



ROUNDTABLE

The Denver Radio Club Newsletter

Since 1917

December 2018

PRESIDENT'S MESSAGE

BY GERRY VILLHAUER, W0GV

Hello DRC Members,

Cathy and I would like to wish all of you a very Merry Christmas and a blessed holiday season. We hope all your wishes come true. Maybe even that new radio under the tree!

Since we did not have a meeting in November, there is nothing to report. I will tell you that Bill Rinker (W6OAV) is back after a long break for health reasons and, he has a great line-up of programs scheduled for the first few months of 2019. Welcome back Bill!

The big news now is our annual DRC Christmas/Holiday Party that will happen just a few days after this issue hits the street. I hope by now, with all the promotion we have put forth to "get the word out" everybody is aware of the date, which is Wednesday, December 5th. We will have a great dinner, prize drawings and a very informative general interest program; no technical ham stuff. And of course, lots of time to socialize with people you may have not seen for a year or more.

The deadline for reservations was November 28th. We will NOT sell dinner tickets at the door! If for some reason, you did not get your reservation in, you are still welcome at the party for all the other activities.

Our program will be presented by Mr. Chris Kissner. His presentation is titled "Personal Preparedness/Prepping" Chris has given his presentation for several years to groups of 20 to 1000 people. It is his passion to inform people how to be prepared in case of emergency or catastrophes. Some of the subject areas he will cover, with scenarios, are from basic, regular events to life-changing catastrophes. Some examples of the subjects he will cover are Water: how much do you need? Food: How much? How to store? How to cook? Shelter: How to reinforce? How to repair? How to stay warm? Electricity and Fuel: What to do when the power goes out? When the gas goes out? Communications: What and how? Defense: Defending your house and defending yourself. And more! We promised you a non-technical program and I am sure you and your guests will leave the party much better informed on these subjects, which many of us have never given a second thought. In this changing world we live in, being better prepared, could be life saving for you and your loved ones.

The Holiday Party on December 5th will be our only meeting in December...NO MEETING on December 19th.

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



73 for now,
Gerry (W0GV)
President

The DRC needs you!

Please contact W0GV (w0tx@w0tx.org) if you are interested in helping with:

Tower climbers for antenna maintenance: Training will be provided by our experienced tower climbers.

Chairperson for DRC Field Day in 2019: Assistance and guidance will be given to new chairperson. You will have help.

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:

Henry Reeve - KE0RJU	Brad McDowell - KE0SYJ
Jonathan Hall - KE0SUM	Kimberley MacLeod - KD0TKW
Luis Uribe - KD0FKI	Michael MacLeod - K0ALE

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

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

Status: WWOLF has sent a letter to the TSA describing the services that the DRC can provide and recommendations for the communications equipment and antennas. The TSA has responded with an MOU which the DRC is reviewing.

Station 4 Remote Power Control

Goal: Install Internet controlled power outlets.

Status: WG0N has installed an Internet controlled outlet power strip at Station 4. The equipment will be reconfigured and the system tested ASAP.

Fusion Repeater WIRES Interface

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

Status: Pending

Check Station 4 and Squaw Antennas

Goal: Inspect antennas before winter sets in.

Status: WG0N will check antennas ASAP.

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.

LEARNING NET REPORT

BY FRED HART, AA0JK



Thanks go out to our Net Controllers: Doron (K1DBC), and Fred (AA0JK).

The following topics were discussed this past month:

- Power Supplies - linear vs switch-mode. Power Supplies Explained, ISBN:978-1-91019-364-8: <https://www.eham.net/ehamforum/smf/index.php?topic=43091.0>
- Six Meter Home-brew Antennas: How to Build a Six Meter Ham Radio Dipole Antenna by K7AGE https://www.youtube.com/watch?time_continue=2&v=4K5Vj6wtpE0
- DRC Repeater, Six Meter operation set-up.
- Antenna Tuners – Using internal vs external tuners.
- Antenna Front to Back Ratio by W1GV: <https://youtu.be/Od7wCBbt2qI>
- Ham Radio Simplex Frequencies: <http://www.algissalys.com/amateur-radio/ham-radio-simplex-frequencies-for-2-meter-70cm-and-more>
- EOC High Water – Flood Exercise in Lakewood

Great topics from our group. We certainly enjoy everyone’s participation. Thanks to all. If you are listening and don’t yet have your license, you can contact us via w0tx@w0tx.org or elmer@w0tx.org.

We are always looking for additional net control operators. If you would like to participate we can help you with the basics of becoming a net controller. This is a great opportunity to learn and get experience running a net.

