



# ROUNDTABLE

The Denver Radio Club Newsletter

Since 1917

April 2016

## PRESIDENT'S MESSAGE

By Gerry Villhauer – W0GV

**Hello DRC Members,**


Here we are April 2016, and winter should be about over...well maybe! Some plants are blooming and trees are budding out for spring. Our March meeting and program was reported to me as very successful. Reported because I came down sick upon returning from a work trip to Oklahoma and felt it would not be fair to come spread it around the meeting. Thanks to our able VP Dave (K0HTX) for taking over with the meeting night duties. And also thanks to our program presenter Dwight Eckert for an informative program "The Orion Program" and our own Lockheed Martin Company involvement in its development.

Our next meeting will be Wednesday, April 20th and our program will be on Portable HF Antennas. Robert White (K0RCW) will be our presenter. Robert will compare the Alex (Mag) Loop and the ever popular Buddistick antennas. Robert will be using data collected using WSPR protocol and worldwide beacons. He will have both antennas on display including his backpack rig, tuner and power supply. Robert always put on interesting programs and this promises to be another not to miss.

Next month is the "Big Event" for ham radio in our state, HamCon Colorado the ARRL Rocky Mountain Division Convention being held in Keystone, Colorado. If you have not yet registered for the convention or made a room reservation, PLEASE DO SO NOW! You still have time to get in and enjoy a wonderful convention. Go to the website [Hamconcolorado.org](http://Hamconcolorado.org) and see the terrific speaker lineup like, the new President of the ARRL, Rick Roderick (K5UR), our newly elected ARRL Vice President, Brian Milesosky (N5ZGT), former FCC attorney, Riley Hollingsworth (K4ZDH), ARRL General Counsel, Chris Imlay (W3KD), Gordon West (WB6NOA) and many more! Think about it... to see a speaker lineup like this, the only other place I can think of is the Dayton Convention...and this is right in your back yard! Go to the website above and check it out.

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


**INSIDE THIS ISSUE**

March - Meeting, What'd I Miss?	<b>2</b>	Solar Update	<b>8</b>
Elmer Session Report / Did You Know?	<b>3</b>	Understanding Antennas / Siren Tests	<b>9</b>
Why You Should Get Your Extra Class	<b>4</b>	Learning Net Report	<b>10</b>
Who's New In The DRC?	<b>5</b>	Propagation And Forecasts	<b>13</b>
Technical Committee Report	<b>5</b>	Events and Contests	<b>14</b>
April Meeting Presentation	<b>6</b>	DRC Calendar	<b>16</b>
My Ham Radio Story	<b>7</b>	DRC Board & Staff	<b>17</b>



**MARCH MEETING - WHAT'D I MISS?**

By Bill Rinker, W6OAV

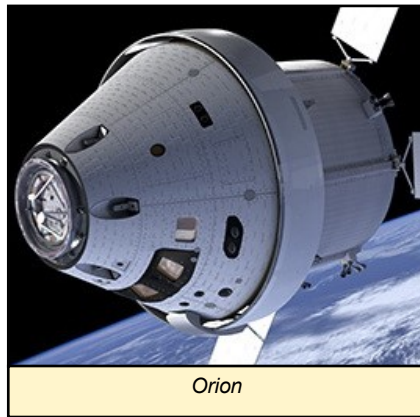
There were 42 attendees. After introductions were chaired by Dave (K0HTX), Jim (K0TOR) announced that the Wheat Ridge siren test is scheduled for 13 April. The meeting was then turned over to the guest speaker Dwight Eckert. His PowerPoint was titled "The Orion Program – Lockheed Martin". NASA's Orion spacecraft is designed to take humans into far space and eventually to Mars. Dwight's presentation provided the following:

- Video of the successful unmanned EFT-1 (Exploration Flight Test -1) test flight and recovery.
- Description of the analysis of EFT-1 which is being done at Water Canyon.
- Video of the assembly and testing of Orion.
- Description of the mission timeline (orbiting the earth and moon, returning and later going to Mars).
- Overview of the Orion launch system and of the spacecraft.
- How the Orion will be built for going beyond earth orbit and returning.
- Exploration of NASA's Mission 1 test for orbiting earth and the moon.
- Description of the different sections of the Orion spacecraft and the integrated test lab mockup.
- Human factors to be considered for years in space.

Many good questions followed the presentation. Pictures and information can be found at <https://www.nasa.gov/exploration/systems/orion/index.html>.



Dwight Eckert



Orion



Dwight Taking Questions

**Don't forget to join in Wednesday nights at 7:30p.m. for the  
DRC Learning Net on 145.49/448.625 Repeaters!**

### ELMER SESSION REPORT

BY LARRY IRONS, K0LAI



The March 16, 2016 Elmer Session discussed the following topics:

- Maldol HVU-8 multi-band antenna
- HF antennas for stationary use in the field
- WiFi setup for the Raspberry Pi computer
- Slot antennas
- SDR software with a USB antenna
- Conditions for grounding and use of ground radials for vertical HF antennas
- Troubleshooting handheld radio signal weakness

We certainly enjoy everyone's input and participation. Always remember that there are no silly questions. We were all once newbies.

### DID YOU KNOW?

BY JOHN MARDOCK, KR0P

John, that radio your are working on has a circuit board that is not as nice and shiny as the one you used to have. I thought you told me that if a solder joint was not shiny it could be a bad one.



Well, yes Margaret, that used to be the case. The European Union banned all lead from products being offered for sale in the EU in 2006. That forced the entire world to produce products without lead and has caused quite an issue with the electronics industry. Since the solder does not have lead it does not look the same or act the same anymore.

So do you have to use lead-free solder now?

No, Margaret, the USA does not have a requirement to use lead-free solder. In fact, repairs are easier if I use my old solder, since it melts at a lower temperature and flows better.



I don't understand why you have so many rolls of the stuff, John.

Well, the most common diameter I used to use was .032. As components and circuits have become

smaller, I use smaller diameter solder. For most of the surface mount components, I use .014 or .010 diameter.

