



ROUNDTABLE

The Denver Radio Club Newsletter

Since 1917

March 2018

PRESIDENT'S MESSAGE

BY GERRY VILLHAUER, W0GV

Hello DRC Members,

Finally it looks like spring is around the corner. Although March is sometimes our most snowy month, I always feel when March 1st rolls around, winter is coming to an end, even though we may get big snow storms, the temperatures are not so bone chilling. Just my way of making spring seem a little closer.

Our new Yaesu Fusion repeater has arrived and is in place and operating very well from all reports I have received. We plan to have the WIRES-X configured and operating very soon. I will announce that on the Sunday night net when it is completed. We are planning to have a program on the Fusion and WIRES systems in the future to give us all a better understanding of the capabilities of this system.

As you probably have heard by now, Bill Rinker (W6OAV) has been very ill and hospitalized after a surgery that was supposed to be fairly minor. Bill has had several setbacks and is now very slowly recovering. Bill and his wife want to thank all the members for their cards and good thoughts and prayers for his recovery. If you would like to send a card, please send to Bill's home address in the club directory, please no visitors at this time. Bill does so many things for the club in the way of arranging for our programs, articles in the Round Table, keeping our equipment inventory and many other tasks. He is really missed and we all look forward to him returning to active status.

Thanks to George Palecek (AB0YM) for a very interesting program on VHF contest roving. George had a very good presentation with pictures and his experiences. His humorous way of presenting made it very interesting and informative. Thanks George, a job well done for sure!

Our March program will be a double presentation on similar subjects. John Movius (KD0SYE) was on St. Martin's Island during hurricane Irma. He will be sharing his stories and experiences along with pictures of this devastating hurricane where communications and infrastructure were destroyed. Along with that, we will have Robert White (K0SRW) showing his DX antennas and Go Packs. Robert will be showing us the improvements he has made to his Go Packs since the last time he showed them. Together you will be informed and better understand how to be prepared for natural disasters. Mark March 21st on your calendars so you don't miss the show.

Another date to mark on your calendar is August 26th for the DRC Hamfest, aka "The Big One"! We were forced to move to an alternate date this year due to a Jeffco Fairgrounds scheduling issue. You can make your table reservation now. We will have flyers and table registration forms at the meetings OR go to the DRC website W0TX.ORG, print off a form and mail your check to the address on the form. Remember, if you need electrical power, those tables go on a first come first served basis. Get your reservations in early!

Another note for your calendar: our DRC Christmas/Holiday Party for this year will be on a different date than usual. Mark your calendars for December 5th, 2018. The location will be at the Highlands Masonic Center, 3550 Federal Blvd. Denver, CO.

Thanks to our new members for making the DRC "Your Club". Please come to meetings and other events and stay active. Your name and call will be listed in this issue of the Round Table.

73 for now,

Gerry (W0GV)
President



FEBRUARY MEETING – WHAT'D I MISS?

BY BRENNAN PATE, AD0UZ

About 45 people attended the February face-to-face. After President Villhauer (W0GV) greeted everyone he had George Palecek (AB0YM) present on VHF contesting, particularly as a rover. George, who holds the current record for the Rocky Mountain Division, went over the necessary equipment, power needs and antennas. He talked about things he's learned through trial and error, talked about the different contests, explained grid squares and discussed strategies on maximizing QSLs and efficient logging. He provided some links for contesting resources and took questions from the audience. It was a humor-filled and enjoyable presentation. If you would like to view the slides from his presentation you can find them here: qsl.net/ab0ym/rover-vhf.pdf



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:

Gary Ryals	N0RRG
Duane Thompson	KB6CC
Matthew John King	KE0LKH
Robert Wolf	
Christopher Burgess	KE0PMI
Conrad Stephens	K0SVT

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.

DRC/TSA Aurora Site (WW0LFL)

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

Status: WW0LFL has sent a letter to the TSA describing the services that the DRC can provide and recommendations for the communications equipment and antennas. There was a meeting between the DRC and TSA a MOU was presented to the TSA. They are asking for more info that WW0LFL is putting together.

Station 4 Remote Power Control (WG0N)

Goal: Install Internet controlled power outlets.

Status: WG0N has installed an Internet controlled outlet power strip at Station 4. Waiting for the final connection of the new internet service.

Centennial Cone Remote Power Control (W0GV)

Goal: Document equipment to be controlled by the Internet controlled power outlets. Install the outlets.

Status: What is the final configuration, when will the power strip be installed and by whom?

Fusion Repeater Move (W0GV)

Goal: Discuss the feasibility of moving the Fusion repeater to a better coverage location.

Status: Feasibility study is in progress. Still looking at moving the repeater. Repeater was upgraded to the new DR2X after the DR1 failed.

Fusion Repeater WIRES Interface (W0GV)

Goal: Get the WIRES Interface on line.

Status: ?? Waiting for the final connection of the new internet service then the wires X will be set up.

Fusion Repeater WIRES Interface (W0GV)

Goal: Train several club members how to program and maintain the Fusion Repeater system.

Status: ?? Discuss how, when and by whom.

BrandMeister Repeater Operating Procedures (W6OAV)

Goal: Develop operating procedures and post on web-site.

Status: ?? This has been done and posted to the web site.

DRC's 100TH ANNIVERSARY PINS

By W0TX STORE

If you would like to commemorate the 100th year of the Denver Radio Club then ask about getting your very own commemorative pin. The cost is \$3 for one or two for \$5. They are available at the monthly face-to-face. Please talk to Gerry, W0GV. They are about 1" tall and 0.75" wide.



MARCH MEETING PRESENTATIONS

By GERRY VILLHAUER, W0GV

Presentation # 1: Post Natural Disaster Emergency Communication, by John (KD0SYE)

John will have pictures from when he was on St. Marten during hurricane Irma and communications and other infrastructures were knocked out.

Presentation # 2: DX Antennas/Go Packs, by Robert K0RCW.

WHAT IF THE WEATHER CHANGES?

If we should experience a turn in the weather on the day of our monthly DRC meeting it may be necessary to cancel the meeting. If this should happen listen for meeting status reports on 145.49 or 448.625 MHz repeaters during the afternoon on the day of the meeting.