Net controllers are always needed to perform Emergency Communications services. In the event of emergencies such as floods, fires, or other public service, the amateur radio community is always ready to help. If you have an interest in participating, when the need arises, learn and train now to be prepared. For additional information contact our EmComm Coordinator: Mike Vespoli (KE0HFH) at em-comm@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,

Fred
AA0JK

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.

SOLAR UP-

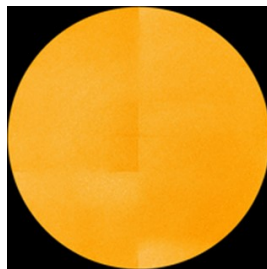
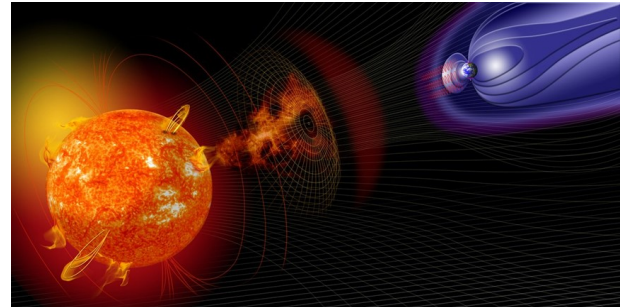
PROVIDED BY FRED HART, AA0JK

DATE

Solar Indices: Solar Flux A, K, Kp Index. As the radiation from the Sun is the major influence on the ionosphere, solar indices including the solar flux, A index, Ap index, K index, and the Kp index, are all important in predicting the state of the ionosphere and HF ionospheric radio propagation.

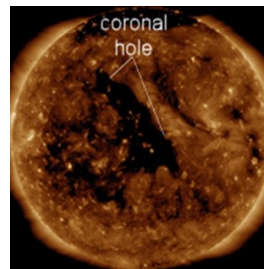
November 1st - Polar geomagnetic unrest. Earth was entering a minor stream of solar wind. The encounter would not spark full-fledged geomagnetic storms.

The Sun disc was blank, No sunspots.



Credit: SDO/HMI

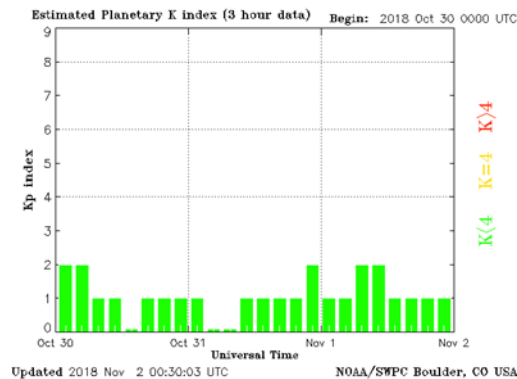
Solar wind flowing from this to reach Earth on November magnetic storms.



Credit: SDO/AIA

large 3-4, pos-

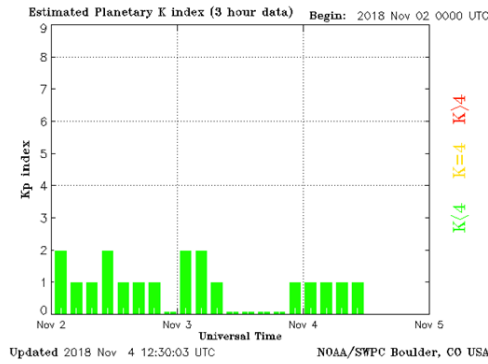
coronal hole was expected sibly causing G1-class geo-



Most of the time, space weather is of little concern in our everyday lives. However, when the space environment is disturbed by the variable output of particles and radiation from the Sun, technologies that we depend on in our daily life, in space orbit, as well as on the ground, can be affected. Some of the most dramatic space weather effects occur in association with eruptions of material from the solar atmosphere into interplanetary space. Thus, our space weather is a consequence of the behavior of the Sun, the nature of Earth's magnetic field, atmosphere, and our location in the solar system. The increasing deployment of radiation-current, and field sensitive technological systems over the last few decades, and the increasing presence of complex systems in space, combine to make society more vulnerable to solar-terrestrial disturbances. This has been emphasized by the large number of problems associated with the severe magnetic storms between 1989 and 1991 as the 11 year solar activity cycle peaked.