What's the R, RA, and RMA mean on some of those spools?

Well the R means the solder contains rosin flux, RMA is mildly-activated rosin, and the RA is rosin-activated. RA is the most aggressive rosin flux and is used for slightly-corroded or less- than-clean joints.

Some are 63/37 others are 60/40. What's that?

Well, Margaret, the first number signifies the tin content, the second the lead content. 63/37 is called the eutectic. It has the lowest melting point of the ratios, which is 361 °F.

So why did you ask me to pick up some 91% isopropyl alcohol at Walmart?

I use that to clean the rosin off the joints after I am done soldering.

So does that mean you can save money and buy that solder in the plumbing section of the hardware store?

No, Margaret, that solder is acid flux solder and should never be used for electronic joints. No amount of alcohol will clean all of that acid flux off the circuit.

*~ Editor's Note: The above article is reprinted courtesy of John Mardock (KR0P), the Lincoln Amateur Radio Club and the Lincoln LOG at: <http://k0kkv.org>.*

**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.*

**ELMER SESSION START TIME**

The Elmer Session Starts at 6 p.m.  
before the regular 3rd Wednesday DRC Meeting!

***Come join in on the sharing of information.***

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## DX University

Will be held at  
**Keystone Conference Center**  
**Thursday May 12, 2016 1:00 pm to 9:00 pm**

DX University™ is a multi-media program offering information, instruction and varied learning opportunities for DXers, Contesters and DXpeditioners alike. Don't miss this opportunity to learn DX and Contesting skills from some of the best in the hobby. Being a competent DXer is a "learned" skill that requires both knowledge and practice to achieve, and DXU is designed to give you a "jump start" on these skills.



If you are new to DXing techniques, procedures and operating practices DX University will help you become a successful DXer on all of the amateur bands.

A cadre of seven top DXers (big guns and little pistols) from the Rocky Mountain Division have been assembled; many of whom traveled to some of the rarest DX entities on earth to guide your journey.

Don't miss this opportunity to learn about the world of DXing.



This is an entirely separate event from the HamCon Colorado Convention and does require a separate registration fee.

Registration available at: [www.hamconcolorado.org](http://www.hamconcolorado.org)

## WHY YOU SHOULD GET YOUR EXTRA CLASS LICENSE

BY DAN ROMANCHIK, KB6NU

The Amateur Extra Class license is the highest class of license in the United States, and perhaps the world. Many hams—even hams that live outside the U.S.—aspire to pass the test and be awarded one.

There wasn't always an Amateur Extra Class license. The Extra class license, as we know it today, was created as part of the 1951 license restructuring, that also created the Novice and Technician Class licenses. (In 1951, the Novice license was the "beginner's license." To get a Technician Class license, you had to pass the written test that General Class operators had to pass.)

Although it gave an operator no additional privileges, to get an Extra Class license, one had to:

- Pass a 20 wpm code test (Generals had to pass only a 13 wpm code test).
- Pass a longer and more difficult written examination than the General Class exam.
- Have at least two years of experience as a licensed radio amateur.

Today, without the code test and the experience requirement, many hams upgrade to Extra Class as soon as they can. Some even pass the Technician Class, General Class, and the Amateur Extra Class exams in a single test session.

So, what's the attraction? Why should you upgrade to Extra?

One of the reasons that you should upgrade to Extra is that you get use of the entire 80 m, 40 m, 20 m, and 15 m bands. Portions of those bands, such as 3.6 – 3.7 MHz in the 75m band and 14.150 – 14.175 Mhz in the 20m phone band, are reserved exclusively for Extra Class licensees. Extra Class operators also have exclusive privileges in the CW portions of the 80 m, 40 m, 20 m, and 15 m bands. These are the frequencies where the DX stations hang out.

Another reason to get your Extra Class license is that only Extra Class licensees can administer General Class and Extra Class license exams. General Class operators can become Volunteer Examiners (VEs), but they are only allowed to administer Technician Class exams.

Another reason you might want to get an Extra Class license is to get a fancy vanity callsign. Only Extra Class operators can apply for 1×2 or 2×1 callsigns, such as W8RP or KT8K. A short, snappy callsign can help you work more DX or improve your contest scores.

Whatever your reason, studying for the Extra Class exam will open your eyes to many aspects of the hobby that you may not be familiar with. And, as you work your way through the material, you'll learn things that make you a better amateur radio operator and enable you to enjoy the hobby more. It's not easy, but in the end, an Extra Class license will help you have more fun with amateur radio.

*Dan (KB6NU) is the author of the "No Nonsense" line of amateur radio license study guides, a prolific blogger ([www.kb6nu.com](http://www.kb6nu.com)), and an active CW operator in the Extra Class portion of the HF bands. If you have any comments, questions, compliments, or complaints, email him at [cwgeek@kb6nu.com](mailto:cwgeek@kb6nu.com).*

## 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. We have a number of activities throughout the year and we'd like very much for you to participate in serving your community.

Lyle K. Marti, Jr.	KE0GZB
Bruce R Palmer	K0WM
Gary Meyer	W7DNM
Richard Browning	K1RAB
Brian E Seib	KE0HXD
David Haan	AA0DH

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.

More information can be found on the Denver Radio Club website at <http://www.w0tx.org>.

## TECHNICAL COMMITTEE REPORT

By Bill Rinker, W6OAV



The following is an overview of the subjects discussed at the March Technical Committee meeting. The project coordinators' call signs are in red.

### AllStar Link Voter System (W0GV)

**Goal:** Determine the feasibility of establishing an AllStar Link Voter network.

**Status:** W0GV, KD0WHB and K0LAI installed a test server with Asterisk software and are getting familiar with it. N0ETV has assembled a remote AllStar Link receiver for testing. W0GV is looking for a volunteer to wire the receiver.

