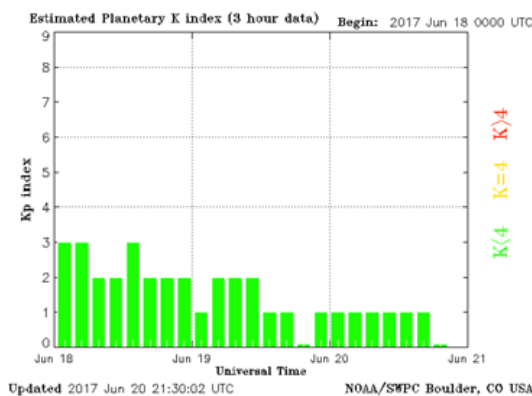
Field Day weekend, June 24th and 25th showed a changed prediction for June 23 to 25 with a solar flux at 78, and planetary A index of 5 on all three days. This was an improvement from the previous week’s forecast in ARL-P022 which projected a higher geomagnetic (A index) forecast and lower solar flux.

Band conditions were:
 HF Band Day/Night:
 80m-40m Good/Good
 30m-20m Fair/Fair
 17m-15m Poor/Poor
 12m-10m Poor/Poor

Solar
 SFI: 74
 A: 5
 K: 1
 Sunspots: 26

Solar Wind: 343.4
 MUF: 15.48

June 20th - Sunspots posed no threat for strong solar flares. Credit: SDO/HMI



Solar wind flowing from the indicated coronal hole was expected to brush against Earth's magnetic field, June 23rd . Credit: NASA/SDO.

Wednesday, June 21st

SFI: 73
 A: 3
 K: 1
 Sunspots: 34
 MUF 8.05

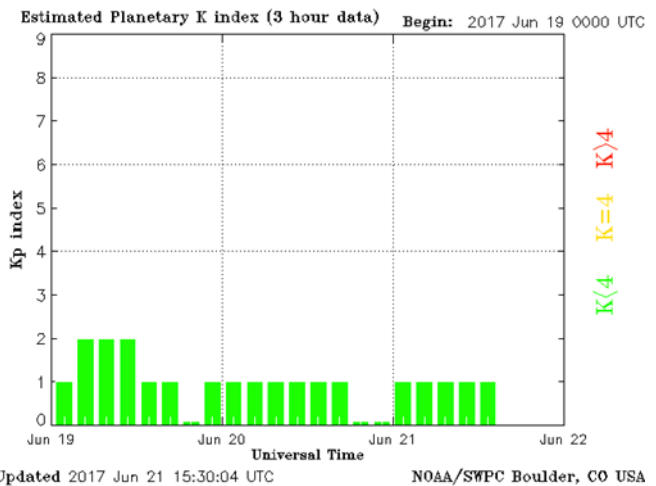
Band Conditions: HF Band Day/Night
 80m-40m Fair/Good
 30m-20m Fair/Fair
 17m-15m Poor/Poor
 12m-10m Poor/Poor
 Xray-A6.4
 09:00Z / 03:00LCL MDT

CO-ROTATING INTERACTION REGION: NOAA forecasters said that a co-rotating interaction region (CIR) might brush against Earth's magnetic field on June 22nd or 23rd . CIRs are transition zones between slow- and fast-moving streams of solar wind. They contain enhanced magnetic fields and plasma density gradients that sometimes spark geomagnetic storms when they reach Earth. Chance of storms, 20%.

June 24th and 25th - Field-Day Weekend:

Band Conditions

Solar SFI: 72
 A: 9
 K: 2
 Sunspots: 28



Week Four

June 28th - FIRST QUIET, THEN UNREST: Geomagnetic activity was expected to be low for the following two days (June 27th -28th) as Earth exited a stream of solar wind. On the third day (June 29th), our planet's magnetic field was expected to become unsettled again when a new stream of solar wind arrived Sunspot AR2664 was growing. As the sunspot had grown, it was also developing an unstable beta-gamma magnetic field that harbored energy for M-class solar flares. Any such flare would be Earth-directed as the sunspot was directly facing our planet.

Forecast...

Solar activity was expected to be very low with a slight chance for C-class flares.

73,

AAØJK
 Fred

LOOKING BACK AT THE DRC, PROVIDED BY WOODY LINWOOD (W0UI)

Roundtable October 1960 - Several Interesting Articles

Readin' the Mail

My tutor used to tell me that there are few perfect home brew rigs. This set me to thinking about gizmos and gadgets, doo-funnies and various obfuscations of that ilk. I've been told that a gizmo is a gadget with moving parts, and a gadget is a gizmo the parts of which, if any, remain stationary on whatever duflichit it is attached to. I can readily see that a R. E. pump, for instance, would thus be a gizmo. Or is that what a widgit is?