<http://spaceref.com/spaceweather/>

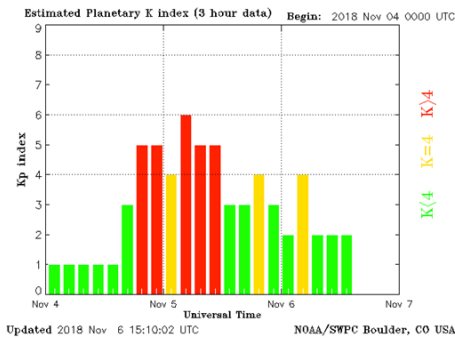
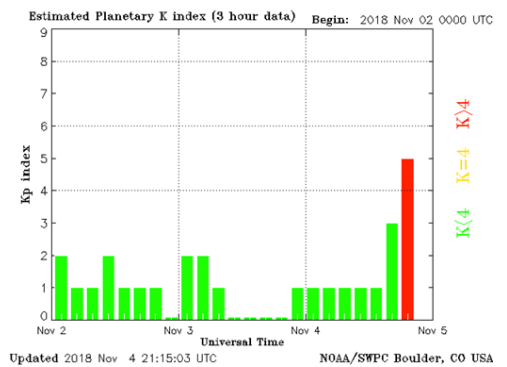
November 4th



Later than expected, a coronal hole stream containing a predominantly south pointing Bz, was moving past Earth. Enhanced geomagnetic activity was expected during the following 24 hours.

Geomagnetic K-index of 4 Threshold Reached: 2018 November 04
1934 UTC Synoptic Period: 1800-2100 UTC

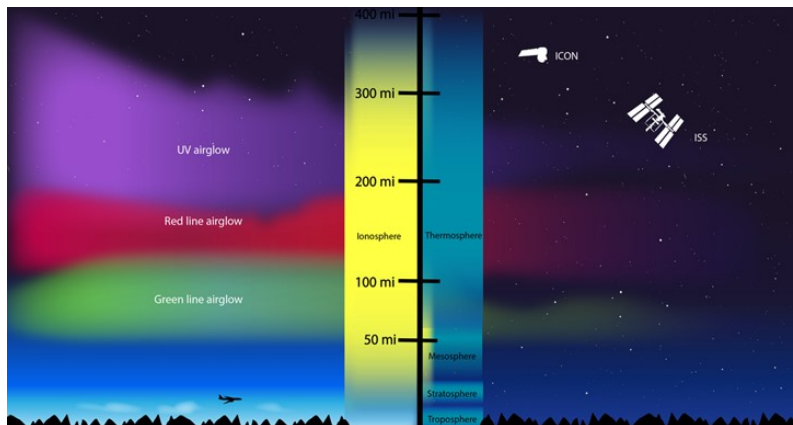
The solar wind had arrived: Almost a day later than expected, Earth was entering a stream of solar wind flowing from a large hole in the Sun's atmosphere. Minor G1-class geomagnetic storms were forecast after night fall, November 4th .



Green - Stable/Calm Magnetosphere. [4] Yellow - Unstable Magnetosphere. [5+] Red - Geomagnetic Storm Conditions

TWO MISSIONS WORKING TOGETHER

GOLD, from its vantage point in geostationary orbit over Brazil, gets a full-disk view of the same region of space that ICON studies, helping scientists connect the big picture with the details. NASAICON / NASAGOLD.



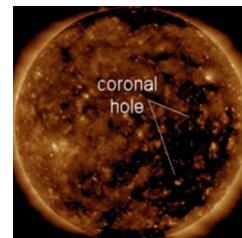
ICON orbits about 360

miles above Earth,

near the upper reaches of the ionosphere. From this vantage point, ICON combines remote measurements with direct measurements of the material flowing around it to connect changes throughout this region. NASAICON. <https://twitter.com/i/status/1059502355165589506>

November 6th - The Sun was blank. No sunspots. Credit: SDO/HMI. Spotless Days, Current Stretch: 19 days.

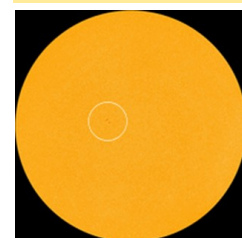
November 11th - Earth was inside a stream of solar wind flowing from this large coronal hole.



Credit: SDO/AIA

(Nov 11 1007UTC) The first solar wind impact occurred and barely produced a Kp4 event. Further streams were expected, since the coronal hole was very wide. The 2nd impact was forecast to produce further instability and storm conditions. Solar flare risk was very low.

November 12th - (0952UTC) Solar wind had stabilized, along with geomagnetic conditions. New sunspots were born facing earth but they failed to develop to any flare-making risk, and were decaying.



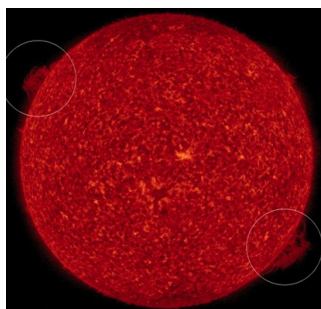
Credit: SDO/HMI

A new sunspot (AR2726) was growing at the circled location.

The new sunspot Broke a string of 24 spotless days.