### DRC/TSA Aurora Site (W0GV)

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

**Status:** W0GV is still attempting to meet with the newly assigned TSA contact.

### Noise at Station 4 (W6OAV)

**Goal:** Monitor noise level.

**Status:** Xcel has replaced equipment on a nearby pole. The noise level is now back to the original level. The HF port is back on line. W6OAV is monitoring the HF port performance.

### Redesign Packet Gateway (W6OAV)

**Goal:** Re-design the gateway for more reliability.

**Status:** Kantronics sent a new firmware beta upgrade which W6OAV installed in the KAM XL TNC. (The original firmware occasionally caused the KAM to default to factory settings). Now that the HF port is back on line, W6OAV is monitoring the KAM's performance. W6OAV has obtained the proper cables and will begin wiring up an interface for a PK900 TNC. Should the KAM not perform properly, the PK900 will be installed in place of the KAM.

### Establish a DRC YouTube Channel (KB0A)

**Goal:** Provide access to various DRC videos.

**Status:** KB0A has obtained a channel. However, there's an issue with ownership. KB0A will resolve the issue and will forward the log-in info to the appropriate club officials.

### 220 MHz Repeater Down (W0GV)

**Goal:** Repair the repeater.

**Status:** N0ETV repaired the power supply and the repeater is back on line.

### Fusion Repeater Upgrade (KB0A)

**Goal:** Equip the Fusion repeater with a Wires-X Link unit to connect it to the Wires network.

**Status:** A temporary test link has been setup at KB0A's house. KB0A will begin gathering equipment for installing the Wires-X Link unit at Station 4.

*~ Editor's Note: The Technical Committee meeting is open to members of the DRC. It is held in the Arvada room, starting at 6:00 p.m. on the evening of the DRC monthly meeting.*

## EMCOMM QST

By Brennan Pate, KE0FBK

The Denver Radio Club's EmComm coordinators are in the process of getting together a list of members who would be interested in various EmComm related activities (i.e. siren tests, emergency response, weather spotting, etc.).

If you are interested in participating in a future activity(-ties), please email or call Mike Vespoli (KE0HFH), [mvespoli@gmail.com](mailto:mvespoli@gmail.com), (201-741-7756) or Brennan Pate (KE0FBK), [ke0fbk@outlook.com](mailto:ke0fbk@outlook.com), (619-993-8140). Or, you can simply take the EmComm survey found at this [LINK](#).

### APRIL MEETING PRESENTATION

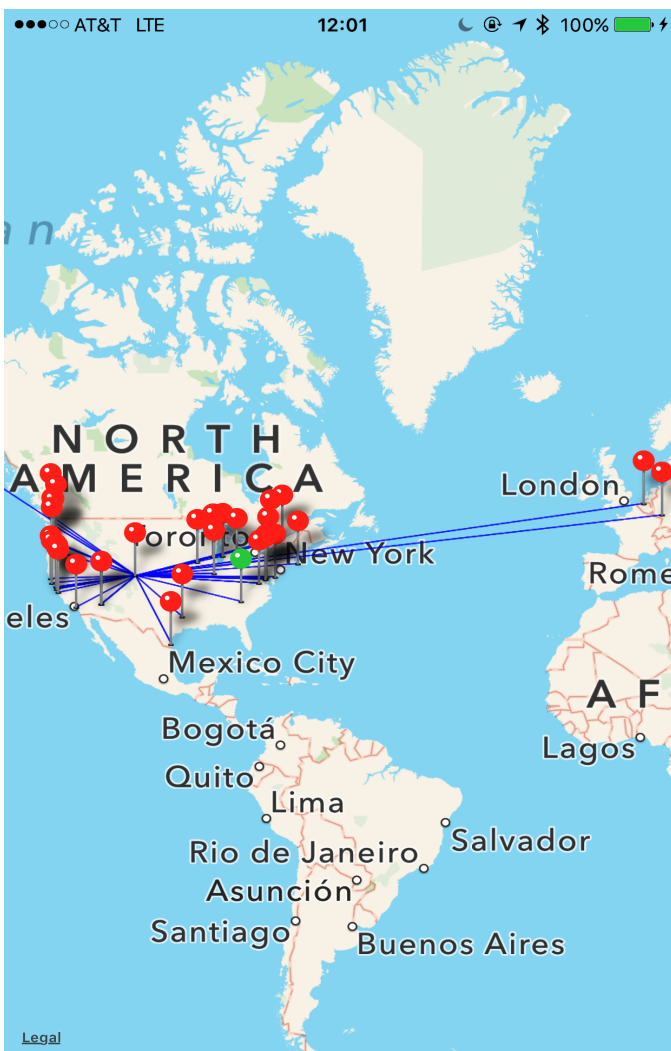
By Robert White, K0RCW

Comparing and contrasting portable antennas is always challenging because of the large number of variables.

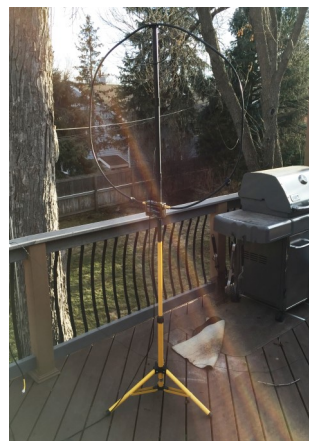
I chose to use the Weak Signal Propagation Reporter (WSPR) protocol and worldwide beacons to collect some data and to compare the commercially available Alex (Mag) Loop and the Buddistick from the BuddiPole Company.

The low power WSPR digital protocol provides a means to measure propagation and how well each of these antennas are "heard" in various configurations.

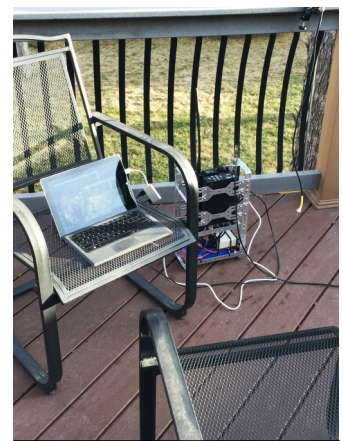
Both antennas will be on display during the meeting as well as the backpack rig I constructed to port my Yaesu FT-817, LDG Z-11 Pro Tuner, Signalink and a 12-amp hour LiFePo battery.