LEARNING NET REPORT

BY FRED HART, AA0JK

Thanks goes out to our net controllers: Larry (K0LAI), Alex (KS0E) and Steve (KD0WMO). The following topics were discussed this past month:

- RF Choke / Ugly Balun for Uda / Yagi – Beam antennas.
- ARRL 2018 Handbook P-20.25 Fig. 20.24 RF Choke
- VHF Baluns (see Fig. 1), towers (see Fig. 2) and yagis (see Fig. 3)
- The Tape Measure Antenna: instructables.com/id/The-Tape-Measure-Antenna
- Working Amateur Radio Satellite: youtu.be/jmCgIk8eVWw (Great YouTube video, thanks Jim, AD0ZM)
- ARRL Suspends Controversial Director Confidentiality Requirements: perens.com/2018/02/02/arrl-suspends-controversial-director-confidentiality-requirements/ (Thanks for the update Jed, KD0YMG)
- If you're interested in self study, David Casler (KE0OG) has put together a great video series to go along with the ARRL License Manual to help you. You can visit his site at ke0og.net/training.
- Overcoming "New Ham" Frustration: AD#43, youtu.be/CmSFItIqamY
- WB0TGE "Mighty Woof" 2m/440 Dual Band Fan Dipole (DBFD)
- Building Copper Pipe Antennas, by Al Andzik (WB0TGE) wb0tge.com/?page_id=33
- Electro-Static Discharge (ESD): The generation of ESD, its hazards, and some ways of avoiding damage to your radio equipment, and components. Making your shack ESD safe.



Figure 1



Figure 2

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 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 Em-Comm Coordinators: Mike Vespoli (KE0HFH) or 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.



Figure 3

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,

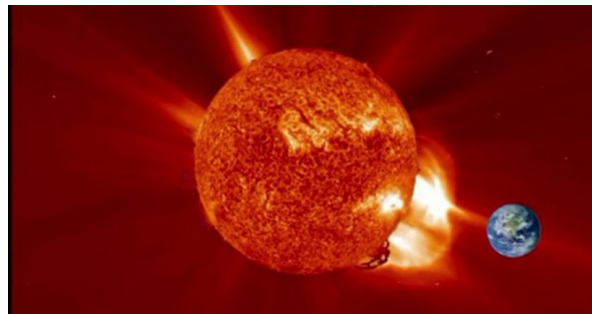
Fred
AA0JK

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.

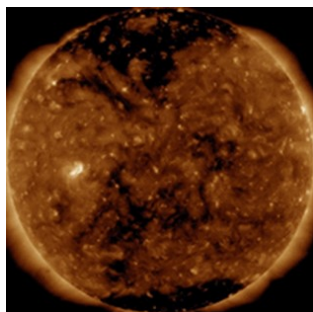
SOLAR UPDATE

PROVIDED BY Fred Hart, AA0JK

February 1st - February started out with low solar activity. No sun spots, and daily solar flux was declining. NOAA forecasters were predicting a 20% chance of G1-class geomagnetic storms as a solar wind stream grazed Earth's magnetic field. The gaseous material was not expected to hit our planet head-on. Hazards: Geomagnetic Storms <https://youtu.be/s9YGOUWpH8s>



February 2nd - Sunspot AR2697 appears around the east limb. This tiny Sunspot was not expected to pose any threat of strong solar flares. NOAA reported AR2697 as inactive and nearly decaying to plage.



There were no large equatorial coronal holes. Credit: SDO/AIA

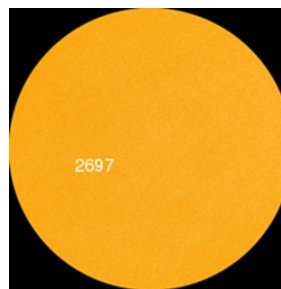
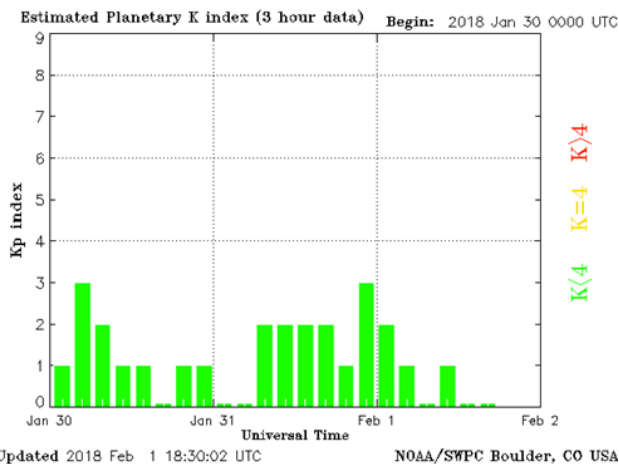


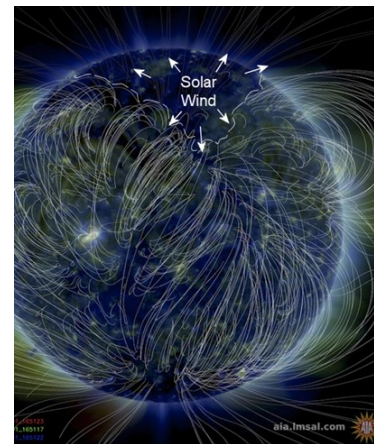
Image courtesy of SDO/HMI.

Prepared jointly by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center. UPDATED 2018 February 01 0030 UTC, 24 hr Summary: Solar activity was very low. Region 2697 (S09E33, Axx/alpha) was inactive and nearly decayed to plage. No Earth-directed CMEs were observed in available coronagraph imagery.



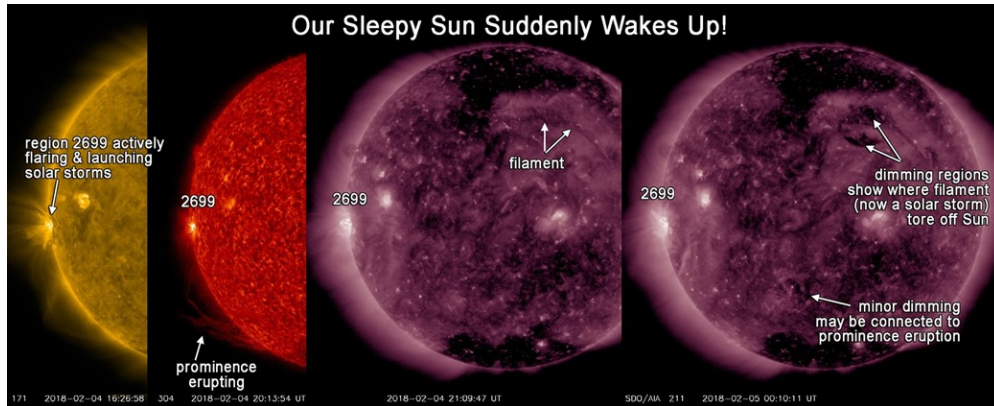
February 4th - POLAR CROWN CORONAL HOLE - NASA's Solar Dynamics Observatory.