November 13th - 24 hr Summary: Solar activity was very low. A rapidly changing spot-group emerged near center disk, and was numbered Region 2726 (N06W01, Bxo/beta), but had nearly decayed to plage. No Earth-directed CMEs were observed in available satellite imagery.

Forecast: Solar activity was expected to continue at very low levels on 13-15 November.



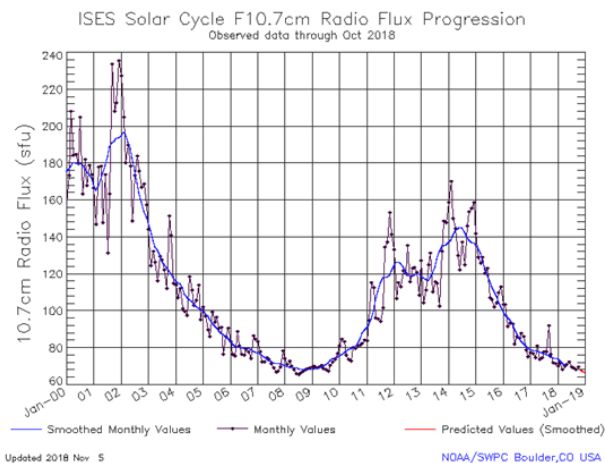
Exiting the solar wind: Earth was exiting a stream of solar wind that ignited an explosion of almost-mythical aurora activity over the Arctic Circle on November 10th and 11th . Another stream of solar wind was coming. Estimated time of arrival, November 18th .

The face of the Sun was almost completely blank. Not so the edge. Two of the largest prominences in years were dancing around the solar limb, shown here in a November 13th image from NASA's Solar Dynamics Observatory.

Prominences are clouds of glowing-hot plasma held above the Sun's surface by strong magnetic fields. These two were in a state of constant motion, meaning they could be on the verge of collapse. Debris from collapsing prominence's can hit the stellar surface below, triggering a Hyder flare, a type of solar flare that does not require sunspots.

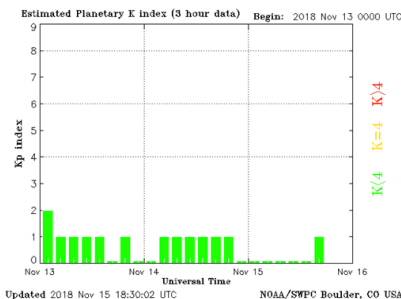
Radio Flux Progression - Usually we can judge solar activity by sunspot number and solar flare magnitude, but sometimes that is not the case. The sunspots can be inactive or the flares can be on the side of the Sun, There could be filament, coronal hole, nano flare or other activity. The radio flux is a great all-around measurement of activity.

Radio flux definition: Flux means the flow of some property through a given area in a given amount of time. The 10.7 solar radio flux is a measure of the solar flux density (amount of solar energy per unit area per unit time) at the 10.7cm wavelength observed at the Earth by radio telescopes called flux monitors.



Learn about Space Weather with the SUN SERIES: Solar Wind Introduction, Sun Series 1 @ https://youtu.be/kZ6HSPkF8U?list=PLHSoxioQtwZcJj_9clLz7Bggso7qq2PDj

November 15th - (Nov 15 0954UTC) All space weather was quiet. A new sunspot group was born overnight on the earth-facing half of the Sun, but had failed to flare. The stream from the coronal hole would not arrive for 2 to 3 days.



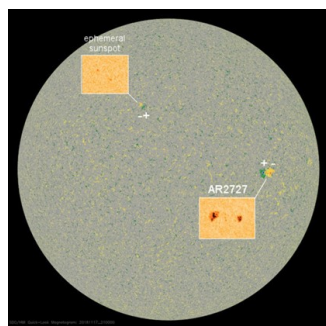
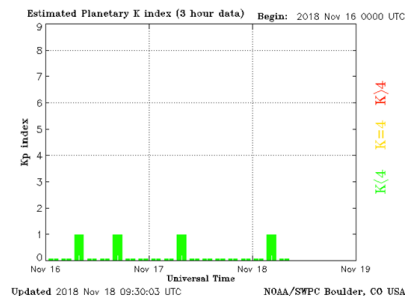
Solar activity remained at very low levels. Region AR2726 was nearly spotless, while another small sunspot was forming behind it at middle latitude. There were no geomagnetic storms expected.

There were no sunspots for 26 days, from October 18th to November 12th.

Does this place us near the bottom of the sunspot cycle? Perhaps, or somewhere toward it. Look at sunspot numbers in 2008-2009, during the last solar minimum, and note the long periods with no sunspots.

November 17th - (Nov 17 1004UTC) The next sunspot group was crackling but not producing solar flares. Solar wind was calm but expected to intensify when a Coronal hole stream arrived.