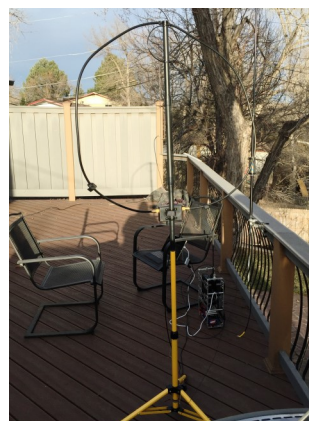
*Robert's Signal Reports*



*Mag Loop*



*Portable Station*



*Mag Loop w/Station*



*BuddiPole Coil*

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## MY HAM RADIO STORY

By Rick Ogden, N3RO

### ***How did you get interested in ham radio?***

I was 13 and the year was 1959. It was summer vacation time and I was bored. Poking around the basement, I came across an old Atwater Kent radio, broken and covered in dust behind the freezer. I dug it out and asked my mom if I could have it. She replied that I could, but it had been "broken" for a long time. I cleaned off the dust and wiped down each octal tube. There was no cabinet, just the radio, mounted on a metal chassis. I noticed some wires had broken loose and by careful inspection I could guess where they belonged. Using my dad's soldering iron, I re-soldered them to where I thought they should be. I connected up the large speaker, turned on the radio and held my breath. Little did I realize then that the next 10 seconds would change my life forever. With the luck of the angels that summer day, the radio came to life and all the octal tubes radiated a warm orange glow! I took the radio to my bedroom where I tuned the bands and listened day and night. It wasn't long before I heard a very strong AM voice signal on the short wave bands and realized it was an older teenager up the street, Pete, WA2BXK. I quickly went over to his house, having never really met him before, since he was about 4 years older than I, and knocked on his door. As we became friends over the following weeks, I began to quickly use his ham radio station (under his guidance) more and more. I studied theory from books he gave me and learned Morse code from W1AW code practice transmissions. (Pete loaned me a BC-348J receiver to copy W1AW). The following summer, Pete arranged for me to be tested and I passed both the Novice and Technician tests and became WV2WFL (novice) and WA2WFL (tech). So in 1960, by working summer jobs and saving every penny, I set up the station below. This was my station during my Junior and Senior high school years. In our neighborhood, all our dads worked for IBM (Poughkeepsie, NY) which was a constant source of scrapped computers, which in turn, provided a good supply of tubes by the hundreds, capacitors, resistors and other components that went into the early 1960's computers.

### ***What are your favorite activities in the hobby?***

My favorite ham activity is CW. When I enlisted in the USAF at 17 in 1960, because of my ham radio background, I was given a Top Secret clearance and sent overseas for the next 3 ½ years to intercept foreign CW coded transmissions. This activity increased my proficiency in CW to the point it became no different than speaking English. Throughout the last 56 years of hamming, about 80% has been on CW.

### ***What is your most memorable experience(s)?***

While it seems every day provides some sort of memorable QSO or activity, my most fond memories are a result of my heading up a VE team for over 10 years. I am always amazed when I run into a ham on the air and he remembers when I told him he passed his test or when he remembers visiting my ham shack, sometimes after 10 or 15 years have passed. How often we don't realize the impact we have on other people's memory of their start in ham radio.

### ***What is your background?***

My professional background has not been in electronics. My college degree, which includes an MBA in business, has provided a 45-year career in accounting. Most of that time I have been a corporate controller with such diverse companies as: microbiological research, computer services and electronic manufacturing. Tim Allen, on the TV series "Last Man Standing", isn't the first one to have a ham station in his office, I've pulled strings and managed to have one in my corporate office for the last 30 years or so.

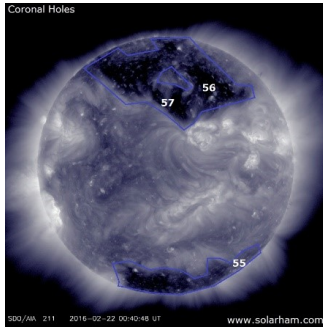
### ***What are your additional hobbies?***

My additional hobbies include: guitar playing, backpack/hiking, SCUBA diving and biking, I used to own motorcycles, but now just ride the pedal bikes.

**~Editor's Note:** As long as we have material, we will continue to publish a monthly column profiling DRC members' stories about how they got into the ham radio hobby, their interests and backgrounds. The purpose of this column is to introduce DRC members to each other and to find commonalities between them. Please participate by answering the questions as shown in the article above. We will publish in the order we receive them. Please use Microsoft Word set to Arial and 10 point and submit your story to [w6oav@arrl.net](mailto:w6oav@arrl.net). *Thanks to Rick for his story. You can catch Rick on the 449.350 repeater, coming in via Echolink from Fredrick, MD.*

# SOLAR UPDATE

PROVIDED BY FRED HART, AA0JK



## Week One:

March started out with geomagnetic conditions at low levels. This was expected to change as a narrow coronal hole (58) was turning into a geoeffective position. Elevated activity expectations were based on solar wind flowing from the coronal hole and forecast to reach us March 1<sup>st</sup>.

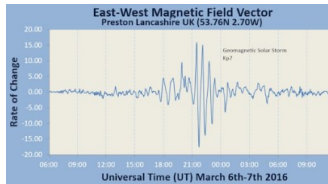
NASA's Solar Dynamics Observations noted a spit in the magnetic fields forming a 500,000-mile long magnetic canyon in the sun's atmosphere.



The canyon is depicted as a large linear feature vertically bisecting the solar disk. White arrows indicate solar wind spewing out into space. Such an opening is also called a "coronal hole." A stream of solar wind flowing from this coronal hole was expected to produce a 40% chance of polar geomagnetic storms.