Solar wind was spilling down from this northern coronal hole. Credit: SDO/AIA



Although this hole was not directly facing Earth, forecasters believed that some of the emerging solar wind could spill down and brush against our planet's magnetic field on February 4th and 5th. Minor geomagnetic storms were possible when the solar wind arrived.

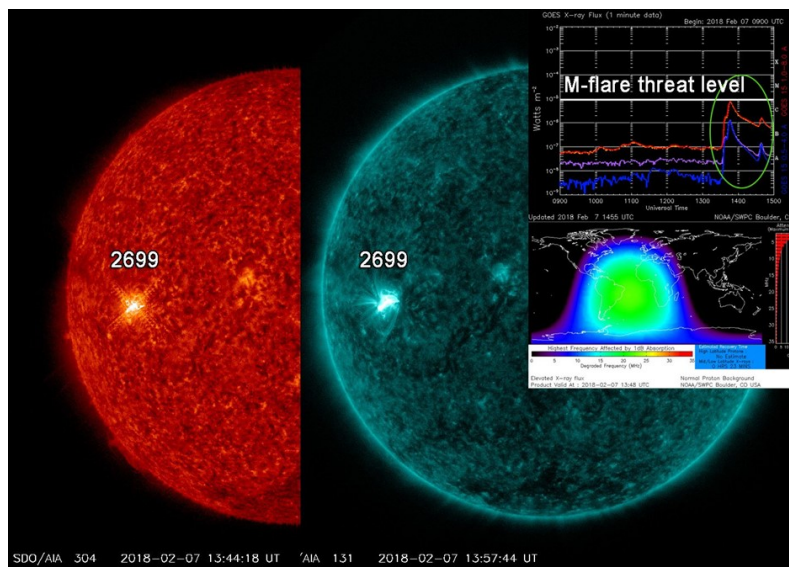
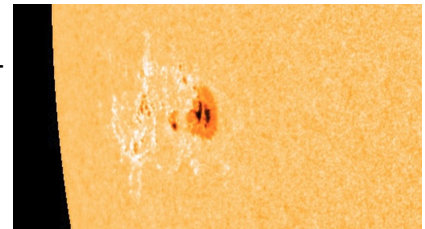
February 5th - SOLAR MINIMUM SUNSPOT: New sunspot (AR2699) was emerging and it was crackling with B- and C-class solar flares. Such relatively minor flares would escape notice during a more active phase of the solar cycle. However, we are now on the eve of Solar Minimum. This activity was a sharp departure from months of tomb-like quiet on the solar surface.



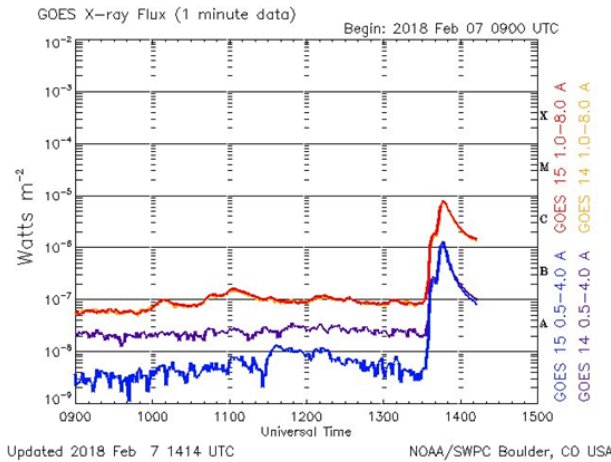
Dr. Tamitha Skov @TamithaSkov: Our Sun wakes up - Not only were we watching region AR2699 firing solar flares & launching solar storms on Sun's East limb, but had several other mini-solarstorm launches at the edge of the Earth-strike zone! Minor chance of a mild disturbance forecast as these pass Earth near February 10th.

February 6th - A SOLAR MINIMUM SUNSPOT: With Solar Minimum right around the corner, sunspot counts were at an almost 10-year low. So it came as a surprise when a relatively large sunspot emerged near the Sun's eastern limb. AR2699 had a primary dark core larger than Earth with many smaller magnetic condensations trailing behind it, in all stretching more than 75,000 km across the sun's surface.

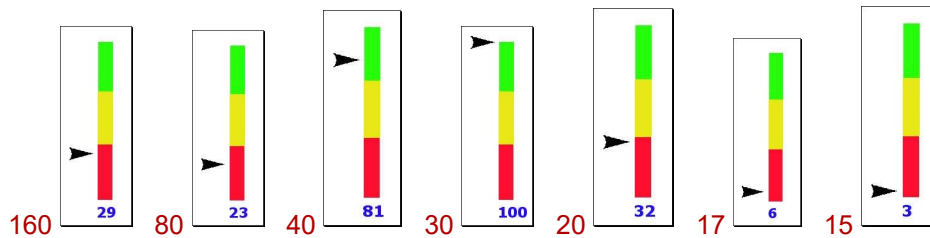
Rare "solar minimum sunspots" are capable of intense explosions just like sunspots during more active phases of the solar cycle. Could this spark a stronger solar flare as AR2699 turns toward Earth?



Dr. Tamitha Skov @TamithaSkov: Our waking Sun fires a near M-flare! Region AR2699 was rapidly becoming an M-flare player as it rotated into the Earth-strike zone. HF radio communications blackouts were possible and Ham radio & emergency responders were expecting possible issues!