November 19th - Exciting News. The Sun has produced two new peeks at the coming solar cycle 25. A short-lived solar cycle 25 sunspot appeared momentarily on November 9th, another on November 17th. Although these regions didn't last long. Even though momentary, these back-to-back regions were the strongest sign yet that solar cycle 25 is on the way.



A SUNSPOT FROM THE NEXT SOLAR CYCLE

Such an occurrence is hardly unusual during solar minimum when sunspots are naturally small and short-lived. However, this ephemeral sunspot was noteworthy because its magnetic field was reversed.

Sunspot AR2727 is a member of decaying Solar Cycle 24. Compare its magnetic polarity to that of the other, unnumbered sunspot. They are opposite. According to Hale's Law, this means they are from different solar cycles. The brief sunspot appears to be a harbinger of Solar Cycle 25.

Dynamics Observatory with visible sunspots inset

Solar cycles always mix together at their boundaries. Ephemeral sunspots from Sunspot 25 have already been reported on December 20th, 2016, and April 8th, 2018. Now add November 17th, 2018 to the list. The slow transition between Solar Cycle 24 and Solar Cycle 25 appears to be underway.

November 20th - A magnetically reversed sunspot appeared in the Sun's northern hemisphere. Its high latitude and "backwards" magnetic polarity mark it as a member of the next solar cycle. Is Solar Minimum over? Not even close, but this development does suggest that Solar Cycle 25 is stirring.

November 21st - SOLAR MINIMUM CONDITIONS ARE IN EFFECT: The Sun was blank again, the 191st day of 2018 that the Sun has been without spots. To find a similar stretch of blank Sun's, you have to go back to 2009 when the Sun was experiencing the deepest solar minimum in a century. Solar minimum has returned, bringing

extra cosmic rays, long-slating holes in the Sun's atmosphere, and strangely pink auroras.

November 25th - Prepared jointly by the U.S. Dept. of Commerce, NOAA, Space Weather Prediction Center.
UPDATED 2018 November 25 0030 UTC

24 hr Summary: Solar activity continued at very low levels. Region 2728 (N06W03, Bxo/beta) was absent of significant flare activity. No Earth-directed CMEs were observed in available satellite imagery.

Forecast: Solar activity was expected to continue at very low levels on 25-27 November.

73,

Fred
AA0JK

WHISTLING ON THE RADIO

BY CROCKETT GRABBE, KF5LTT

(SUBMITTED BY BILL RINKER, W6OAV FROM THE AARC OVER – AUSTIN RADIO CLUB)

It was World War I and the early days of radio. German engineers erected a large ground-loop antenna for intercepting enemy telephone signals. What they hear when tuning up into the kilohertz frequencies was unexpected: a whistle descending downward in frequency. They suspected these signals as Allied code. What did they mean?

However, after World War I ended with the November 1918 Armistice, no such Allied code was revealed. When German radio engineer Birkhausen continued to study what was later named "whistlers", he concluded that was being generated from some source naturally. So begin the early detective work as to what was causing those radio emissions.

What caused these whistlers was still unknown in World War II. But the solution was finally revealed in a paper published by Swedish scientist Storey in 1946. These were radio waves generated by lightning strokes that propagated on the Earth's magnetic field line, often travelling in seconds to the opposite hemisphere and bouncing back on the magnetic field line going in the opposite direction.

The wave can be heard as this downward falling tone on the radio -- a descending "whistle". For radio waves that travel to the opposite hemisphere and bounce, a sequence of 3 descending "whistles" is heard, descending at a faster pace than the single whistle.

Whistlers lie in the frequency-range of 1 to 30 kHz, so are generally not heard by Ham enthusiasts today, who operate at much higher frequencies. However, these emissions are picked up on low-frequency bands by satellites all over the world, and continue to provide data to scientists on atmospheric conditions and magnetic field strengths.

For anyone using a receiver and picking up these low frequency whistles, s/he can think of this as the lightning speaking. It can speak volumes on the radio.



The Denver Radio Club
is an ARRL Special Service Club

Support your hobby and join the
ARRL today!

<http://www.arrl.org/>



LAKWOOD SIMULATED FLOOD EXERCISE, 11/1/18

BY JIM BEALL, K0TOR

Several years ago, Wheat Ridge and Lakewood Emergency preparedness personnel had identified a need for a response plan for potential flood threats. The areas identified were related to area reservoir overflow. This area of concern was discussed with Jesse Miller, Lakewood's Emergency Coordinator. Jesse agreed a simulated exercise should be planned and conducted. Jesse had a planned "Table Top" exercise scheduled for 11/01/18 that would address design changes/upgrades in the spillway and gate valve at the Maple Grove reservoir. Jesse asked if DRC could support a simulated flood exercise in parallel with their "Table Top" exercise. These two exercises would be independent.