## MAGNETIC REVERBERATIONS:

As a CME or a solar wind stream impacts Earth, the magnetic field reverberates as depicted in the magnetic Field Vector chart:



This plot shows the response of a magnetometer as the strong geomagnetic storm on March 6<sup>th</sup> and 7<sup>th</sup> passed the east-west vector of Earth's magnetic field.

## Week Two

Solar activity during the second week started out at low levels. A minor C3 solar flare was observed just beyond the east limb at 12:50 UTC March 10<sup>th</sup>. All visible sunspots, including newly assigned regions 2518 and 2519 were reported stable. No Earth directed coronal mass ejections were observed.

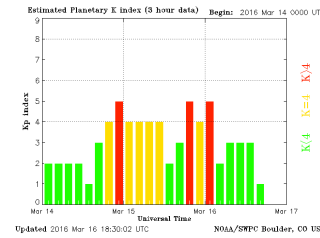
## Week Three

Solar activity continued at lower levels with no major events reported, although a filament eruption was spotted near the northeast limb by SDO, (Solar Dynamics Observatory) on the 13<sup>th</sup>.

A new sunspot numbered 2521 formed in the northern hemisphere and was reported as stable. March 15 and 16 saw Kp levels jump to 5 in the greatly disturbed index level range.

On the 16<sup>th</sup> during the High Noon Traffic Net, reports were coming in reporting the increased solar activity. These solar

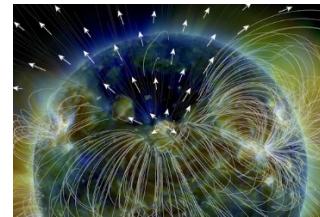
reports show the amateur radio community is aware of the importance of solar activity on radio communication.



High speed solar wind streams flowing from a southern hemisphere coronal hole went to geoeffective G1 storm levels. This solar storm was especially erratic due to the thin and patchy coronal hole driving the fast wind of the storm.

The magnetic fields solar wind stream had a negative polarity. This allowed it to link to the Earth's magnetic field, opening a crack in our planet's magnetosphere and allowing solar wind inside.

## Week four

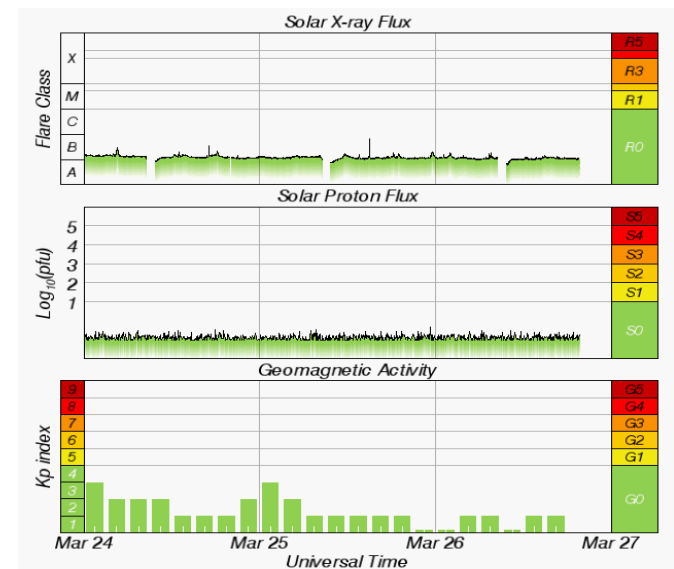


**EQUINOX SOLAR WIND:** A large hole was formed in the atmosphere above the sun's North Pole, and it was spewing solar wind into space. NASA's Solar Dynamics Observatory was monitoring the opening, colored deep-blue in the extreme ultraviolet image taken



on March 21<sup>st</sup>. The emerging stream was expected to deliver a glancing blow to the earth's magnetic field. At this time of year, a glancing blow like this can be enough to spark auroras and cause disturbances to radio communications. For reasons that are only partially understood, the weeks around equinoxes favor geomagnetic storms.

March 24<sup>th</sup>, Coronal hole expected to become Geoeffective. Solar activity might be at very low levels however, a large coronal hole was expected to become geoeffective during the upcoming weekend, enhanced activity was possible once a high speed solar wind stream from the coronal hole reached Earth.


## SPACE WEATHER OVERVIEW






*Do You Know  
How Your  
Antenna  
Radiates?*



**Bill Rinker - W6OAV**  
Will Answer Your Questions

**Why and How  
Do Antennas Radiate**

This is a non-mathematical forum which covers the nature of fields, charged particles in space and in wires, how antennas develop three fields, and how these fields propagate.



**HamCon Colorado 2016**  
May 13-15, 2016  
Keystone Conference Center  
Keystone, CO

Register Now at: [www.hamconcolorado.org](http://www.hamconcolorado.org)

### UNDERSTANDING ANTENNAS

PROVIDED BY BILL RINKER, W6OAV

### UNDERSTANDING ANTENNAS FOR THE NON-TECHNICAL HAM, A BOOK BY JIM ABERCROMBIE (N4JA)

This 74-page information packed book covers antenna theory, most antenna systems, design formulas, propagation theory, and much more. It can be downloaded for free, as long as it is used for nonprofit personal use, from: [Ham Universe](http://Ham Universe).

### WHEAT RIDGE AND LAKEWOOD SIREN TESTS

BY JIM BEALL, K0TOR

The Denver Radio Club will be supporting the City of Wheat Ridge siren test at 11:00 AM on Wednesday, April 13th. Wheat Ridge has 15 sirens plus 5 (tentative) other listening sites to evaluate siren coverage. If you covered a Wheat Ridge siren on last years siren test you will be contacted to cover this same site this year.

If you did not participate last year and would like to this year, please email me at [k0tor@arrl.net](mailto:k0tor@arrl.net), or telephone me at 303-798-2351. If I am unavailable, please leave me a message. We need additional radio operators to replace those that worked last year and are not available this year and we may have several new monitoring sites to cover this year.