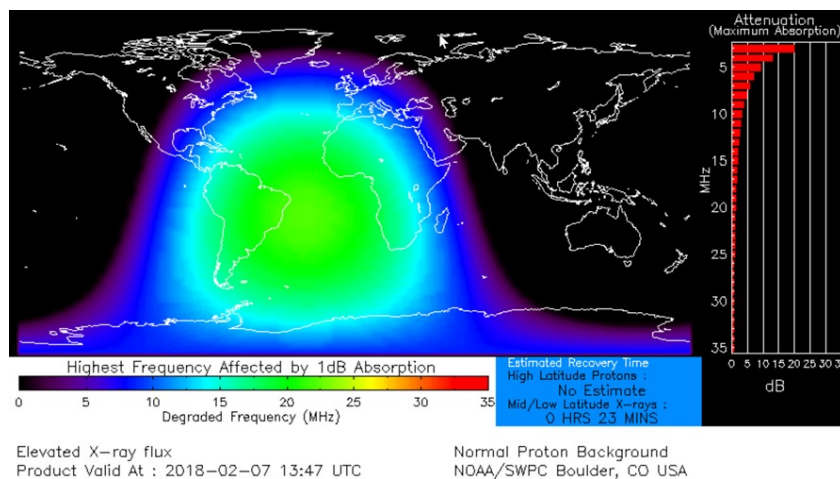


<http://www.bandconditions.com/>



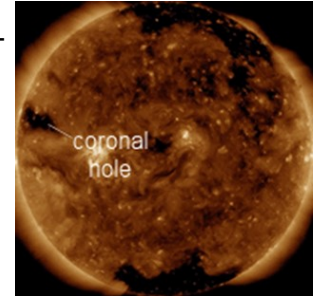
February 8th - The unstable magnetic canopy of sunspot AR2699 erupted on February 7th (1347 UT), producing a C8-class solar flare. A pulse of extreme UV radiation from the flare ionized the top of Earth's atmosphere, browning out shortwave radio transmissions below ~10 MHz over the South Atlantic Ocean.

AR2699 was becoming larger and more unsettled as it turned toward Earth, so more flares were possible. NOAA analysts confirmed that this flare produced no CME, there were no geomagnetic storms as a result of the explosion.

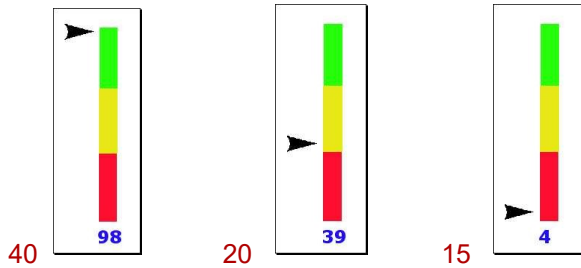


<http://hinode.nao.ac.jp/en/news/results/StrongMagneticField180206/>

February 9th - A significant coronal hole was emerging over the Sun's eastern limb. Solar wind flowing from this gap was expected to reach Earth on February 15-16. Credit: SDO/AIA



HF Band Conditions were:

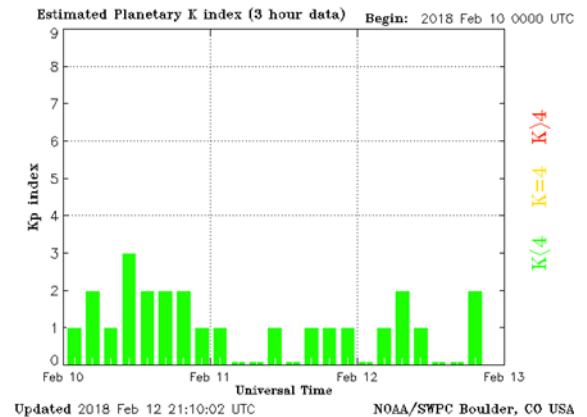
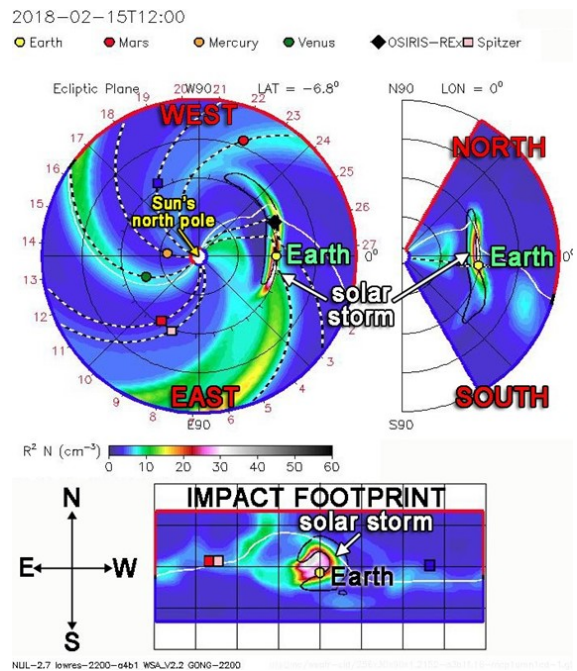
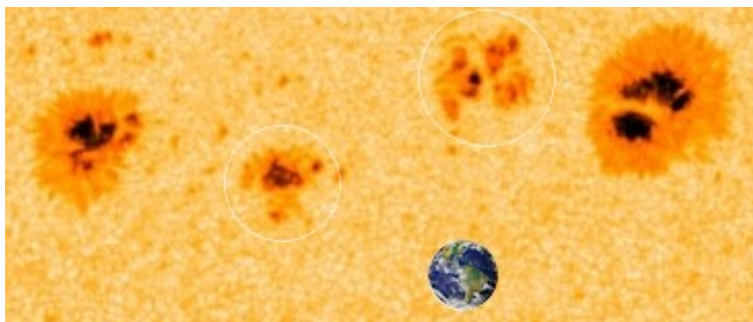
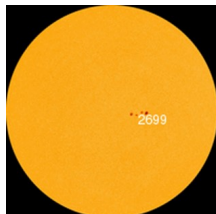


February 12th - Direct Hit! NASA prediction models showed a solar storm launched by the Sun would hit Earth near midday February 15th GMT! Ham Radio issues, especially on Earth's night side, were expected. G1-class geomagnetic storms were possible.

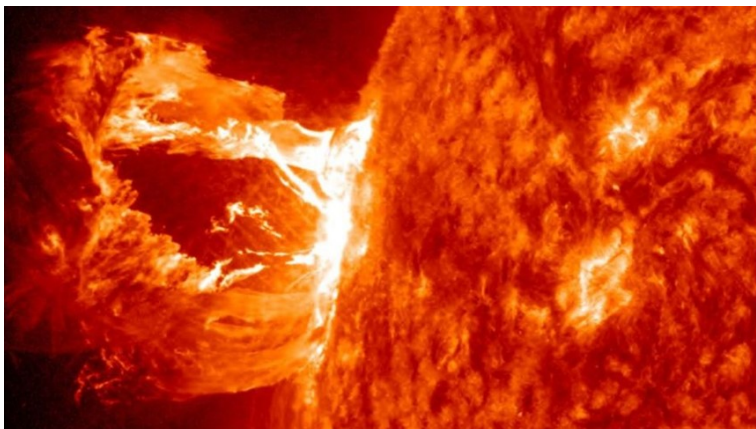
Sunspot AR2699 was a shape-shifter. Over the weekend it morphed into a quadruple 'spot, with two new magnetic islands as large as Earth.