We put out a call for volunteers who would be interested in supporting a simulated exercise. We received an excellent response. Brennan Pate (AD0UZ), organized the volunteers and assignments.

We selected four reservoirs within approximately one square mile of each other. The four were Main, East, Smith and Kendrick. They are located in the area of West Florida Ave. and South Kipling Parkway.

Prior to the simulated exercise we needed to visit the reservoirs and identify safe observation sites that would provide a good overview of the reservoir and water level in case of an actual flood. Kevin Schmidt (AD0GX), provided some suggested monitoring sites with GPS coordinates. A personal visit was made and monitoring sites identified with spillway locations and areas of concern observed.

The following people were assigned to these reservoirs; MAIN: John McGill (KE0RVZ), Jim Little (W0JSL), EAST: Kenny Bishop (KE0CNS), Michael Warner (KC0BMC), SMITH: Dave Haan (AA0DH), Ryan Fitzjarrell (K0LRF), KENDRICK: Axel Sjogren (W0GKR), Leon Siefken (N0GWM). Fred Hart (AA0JK) and Jim Beall (K0TOR) served as net control in the Lakewood EOC. Reports were received from each radio operator at each of the Reservoirs.

As expected, a great amount of very valuable information was obtained from this simulated exercise. These included the close proximity of residences adjacent to these reservoirs, spillways and dikes; need for improved monitoring of reservoir water levels; accurate elevation levels for spillway thresholds, dike thresholds and selected monitoring locations; estimates of many related factors including area of rain/snowfall collection upstream, time for water flow to enter reservoirs, capacity of reservoirs, time until reservoir overflow. This is some of the key information needed to determine time for warning area residents. There was much more learned from this exercise, showing it was a very valuable exercise.

In discussing our results with Jesse Miller, we plan to meet with key Lakewood personnel and review the results of our exercise in the first part of 2019.

We thank all those who supported this simulated exercise and provided their insight.

LAKWOOD RESERVOIR EOC EXERCISE, 11/1/18

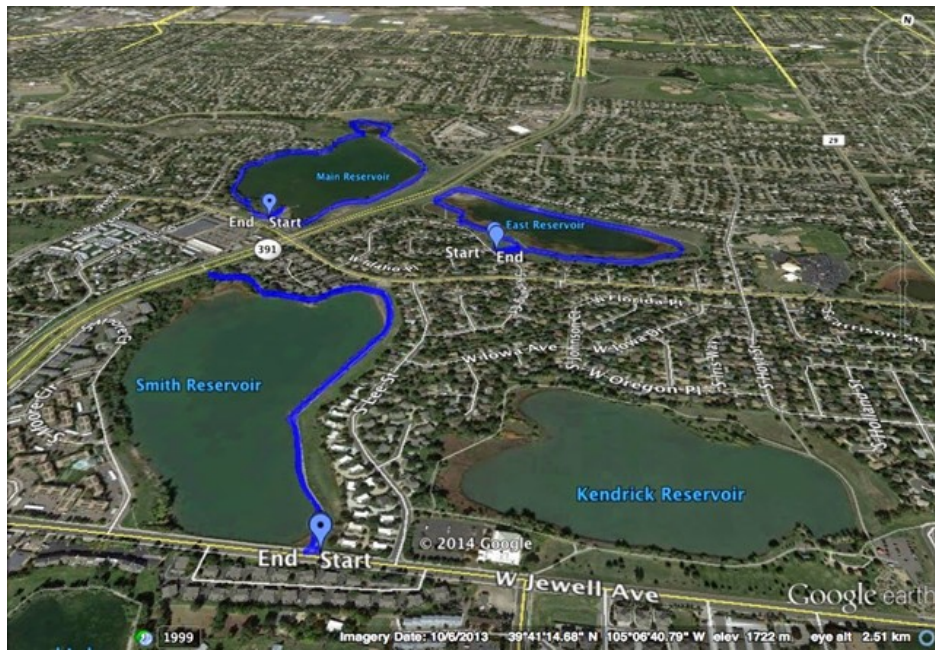
BY FRED HART (AA0JK)

Denver Radio Club Hams step-up to provide emergency response for Advanced Hydrologic Predictions, and for possible problems effecting surrounding life and property.

It might be prudent to look back on past history, and evaluate present flood-prone areas of today. It just takes one storm to cause a devastating impact on these areas, and you could find yourself in an emergency situation. It is important to know what to do in the event of flooding. It is never too early to begin preparations.

The Denver Radio Club stepped up and preformed an Emergency Operation Center (EOC) exercise in Lakewood to evaluate what might be needed in order to prepare for high-water and flooding.

Several scenarios were considered and presented by Jim Beall (K0TOR). Club members volunteered and evaluated the scenarios using Lakewood area Reservoirs to play out a high-water, flooding event.