A doo-funny doesn't necessarily do anything. It can be a doodad that moves, or a thingamajig that doesn't, or viceversatile!

Same way with a thingumbob. It's undoubtedly a thing, but it may or may not bob. It depends on what kind of dinwfod it's on.

Maybe someone somewhere has written a whatsis that explains the whys and wherefores of all these dinguses. If you see one, let me know; I'd like to have it for my, uh, whatchamacallit!

A A A A A AH Side band rig

Ø—Ø—Ø

RESONANT FREQUENCY

In case you've always wondered, three scientists have now calculated the theoretical resonant frequency of the earth.

Prof. Chaim Leib Pekeris, Dr. Ziborah Alterman, and Hand Jarosch say that the first frequency of the earth is one cycle every 53.4 minutes. The first overtone is 35.6 minutes.

The calculation was made from readings of seismographic measurements. The theory was checked during the Chilean earthquake and several seismographic laboratories agreed that the figures seemed to be correct.

Talk about VLF!

Ø—Ø—Ø

Did U Know . . .

That Denverite George Sahl heads the new Denver office of G. E. for semi-conductors.

—Ø—

That The Round Table would like an article on local MARS activities. Who will come forth with the copy?

—Ø—

This sign appeared on the wall of an electrical contractors shop, "WE FIX YOUR LIGHTS BY REMOVING YOUR SHORTS."

QSLs

JOHN COX - PRINTER

WEst 4-4739



Novice Net

Phil Bright, KNØZNV is drumming up a Novice C.W. Net under the auspices of the Denver Area AREC.

If you would like to get in on some CW net procedures, learning the QN signals etc., give Phil a ring at YUkon 5-4686 or look for him on 3739 kc. each evening and join in the fun.

Ø—Ø—Ø

TRANSMITTER HUNTERS

By Bill, WØGVT

The following will give you an idea of the new rules that are being incorporated on transmitter hunts. There is a trophy now available for the person that wins the first ten hunts. (They don't need to be consecutive in order). For the other hunters, there will be certificates for all, listing the number of wins they have had in the same period as the above winner. Even one for the person who never wins but shows good sportsmanship at all times.

Along with this there will be a credit of two wins for any person hiding it and "hanging-up" all the other hunters. This should help those who frequently have to hide, plus having all looking for top spots to hide.

The list of the present winners would include: Chic, WØSIN two wins; Russ, WØEXR one win; Roy, KØOVQ one win; Tom, KØCTM one win; Howard, KØHPF one win and Jim, KØKZH one win. If you have not started to give these fellows competition, come on out. If any help is needed on getting set on loops and etc., call any of the regular hunters. Enough for now. See you at the next hunt.

Ø—Ø—Ø

"Buy-Sell-Swap" ads are available free to members of the Denver Radio Club at the rate of two ads per membership year. More than two ads per year or ads to non-members will be charged at the rate of \$3.50 per ad of reasonable length.

Words are from the Technician license manual. The solution for the puzzle is on the next page.

H R U E T A M A L L A C M
 E E I M P E D A N C E L E
 S C A T T E R B R I R I A
 D E V I A T I O N A E G S
 N A S E D T A R D L D H U
 A U A E I I B I E N N T R
 C R N O S N O C T O U N E
 S O E I T G T S H I O I O
 T R E R R R C M R I R N O
 S A A A I A A R I O G G P
 A L M C C I N O M R A H E
 F C A U T A A A C O F B P
 M L O A S A O M W O D K D

Word List:

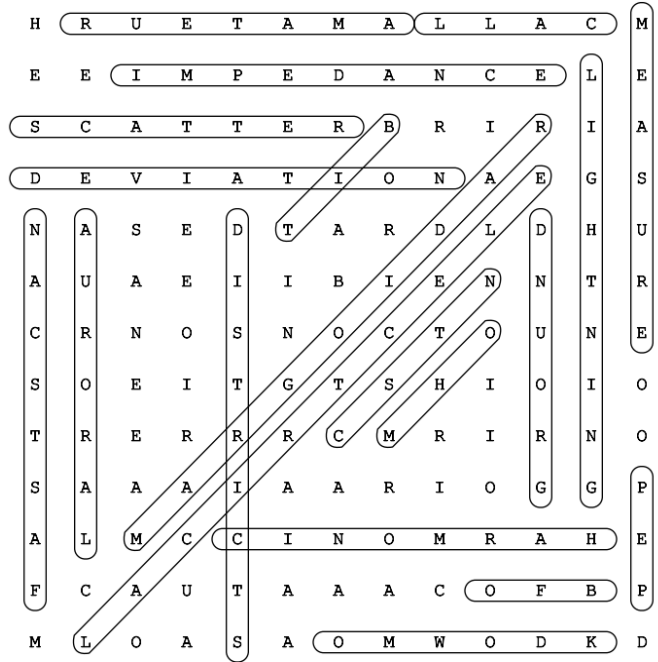
AMATEUR	AURORAL	BFO	BIT
CALL	DISTRICTS	DEVIATION	ELECTRICAL
FASTSCAN	GROUND	HARMONIC	IMPEDANCE
KDOWNMO	LIGHTNING	MEASURE	NTSC
OHM	PEP	RADIOGRAM	SCATTER