Rapid changes in the appearance of a sunspot mean one thing: Its magnetic field is changing rapidly as well. Tangled magnetic fields can criss-cross, and explode--a process known as "magnetic reconnection." Solar flares in the magnetic canopy of AR2699 were expected.

Sunspot AR2699 was crackling with C-class solar flares. Credit: SDO/HMI

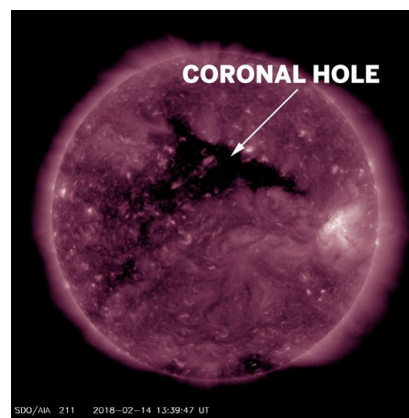
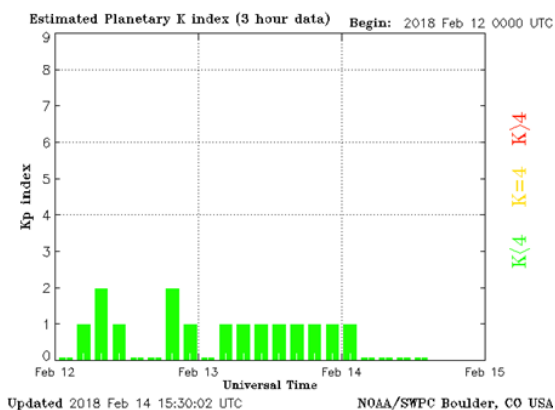


Sun spot explodes, hurling a CME at Earth. The magnetic canopy of AR2699 exploded in a blast that lasted for more than six hours. The blast produced a C1-class solar flare.



A sunspot's magnetic canopy is where solar flares happen. Magnetic lines of force criss-cross, and explode in a process known as "magnetic reconnection."

February 14th - A coronal hole solar wind stream was predicted to reach Earth by February 15th.

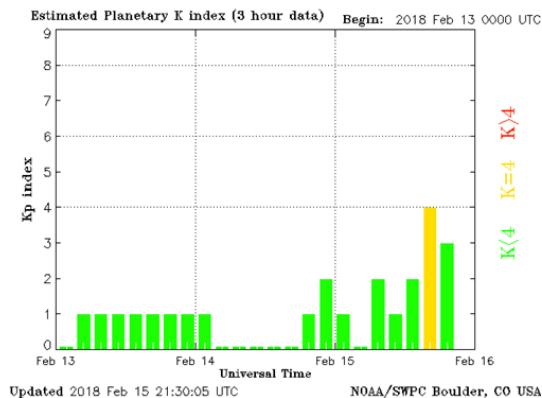


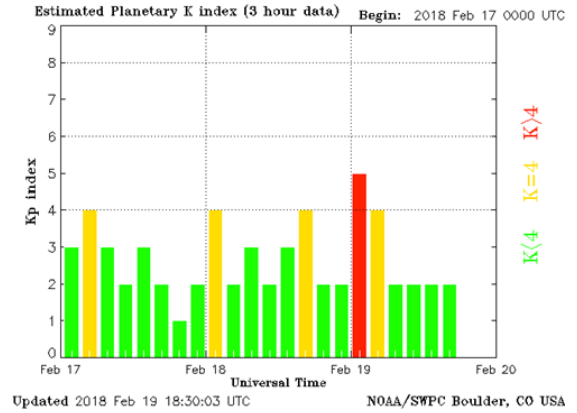
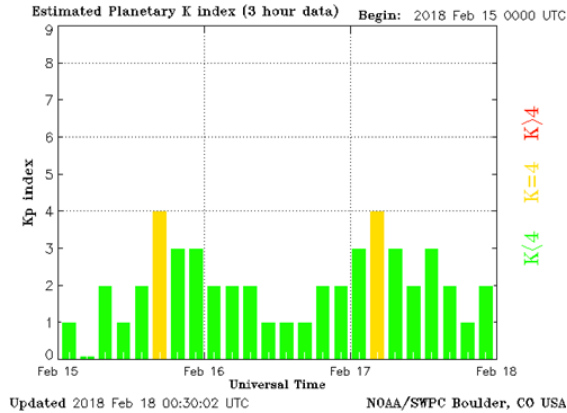
February 15th - What appeared to be a weak shock passage was detected at 07:51 UTC by the DSCOVR spacecraft. This was likely related to the CME from February 12th. A further solar wind increase was expected as a coronal hole stream was expected to become geoeffective over the following few days. WARNING: Geomagnetic K-index of 5 expected.

February 16th - Solar activity increased over the last reporting week (February 8-14).

Saturday, February 17th - THE SOLAR WIND HAS ARRIVED: Earth was entering a stream of fast-moving solar wind that could disrupt HF propagation. The gaseous material was flowing from a wide hole in the sun's atmosphere. NOAA forecasters said there was a 30% chance of geomagnetic storms on February 17th and 18th.

The sunspot was leaving: Sunspot AR2699, which hurled a CME toward Earth was about to vanish. The active region was rotating off the face of the Sun over the weekend. NASA's Solar Dynamics Observatory was monitoring the sunspot's magnetic canopy in profile over the sun's western limb.





February 19th - Minor Storm: A coronal hole stream was moving past Earth at near 600 km/s, helping to stir up isolated periods of enhanced geomagnetic activity, including a brief Minor (G1) geomagnetic storm early Monday morning.

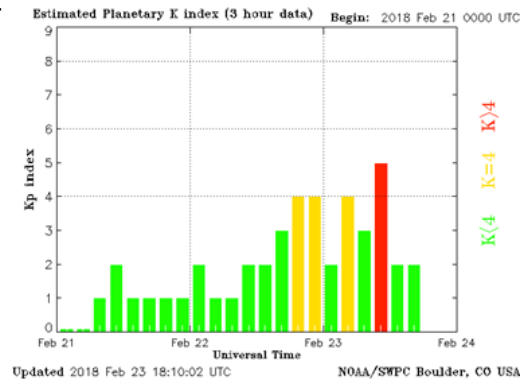
The face of the sun was blank again. The absence of sunspots heralds the approach of Solar Minimum. Sunspot numbers rise and fall with an ~11-year period, slowly oscillating between Solar Max and Solar Min. In 2018, the pendulum is swinging toward a deep minimum expected to reach nadir during the next 2 years. Space weather changes during solar minimum: Cosmic rays increase, Earth's upper atmosphere cools and shrinks, Stay tuned for "quiet."