The exercise was very productive, feeding information from assigned areas to a central communications controller. Safe event observation areas were established and the ability to maintain communication links with the acting controller were recorded.

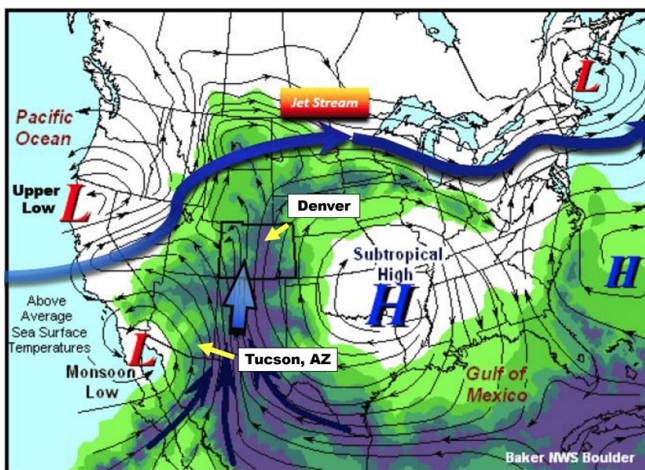
With the information gathered during this exercise, it was determined that it would be beneficial to schedule future exercises, to better coordinate with local, state, and federal authorities in the event that there were to be an emergency.

The results of the exercise were presented to Lakewood representatives to aid in their planning efforts.

To all that participated, job well done. Thanks to all.

Monsoonal rains can add to the state's full reservoirs and high-flowing rivers. The monsoonal flow of tropical moisture is a hallmark of late-summer weather in the Rocky Mountains, where massive storms set-up like clockwork, almost daily, in July and August. It just takes one storm to cause devastating impacts, and chaos, so if you find yourself in flood-prone areas, it is important to know what to do now, and It's never too early to begin your preparations.

Tracking The Arrival of The Summer Monsoons



Historic Rainfall and Floods in Colorado:

<https://www.climate.gov/news-features/event-tracker/historic-rainfall-and-floods-colorado>

Front Range Advanced Hydrologic Prediction Areas:



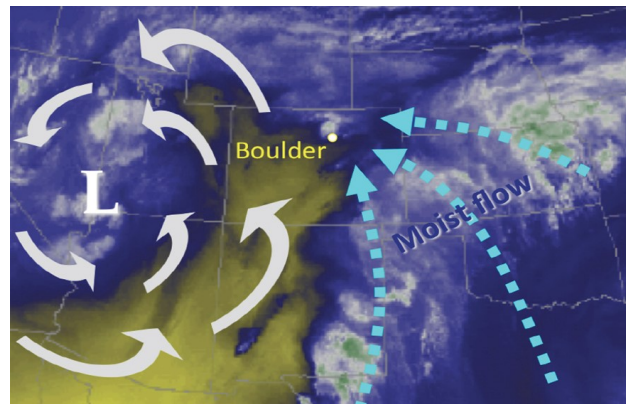
Through the first week of September 2013, high water and flooding, Boulder county.

First responders were resilient and dedicated during the 2013 flood.



Exposure and damage to utilities resulting in power outages.

Monsoon moisture Flow:



Saturation of moisture in the upper atmosphere increases potential for heavy rains and flooding.



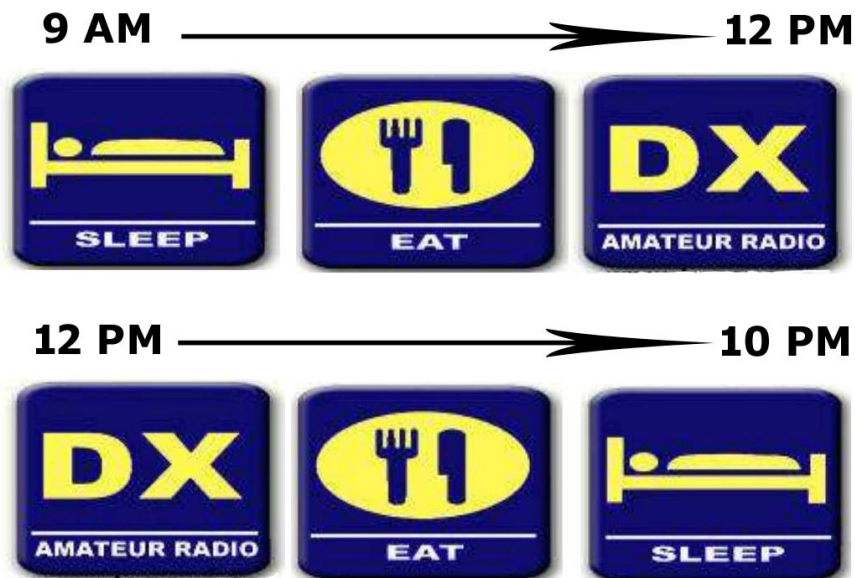
Amateur Radio Emergency Service® (ARES): Licensed amateurs who have voluntarily registered their qualifications and equipment, with their local ARES leadership, for communications duty, and public service when disaster strikes.