We request that you be on site by 10:30 AM and the test is usually completed by 11:30 AM. For those who are available, we will meet for pizza and soft drinks following the siren test at the Wheat Ridge Police Department training room.

This is a great public service and a fun exercise. If you would like to help, please call, and thank you. We will also be supporting the Lakewood Siren test on Wednesday, May 11th.

So, please mark these dates on your calendar.

### DRC NEWSLETTER EDITORS

BY GERRY VILLHAUER, W0GV

We are looking for additional Associated Editors to assist in the development of the monthly club newsletter.

Candidates would be trained by the current Editor and Associated Editor to compliment the staff and contribute to our product.

I stress the point that candidates would be trained to become competent editors. Please consider helping with this important task. I believe it will be a very rewarding experience to contribute to the Round Table; which is the life blood of our growing club.

Please contact me with any questions. Gerry (W0GV) at [w0gv@hotmail.com](mailto:w0gv@hotmail.com) or my number listed on the DRC website. Thanks in advance!

**HAM SITE OF THE MONTH**

Propagation Reporter

View Reception Reports

#### TECHNICAL TIP FOR APRIL FIRST

As you may know, the doppler effect means that a mobile's signal appears higher in frequency to the repeater as the mobile approaches it and lower when the mobile recedes from it. Based upon this law, April's technical tip: if your mobile frequency is a little low, work the repeater only when approaching it. If your mobile frequency is a little high, work the repeater only when receding from it. For those of you who are proud of being right on frequency- you'll have to drive in circles around the repeater so that your distance from it doesn't change. Hope you had a happy April First.

Bill, W6OAV

**LEARNING NET REPORT**

PROVIDED BY FRED HART, AA0JK

In opening we would like to thank our net control operators for a great job in running the Learning Net. Your participation is greatly appreciated. Thank you to: Alex (W2PBR) Larry (K0LAI), and Gary (KD0SQA).



Learning Net and Yahoo Learning group topics discussed this past month of March:

- Vertically polarized horizontal slot antennas. (QST march 2016 p37). This modified dish antenna raised quite a lot of interest, on the Learning Net, and Ham Nation delved into the subject of slot antennas.
- Automatic Packet Reporting System (APRS).
- Mobile antenna mounts.
- Entry level HF radios.
- MFJ 2982 telescoping antenna recently acquired. Pros and cons to be discussed in upcoming nets.

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

If you are listening and don't yet have your license, you can contact us at the [W0TX web-site](http://W0TX web-site) , [w0tx@w0tx.org](mailto:w0tx@w0tx.org) or at [elmer@w0tx.org](mailto: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](http://YAHOO Learning Net) web page. 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 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 at 7:30 PM, on 145.490 or 448.625.

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



**The ARRL  
Rocky Mountain Division Convention**

**May 13-15, 2016**

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VE testing, fun contests and of course the Wouff Hong ceremony.**

**Registration Now Open!**

**REGISTER AT: [www.hamconcolorado.org](http://www.hamconcolorado.org)**

## LOOKING BACK AT THE DRC PROVIDED BY WOODY LINWOOD (W0UI) ROUNDTABLE, DECEMBER 1960

Before cable and satellites, interference to TVs (TVI) was a real issue for hams.

## EDITORIAL

After being accused of maintaining the notion that TV's gotta go, an idea was born. Why not give some facts and comments.

Last month's issue of the Round Table listed members of the local TVI committee.

First, we would like to take a few lines to thank the participants of said committee for taking their time (which could have been consumed operating or building) to assist the TV viewers in locating their troubles.

The TVI committee reports that the cooperation of both the complainant and amateur has been most gratifying. (With only a small percentage of deviation.)

A case of TVI was reported to the F.C.C. which in turn notified the TVI chairman, non other than Walt Gardinier, KØCLJ. Walt called for an appointment to check his set. The complainant quickly replied, "you knock on my door and I'll shoot you." Needless to say "Walt didn't insist." With that in mind the problem was still ironed out.

A Denver TV viewer reported "ham interference," but when the TVI committee of the Denver Radio Club checked the trouble, the party was found to have no trouble when not "rocking." The automatic rocking chair had a motor that was the culprit.

In Pueblo a ham put up an antenna. The neighbor reported TVI to the committee. The problem was discussed and found to have a white line across the picture tube. When asked at what times does it appear? Answer—all the time that it's on. Question—What about when the ham is listening? Answer—Oh, I never thought about that. I just saw the antenna and figured it was his fault.

There are some cases of BCI. Always found to be AC/DC sets. The question is this—why spend \$12.50 for a line transformer when the set only cost \$9.95 new. That's really not our worry, if people buy BC receiving sets *not* of good engineering design. But yet we get calls.

I wonder how many people call the Air Force when a plane goes overhead and drives the TV batty? Or who calls Detroit

when a car goes by with a lot of ignition noise?

We know these cases persist. I know, I can hear certain makes of automobiles spark gap for blocks but I do not have TVI from my own rig and my TV antenna is six feet under and on the same mast with the 15 meter dipole.

The suggestion was made to the complainant to install a hi-pass filter. Walt called the party a few weeks later to see if it had been done and all was serene. Yes, it had been done but the party was going to take it off because she was lonesome.

At the moment things are quiet. The week after sweepstakes, calls got to Walt at the rate of two or three per day. This is believed to be the "hangover" from the hectic contest. Involving 21 Mc IF strips.

Last Christmas there were cases where the blinking circuit of Christmas tree lites were causing TVI. We expect the "ham" to be blamed again this year.

One case of TVI was blocking out TV's in a four block area. Seems as though the complainant was an electronics man and had applied higher voltage to take care of a larger picture tube he had installed. Editors note—If he was that good in electronics, you would think he could find his own trouble. He was causing TVI to his neighbors, too. "Make a ham out of him."

Of all the complaints investigated, more than 98% are *not* at fault of the ham. In general, the amateur wants to know if he has a sour signal and is anxious to clean it up at once.