February 20th - Solar wind speeds declined to nominal levels, as Earth was exiting a stream of solar wind.

February 22nd - With the passing of AR2699 around the west limb, and returning to a spotless facing Sun, propagation was expected to be poor for the following two weeks.


February 23rd - Prepared jointly by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center. UPDATED 2018 February 23 0030 UTC, 24 hr Summary: Solar activity was very low. The visible disk remained spotless. No Earth-directed CMEs were observed in available satellite imagery.

Forecast: Solar activity was expected to be very low throughout the forecast period (23-25 February).




73,

Fred
AA0JK



The Denver Radio Club
is an ARRL Special Service
Club; Support your hobby &
join the ARRL TODAY!



What's Happening to HF Propagation?

By BILL RINKER, W6OAV

As HF operators are discovering, HF propagation is declining as Solar Cycle 24 is waning. There have been many discussions by HF operators concerning when will Solar Cycle 24 end, when will Solar Cycle 25 begin and what will Solar Cycle 25 be like. Here's summary of what the "experts" say.

Solar Cycle 24 has been a disappointment in that it has been the weakest cycle since 1906. Figure 1 shows how it stacks up to the past 6 solar cycles. As shown in Figure 1, Solar Cycle 24 is scheduled to draw to a close sometime in mid 2018. Solar Cycle 25 will begin to appear sometime in early 2020 and peak around 2025. This means that HF propagation will be very poor between mid 2018 and mid 2020.

Solar Cycle 25's sunspot maximum is likely to occur around 2025. Based on different prediction methods Solar Cycle 25 will be weaker than Solar Cycle 24 and ranging from weak to moderate magnitude. At present, no definite predictions can be made. Unfortunately, there are dire predictions that Solar Cycle 26 will be negligible.

So, why are the predictions for Solar Cycles 25 and 26 so pessimistic? It is largely because of the study of the sun's Meridional flow. See Figure 1 (Credit: Science@NASA). The Meridional flow is a large flow that transports solar plasma from the equator to the poles and back like a giant conveyor belt. The structure and strength of the Meridional flow determines both the strength of the Sun's polar magnetic field and the intensity of Solar Cycles. Some studies show sunspot magnetic field strengths have been declining since 2000 and are already close to the minimum needed to sustain sunspots on the sun's surface. Also, studies show that the magnetic field distribution in the outer layers has become thinner over recent years.

So, based on present predictions, HF propagation on 30 meters and above will be almost nonexistent from mid 2018 through mid 2020. Yes, there will be occasional openings but one will have to be observant to catch them and usually they are short lived.

References

- 1.) Dr. Sten Odenwald Astronomer, NASA Heliophysics Education Consortium:
https://www.huffingtonpost.com/dr-sten-odenwald/waiting-for-the-next-suns_b_11812282.html
- 2.) NASA – Long Range Forecast:
https://science.nasa.gov/science-news/science-at-nasa/2006/10may_longrange/
- 3.) W. Dean Pesnell, NASA, Goddard Space Flight Center:
https://ccmc.gsfc.nasa.gov/RoR_WWW/SWREDI/2017/pesnell_SC_Pred_GSFC_SWx_Jun_2017.pdf
- 4.) Newsweek Article: <http://www.newsweek.com/solar-minimum-sun-weird-behaviour-631276>

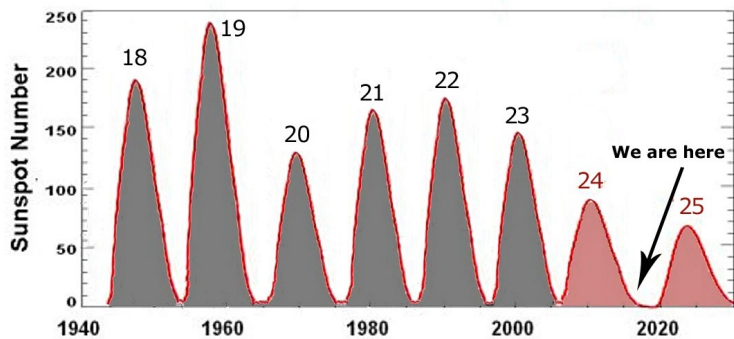


Figure 1 - Past and and future Solar Cycles

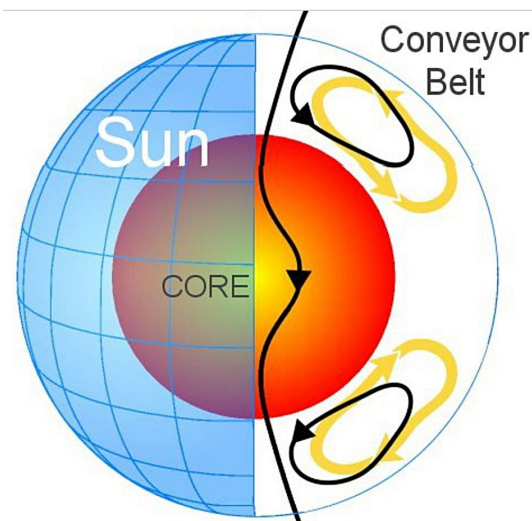


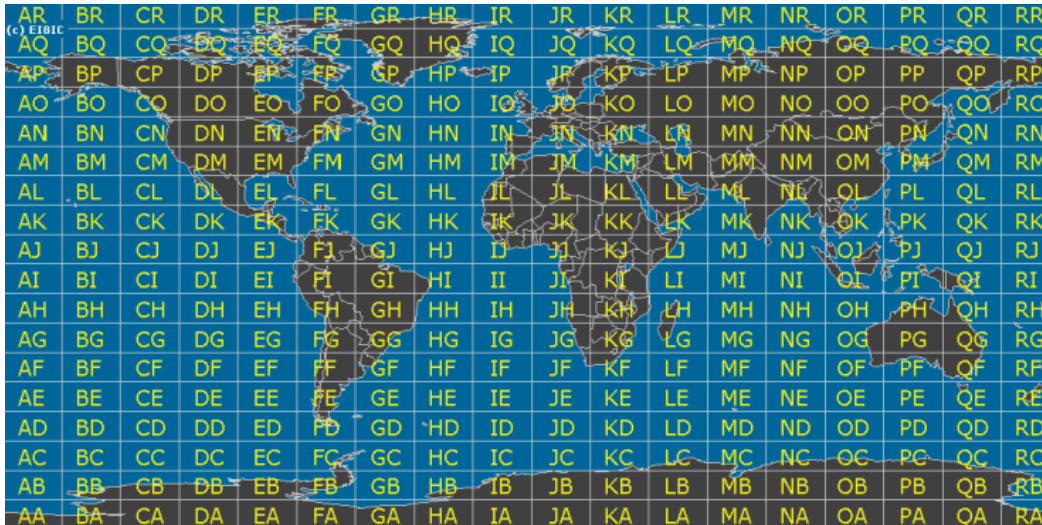
Figure 2 - Meridional circulation patterns on the sun