FACT OF THE DAY

Temperature vs. Reliability

Electronic equipment life is directly related to operating temperature according to the Arrhenius function which predicts that each 18 degree F (10 degree C) increase in operating temperature reduces mean electronic component operating life by 50 percent. Conversely, each 18 degree F (10 degree C) decrease in operating temperature increases mean electronic component life by 100 percent. It is possible to decrease the inside case temperature of many electronic products that much by simply adding a fan or blower, especially if they are not already forced-air cooled. Fans and blowers suitable for use in many types of equipment have become very inexpensive (\$5 or so from wholesale suppliers) in recent years, because of their widespread use in computers. Where \$5 may double the life of \$1000 radio, what are you waiting for? Even if a suitable blower will cost \$20, where can you find a better investment?

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HAM SITE OF THE MONTH
[Colorado Connection Repeaters](#)

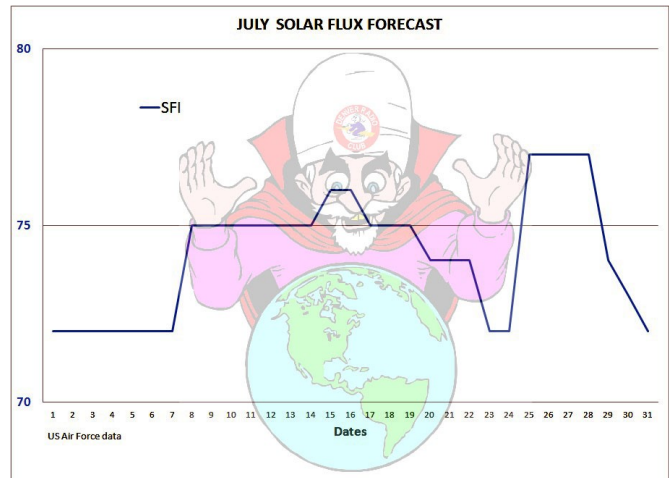
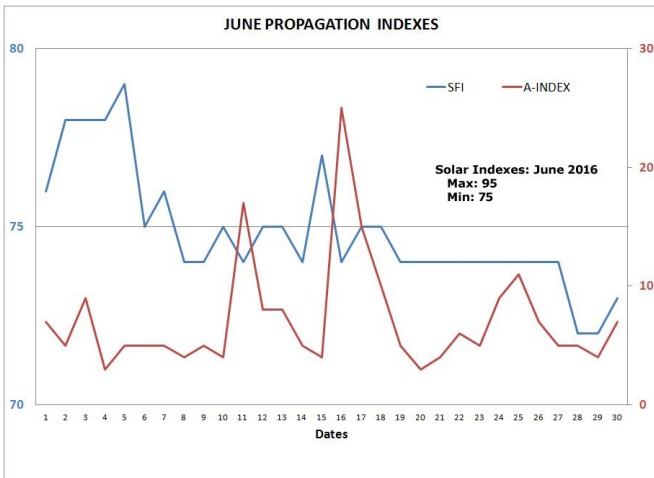
THE ROUNDTABLE ARCHIVE
 Go to: <http://www.w0tx.org/roundtables.htm>
THE ROUNDTABLE ARTICLE INDEX
 Go to: <http://www.w0tx.org/RoundtableArchive/-RoundTables-Index.pdf>

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. Issues of the *RoundTable* are available at [http://www.w0tx.org/RoundtableArchive/2010-RoundTables/RT201009\(SEP\).pdf](http://www.w0tx.org/RoundtableArchive/2010-RoundTables/RT201009(SEP).pdf)



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UPCOMING EVENTS
HAMFESTS & CONVENTIONS

Event	Date	Location	Sponsor Website
PPRAA Ham Radio Megafest	07/08/17	Lewis Palmer High School	PPRAA

UPCOMING ARRL CONTESTS & EVENTS [ARRL CONTEST CALENDAR](#)