In TVI relations it must be remembered, the TV set is a part of the family, therefore must be discussed as such, and in a tactful manner before you say, "it's possibly your television receiver."

It goes without saying, the DRC TVI Committee enjoys and deeply appreciates the cooperation it has received from the F.C.C. engineers.

One woman insisted that an amateur was fouling up her TV. The district engineer said it was the TV set. The man of the house was contacted later and reported that he had invited the ham in for a chat and he fixed my television.

The club could still use more volunteers and another portable TV set. This would lighten the load for the present group over a wider area.

L. C.

Page Three

*This puzzle is provide courtesy of Chris Codella - W2PA. The URL for his website is <http://www.w2pa.com>. The solution for the puzzle is on page 13.*

**Prizes**

**Across**

- 1. A6 dignitary
- 5. A ham does it every 10 years
- 11. CW approx.
- 14. Twenty one hundred time
- 15. Made up (for)
- 16. Icom xcvr name part
- 17. Five score since '45
- 18. VO1 ATC locale
- 19. Term. label
- 20. Experiment place
- 22. Some retirement sums
- 24. Upgraded 67-across
- 28. Small, medium or large
- 29. Director Howard
- 30. Next Elecraft rig?
- 31. Worked All follower
- 32. Creative spark
- 34. Apr. addressee

- 35. Speaks or moves with lightness
- 36. With 38-across, a more difficult 17- or 67-across
- 38. See 36-across
- 39. Ease
- 41. W9 area net
- 42. Bid place
- 46. Molecule parts
- 47. Kind of cycle
- 49. W6 to VO1 dir
- 50. Alka-Seltzer sound
- 51. Worked All follower
- 53. Window, so to speak
- 55. Overload ctrl. ckt.
- 56. 17-across unit (abbr.)
- 57. Excite

- 60. Portal site
- 63. Downed
- 64. Parallel partner
- 65. Give up
- 66. Young OM
- 67. Worked All follower
- 68. Angular subj.

**Down**

- 1. Dipole current node location
- 2. Early polar-exploring ham Don
- 3. Slope
- 4. A radio restoration process, among others
- 5. Part of RCC
- 6. Flight board abbr.
- 7. Perplex
- 8. Make beloved

- 9. Pipsqueak
- 10. Newfangled rcvrs
- 11. Designate, as an ORS or OBS, say
- 12. Coats in metal
- 13. Coin flips
- 21. Zero on a res.
- 23. Wagnerian heroine
- 24. Prefix with -band
- 25. Grounder
- 26. Cook Islands prefix
- 27. Minute opening
- 31. Inp. imp.
- 33. Spkr. drivers
- 35. KH6 island
- 37. "\_\_\_ alive!"
- 38. W3 metro. area
- 39. W4 metropolitan area

- 40. Amplified
- 41. Feedline pipe
- 43. Paddle peddler
- 44. Sig. catcher
- 45. C on A1
- 46. Attraction
- 47. XE state bordering W7
- 48. Genetic inits.
- 51. Shift 6
- 52. Bumper sticker word
- 54. Low frequency
- 58. Five-dit word
- 59. Triple dit
- 61. Log file type
- 62. Milligig?

1	2	3	4		5	6	7	8	9	10		11	12	13
14					15							16		
17					18							19		
		20		21		22					23			
24	25				26	27					28			
29				30						31				
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	39	40					41				42	43	44	45
46						47				48		49		
50					51						52			
53				54						55				
56				57				58	59		60		61	62
63				64							65			
66				67							68			

**FACT OF THE DAY**

**Antenna Capacity Tops**

A grounded (or low-impedance base-fed) vertical antenna can be fitted with a capacity top (also called a capacity hat) to lower its resonant frequency. The capacity top can be a sphere, cone, inverted cone, cylinder, disk, spider, or ring with little electrical difference if dimensions are adjusted to provide the same top capacitance. Capacity tops without rotational symmetry, such as T or inverted-L shapes, also can be used with little difference in performance, so long as the top elements are relatively small compared to the height of the vertical radiator. In all these cases, the current distribution in the vertical radiator at resonance is nearly identical to the current distribution that would exist in the same portion of a longer vertical radiator at resonance if a capacity top was not used. ©2005 Martek International All rights reserve.



**~ Ham Tip ~**

If you have knowledge of a **GREAT** ham radio related website or just a general tip, let us know and we will share it with the rest of the DRC membership here in the RoundTable. Send to [n0hi@arrl.net](mailto:n0hi@arrl.net).

**THE ROUNDTABLE ARCHIVE**

Scan the QR code or go to <http://www.w0tx.org/RoundtableAccessPage.htm>

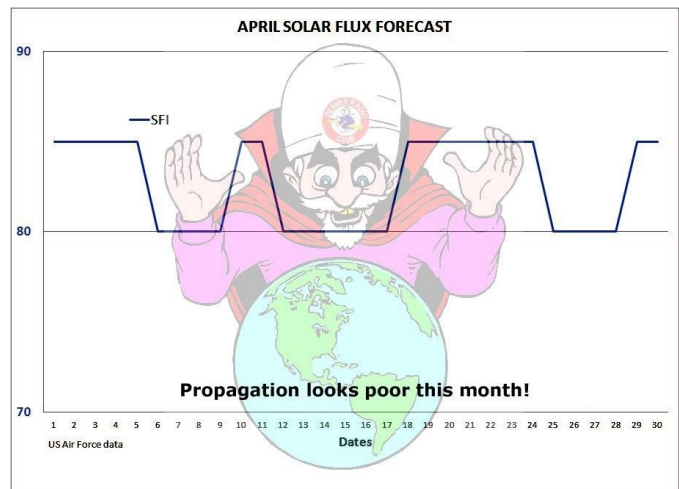
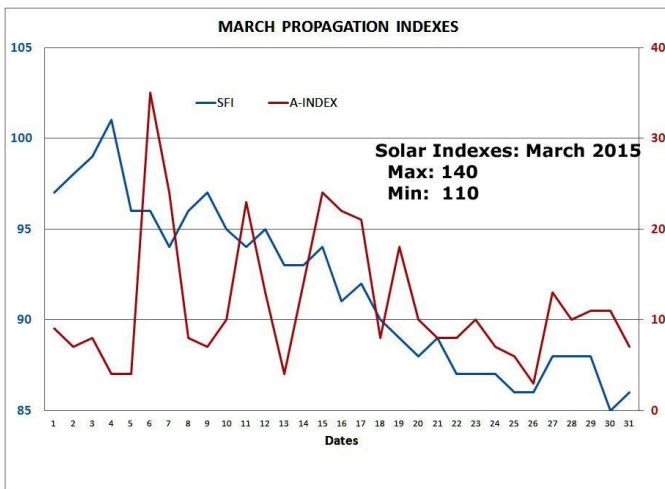