Ham Tech: "Grid Here is FN13CD43"

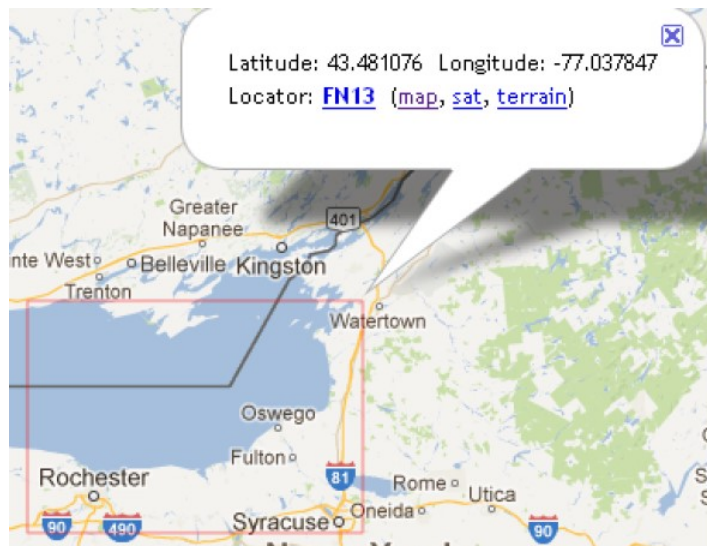
By DUANE FREGOE, K2SI
REPRINTED WITH PERMISSION FROM THE [RARA RAG](#)

The title of this article has nothing to do with a secret code, although it may seem that way. Many hams will recognize the title as a Maidenhead grid square locator. Grid squares are the typical exchange in a VHF contest. Grid squares are also a popular exchange for 6-meter contacts. The first four characters of the grid square such as FN13 are used in the VHF contests and 6-meter contacts. For hams that have a beam on a rotor the first six characters of the grid square locator such as FN13cd are used for pointing the antenna in the correct direction.

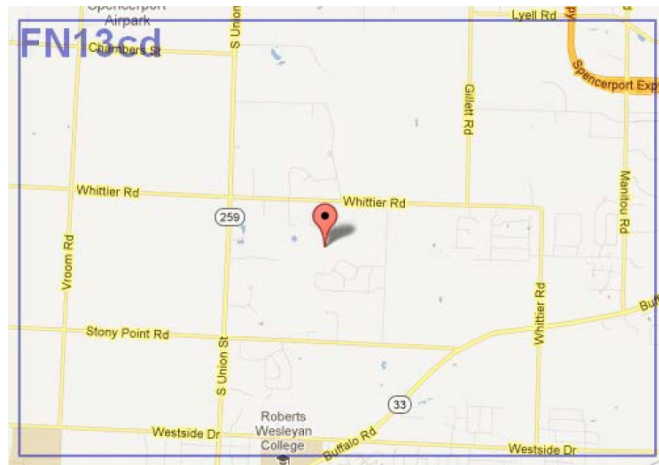
The first two characters (FN) locate one of 324 blocks that the world is divided into (1 degree x 1 degree squares):



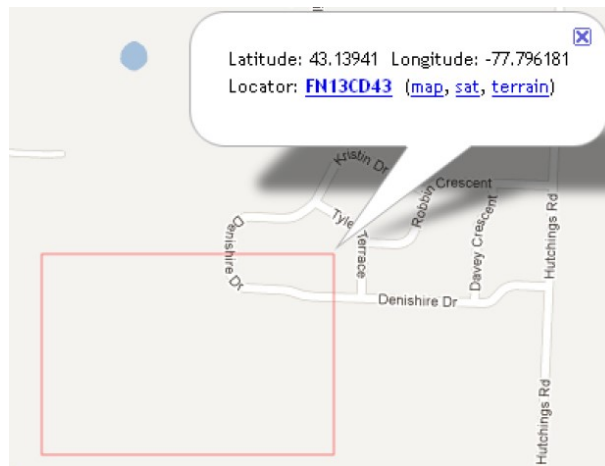
The next two characters (13) take the first block and subdivide it into 100 blocks:



The next two characters (cd) take the prior block and subdivide it into 576 blocks:



The last two characters (43) take the prior block and subdivide it into 100 blocks:



My QTH in the title is one of a possible 1,866,240,000 blocks. To see how big your eight character block is for our QTH go to <http://no.nonsense.ee/qthmap/>. Start by entering your 4 or 6 character grid square to zoom in on the map. Zoom in further until you can see your property and double click on it. It will show you the block and the 8 character designation.

ATTENTION

The DRC Board of Directors meetings are held on the 4th Wednesday of the month and are open to any member. Due to scheduling of meeting space, the board does not always meet at the same location and on occasion meetings are held via Skype. Anyone wishing to attend, please contact a board member prior to meeting night for specific information.

HUNTING FOR THE PERFECT SWR

REPRINTED WITH PERMISSION FROM ONNO, VK6FLAB

There is a persistent perception among a small part of the amateur community that you need to build, buy or use antennas with a perfect 1:1 SWR to get the best results. Sometimes a contest erupts with who can get the lowest SWR.

Without getting technical, since that could take hours and you have better things to do. A 50 Ohm dummy load has a perfect SWR of 1:1 and you should already know that a proper dummy load doesn't radiate, so while it has a perfect SWR it's not a perfect antenna.

If your SWR meter reads 1.5:1, you're losing 3% of your signal, at 2:1 it's 11%, so just because the SWR is 2, doesn't mean you've got a dud antenna.

Now I should point out that this can be a particularly dense topic if you get into the finer detail and if you do a search for "Understanding SWR by Example", you'll come across a delightful and very detailed document written by Darrin K5DVW and published in QST magazine that goes into pictures, graphs and explanations and also discusses ladder line.

So, you can now stop hunting for the perfect 1:1 SWR and learn what your SWR meter is telling you.