Contest	Start Date	Start Time	End Date	Stop Time	Notes
IARU HF Championship	07/08/17	1200 UTC	07/09/17	1200 UTC	160, 80, 40, 20, 15 & 10m
222 MHz & Up Distance	08/05/17	1800 UTC	08/06/17	1800 UTC	New contest
10 GHz & Up - Round 1	08/19/17	6:00 AM local	08/20/17	Midnight local	

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	08/12/2017	08/13/2017	Anne Arundel Radio Club	
Ohio	08/26/2017	08/27/2017	Ohio QSO Party	
Hawaii	08/26/2017	08/28/2017	Hawaii QSO Party	
Kansas	08/26/2017	08/27/2017	Kansas QSO Party	
Colorado	09/02/2017	09/03/2017	Pikes Peak Radio Amateur Association	
Tennessee	09/03/2017	09/04/2017	Tennessee QSO Party	2016 date
New Hampshire	09/16/2017	09/17/2017	Port City Amateur Radio Club	2016 date

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	2 meter / 20 meter gateway. Useable by Technicians on 2 meters. See January 2015 RT.
2m	145.490MHz (-) 100Hz PL	Linked to the 70cm / 448.625MHz machine.
2m	147.330MHz (+) 100Hz PL	Local Area, Members Auto-Patch. 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 the 2m - 145.490MHz machine.
70cm	449.350MHz (-) 100Hz PL	Wide area coverage with Echolink Node # 4140.
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



HAM RADIO OUTLET
WORLDWIDE DISTRIBUTION

HRO 12 STORE BUYING POWER WORKS FOR YOU!!






www.hamradio.com

8400 E. Iliff Ave #9, Denver, CO 80231

303-745-7373 800-444-9476

24 HOUR FAX 303-745-7394

e-mail: denver@hamradio.com

JULY 2017		<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	4 	5 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	6	7	8 IARU HF Contest - Begins 1200 UTC
9 IARU HF Contest - Ends 1200 UTC  Full Moon	10	11	12 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	13	14	15
16  Last Quarter	17	18	19 DRC Meeting Elmer 6 PM General 7 PM	20	21	22
23 New Moon  First Quarter  30	24 31	25	26 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	27	28	29

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Web Master	N0LAJ	Bill Hester	Check Roster	Check Roster

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 20th of the Month. ~ Editor

Sunday August 20th - Jefferson County Fairgrounds **DENVER HAMFEST**



Denver Radio Club, WØTX

2017

Since 1917

DEALERS FLEA MARKET PRIZES

More Tables & Less Crowding

FORUMS FCC EXAMS

FOOD INDOORS

Admission: \$6 (Children under 13 free w/adult)

Tables: Advance Purchase: \$12 (Paid by Aug 18) At the Door \$16

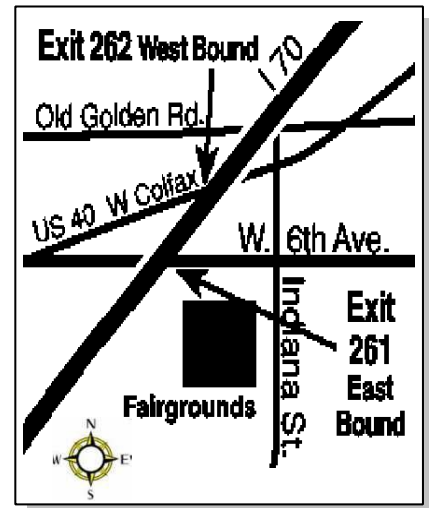
Hourly Door Prizes - Main Drawing at Noon
(Must be present to win)

Doors Open: 8:30 AM - 1:00 PM

License Testing/VE Exams at 10 AM (Vendor Set-Up Starts at 7:30 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.WØTX.ORG

15200 West 6th Avenue Golden, CO

For more info visit our website or contact:

Jason Smallwood, ACØUA, 303-429-2536 E-Mail: drctest@wøtx.org

Advance Table Reservation Form

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

Payment is required with reservation and must be received by August 18, 2017 to obtain the \$12 per table advance registration price

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

Save the upper portion of this flyer for your records

Name: _____ Call: _____

Org: _____ Phone: _____ Email: _____

of Tables _____ @ \$12.00 each = _____ # of Vendor

Admissions _____ @ \$6.00 each = _____ *Denver Radio Club* **DENVER HAMFEST**

August 20th 2017

AC Power: __yes __no Total Enclosed : _____

Special Requests: _____

Please mail all reservations to (New Address): Denver Radio Club, 7780 Bradburn Blvd., Westminster CO 80030-4526