**PAST & FUTURE PROPAGATION CONDITIONS**

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/RoundtableAccessPage.htm>.



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## UPCOMING EVENTS

### HAMFESTS & CONVENTIONS

Event	Date	Location	Sponsor Website
Rocky Mountain Division Convention	05/13/16	Keystone, CO	<a href="#">HamCon Colorado</a>
MARC Tailgate Party	06/04/16	Delta, CO	<a href="#">Montrose Amateur Radio Club</a>
PPRAA Megafest	07/09/16	Monument, CO	<a href="#">Pikes Peak Radio Amateur Association</a>

## UPCOMING ARRL CONTESTS

[ARRL CONTEST CALENDAR](#)

Contest	Start Date	Start Time	End Date	Stop Time	Notes
<a href="#">Rookie Roundup - Phone</a>	04/17/2016	1800 UTC	04/17/2016	2359 UTC	
<a href="#">June VHF</a>	06/11/2016	1800 UTC	06/13/2016	0259 UTC	
<a href="#">Kids Day</a>	06/18/2016	1800 UTC	06/18/2016	2359 UTC	
<a href="#">Field Day</a>	06/25/2016	1800 UTC	06/26/2016	2059 UTC	
<a href="#">IARU HF World Championship</a>	07/09/2016	1200 UTC	07/10/2016	1200 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
Mississippi	04/02/2016	04/03/2016	<a href="#">ARRL Mississippi Section</a>	
Missouri	04/02/2016	04/03/2016	<a href="#">BEARS – St. Louis</a>	
Georgia	04/09/2016	04/10/2016	<a href="#">Georgia QSO Party</a>	
New Mexico	04/09/2016	04/10/2016	<a href="#">Santa Fe Amateur Radio Club</a>	
Michigan	04/16/2016	04/17/2016	<a href="#">Michigan QSO Party</a>	
Ontario	04/16/2016	04/17/2016	<a href="#">Contest Club Ontario</a>	
North Dakota	04/16/2016	04/17/2016	<a href="#">North Dakota</a>	
Nebraska	04/16/2016	04/17/2016	<a href="#">QCWA Nebraska Chapter 25</a>	
Florida	04/30/2016	05/01/2016	<a href="#">Florida QSO Party</a>	
Montana	05/07/2016	05/08/2016	<a href="#">Central Oregon DX Club</a>	
Washington	05/07/2016	05/08/2016	<a href="#">Central Oregon DX Club</a>	

**DRC REPEATERS**

BAND	Freq / Shift / PL Tone	Additional Information
6m	53.090MHz (-1MHz) 107.2Hz PL	
Packet	145.05MHz<>14.105MHz	<b>2 meter / 20 meter gateway. Useable by Technicians on 2 meters. See January 2015 RT.</b>
2m	145.490MHz (-) 100Hz PL	<b>Linked to the 70cm - 448.625MHz machine.</b>
2m	147.330MHz (+) 100Hz PL	<b>Local Area, Members Auto-Patch Does Not TX a PL!</b>
2m	147.330MHz (+) 131.8Hz PL	<b>Test Mode Operation. Send signal reports to Tech Committee.</b>
1.25m	224.380MHz (-) 100Hz PL	
70cm	447.825MHz (-) DCS~073; NB 12.5; +/- 2.5	<b>Saint Anthony's Note: This is a narrow band repeater requiring DCS.</b>
70cm	448.625MHz (-) 100Hz PL	<b>Linked to the 2m - 145.490MHz machine.</b>
70cm	449.350MHz (-) 100Hz PL	<b>Wide area coverage with Echolink Node # 4140.</b>
70cm	449.775 MHz (-) 100Hz PL	<b>Yaesu Fusion Digital / Analog, 100 Hz Tone Required for Analog.</b>
70cm	446.7875MHz (-)	<b>MotoTRBO Repeater   Slot 1 – DMR-MARC WW, Slot 2 – Local</b>



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<b>APRIL 2016</b>		<i>DRC Net Sunday's at 8:30 p.m. on 145.490 / 448.625 (No PL)</i>				
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1  Happy April Fool's Day! 	2
3	4	5	6 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	7   New Moon	8	9
10	11	12	13 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)  Wheat Ridge Siren Tests  First Quarter	14	15  	16
17 ARRL Rookie Roundup - Phone Begins 1800 UTC Ends 2359 UTC	18	19	20 DRC Meeting Elmer 6:00 p.m. General 7:00 p.m.	21   Full Moon	22	23
24	25	26	27 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	28	29    Last Quarter	30



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**~ GET PUBLISHED ~**

We welcome and encourage all members to share their experiences and stories so that we can all learn from one another. It can be long or short. If we can't fit it into one newsletter, we can split it across multiple issues. Not a writer? We have volunteers that will listen to your story and put it into an article, and of course you will have the opportunity to review and approve prior to publication. Your contribution to the club is welcomed and appreciated. ~Editor

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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 [n0hi@arrl.net](mailto:n0hi@arrl.net). The submission deadline is the 20th of the Month. ~ Editor