I'm Onno VK6FLAB

To listen to the podcast, visit the website: <http://podcasts.itmaze.com.au/foundations/>. Feel free to get in touch directly via email: onno@itmaze.com.au, or follow on twitter: [@vk6flab](https://twitter.com/vk6flab) (<http://twitter.com/vk6flab/>)

YOUR FIRST ANTENNA

PROVIDED BY FRED HART, AA0JK

Elmer's often get asked, "What's the best antenna for a new Ham?"

If you are like most, you don't have the real estate, unlimited funds, or you may live in a HOA antenna restrictions environment. A 100 ft tower with a multi-element beam is out of the question. So, what can one do?

The main thing to remember is, in the end, you have to determine this for yourself. Everyone's situation is different. No one answer fits all. Start by asking yourself a few questions:

- 1) Can you even put up an outdoor antenna?
- 2) How much do you want to spend?
- 3) How much room do you have?
- 4) QRP or QRO.
- 5) Are you handy?
- 6) What bands do you wish to operate on?



If you cannot put up an outdoor antenna, then you will have to end up with a real "compromise antenna". That may sound really shoddy, but don't be discouraged! There are lots of folks out there who have earned "Worked All States" and "DXCC" using indoor or stealth antennas. Dipoles can be strung up in attics and be quite effective. Also, keep in mind that if your antenna is not going to be exposed to the elements, then you can lash up something quite often, using lighter duty wire and components. Another antenna to investigate is the magnetic loop antennas. Use Google to investigate for yourself the wealth of information out there on these, and other options like QRP portable antennas.

If you have access to the outdoors then your choices are greater, but they can still be dependent on the size of your lot. We all would love to have a full sized 160 Meter loop antenna, but a postage sized suburban lot just does not allow for it.

A G5RV does not have to be stretched out to it's full length. You can always take an element and have it zig-zag around the lot to get it to fit within your property lines. It can still work well. Every antenna will have its compromises.

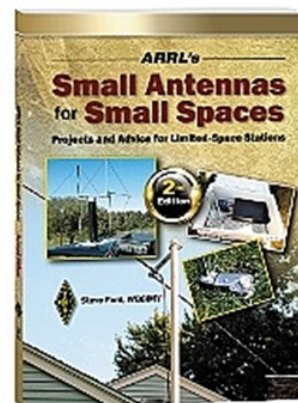
If you're going to operate on just a few bands, individual resonant half wave dipoles might be your answer. If you want to operate on most, if not all the bands, then a non-resonant antenna and a tuner will allow you to do that. If space is at a super premium, keep in mind that verticals work well, but require ground radials.

The great thing about wire antennas is that they are fairly cheap, if you go the home-brew route. Again, there is a wealth of information about them on the Internet. Utilize Google to investigate dipoles, doublets, loops, long wires (Zepp antennas), bazookas, etc. While Amateur Radio gear is becoming increasingly more complex and expensive, wire antennas still provide an area for low cost experimentation.

If price is a MAJOR factor, please consider a home-brew antenna. It may not be pretty, and it may not be fancy, but if it works and gets results, then go for it. A friend might come over and laugh at it, saying "How does THAT thing work?"- Then, walk them into your shack and show them your large collection of QSL cards. Which would you rather look at, your antenna, or a wall filled with QSL cards? I think you're thinking that you'd rather look at the cards, and using the wire antenna to get those cards. Pretty antennas are nice, but antennas were never meant to be aesthetic works of art.

Every antenna will be a compromise depending on your situation. Don't expect a computer program to dictate the configuration and performance of your specific needs. This is not a perfect science. The perfectionists will be wasting their time chasing numbers, while you will be adding contacts to your logbook

DIY. Don't expect someone else to setup your antenna. This would not be in the spirit of amateur radio. Don't deny yourself the gratification of seeing your creation coming to life. Also, don't look for someone else's time and labor to be time and dollar free.



ARRL Item No. 0512

In the end, after answering the necessary questions, and doing a lot of Web surfing, you'll probably come up with a half dozen or so solutions that will work for you. Don't be afraid to experiment, modify or make changes. Keep thinking outside the box!

Have Fun.

73,

Fred
AA0JK



By Phil Gildersleeve, W1CJD, (SK)

FACT OF THE DAY

Induction and Radiation Fields

There is a mix of magnetic and electric induction fields and an electromagnetic radiation field at distances that are small compared to the size of a transmitting antenna or a wavelength. The two induction fields differ in phase and are stronger in magnitude than the radiation field near a transmitting antenna. The magnetic field strength from a doublet is inversely proportional to square of the distance. The electric field strength from a doublet has two components. One diminishes inversely proportional to the square of the distance. The other diminishes inversely proportional to the cube of the distance. However, the radiation field strength diminishes inversely proportional to the distance, so both induction fields diminish faster than the radiation field with distance.

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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

HAM SITE OF THE MONTH

[NIFOG - National Interoperability Field Ops Guide](#)

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. 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)



Bill's flux will be back next month...

UPCOMING EVENTS
HAMFESTS & CONVENTIONS

Event	Date	Location	Sponsor Website
LARCFest 2018	04/07/18	Boulder County Fairgrounds - Exhibit Building	Longmont ARC

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

Contest	Start Date	Start Time	End Date	Stop Time	Notes
International DX - Phone	03/03/18	0000 UTC	03/04/18	2359 UTC	
Rookie Roundup - SSB	04/15/18	1800 UTC	04/15/18	2359 UTC	

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
Idaho	03/10/2018	03/11/2018	Idaho QSO Party	
Oklahoma	03/10/2018	03/11/2018	Oklahoma DX Association	
Wisconsin	03/11/2018	03/12/2018	West Allis Radio Amateur Club	
Virginia	03/17/2018	03/18/2018	Virginia QSO Party	
Louisiana	03/17/2018	03/18/2018	Louisiana Contest Club	Based on 2017 date.
Mississippi	04/07/2018	04/08/2018	ARRL Mississippi Section	Based on 2017 date.
Missouri	04/07/2018	04/08/2018	Boeing Employees' Amateur Radio Society - St. Louis	Based on 2017 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. 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 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



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MARCH 2018							<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  Full Moon	2	3 Int'l DX - Phone - Begins 0000 UTC	
4 Int'l DX - Phone - Ends 2359 UTC	5	6	7 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	8	9  Last Quarter	10	
11 	12	13	14 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	15	16	17  New Moon	
18	19	20 	21 DRC Meeting Elmer 6 PM General 7 PM	22	23	24  First Quarter	
25	26	27	28 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	29	30	31  Full Moon	

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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