If you would like to be a part of an ARES group in your area, visit: <http://www.arrl.org/ares>. If you have general questions, contact the DRC's EmComm coordinators, Brennan Pate (AD0UZ) or Mike Vespoli (KE0HFH), via emcomm@w0tx.org.

73,

Fred
AA0JK

A RETIRED HAM'S PERFECT DAY



By W6OAV

FACT OF THE DAY

Nickel-Cadmium Battery Charging

Nickel-cadmium (NiCd) batteries can be recharged approximately 800 times over a period of 3 to 5 years if they are properly charged on each charge cycle. However, few nickel-cadmium batteries last that long, because of poorly designed battery chargers that continue to supply charging current after batteries are charged. Nickel-cadmium batteries are permanently damaged if that happens. It is easy to tell whether charging current stops after charging, because batteries left in a charger after charging will remain hot or warm to the touch if current continues to flow.

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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

[ARRL ARES](http://www.arrares.com)

THE ROUNDTABLE ARCHIVE

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

THE ROUNDTABLE ARTICLE INDEX

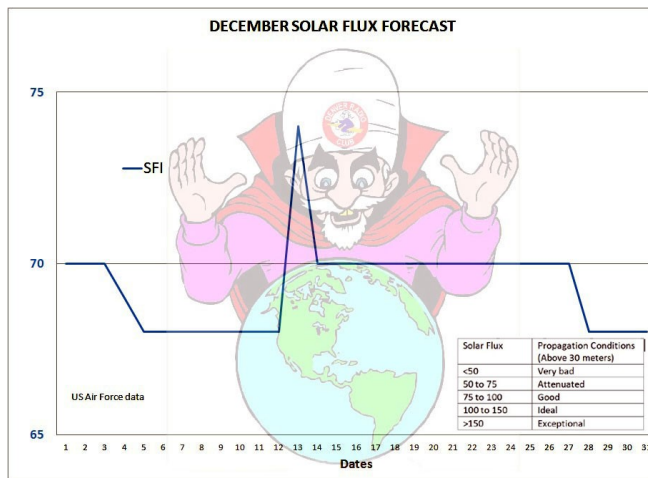
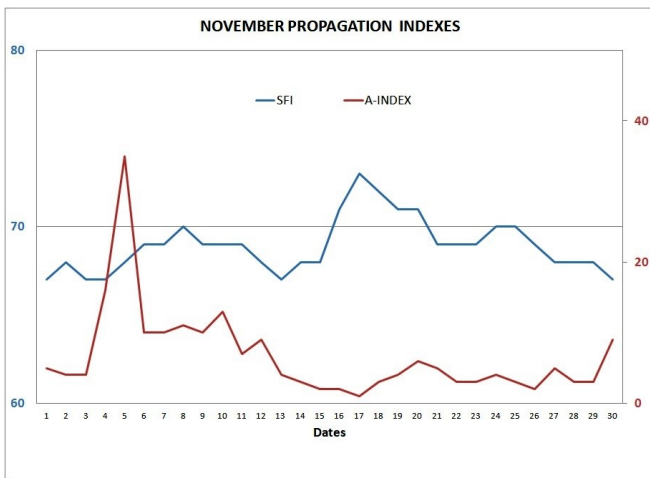
Go to: <http://www.w0tx.org/RoundtableArchive/-RoundTables-Index.pdf>

PAST & FUTURE PROPAGATION CONDITIONS

By Bill Rinker, W6OAV

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

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



UPCOMING EVENTS
HAMFESTS & CONVENTIONS

Event	Date	Location	Sponsor Website
Winter 2019 Hamfest	01/19/19	Larimer Cnty Fairgrounds (McKee 4H)	Northern Colorado ARC

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
Montana	01/26/2019	01/27/2019	Flathead Valley Amateur Radio Club	
Vermont	02/02/2019	02/03/2019	Radio Amateurs of Northern Vermont	
Minnesota	02/02/2019	02/02/2019	Minnesota Wireless Association	
British Columbia	02/02/2019	02/03/2019	Orca DX and Contest Club	
South Carolina	02/23/2019	02/24/2019	Columbia Amateur Radio Club	
North Carolina	02/24/2019	02/25/2019	Raleigh Amateur Radio Society	
Oklahoma	03/09/2019	03/10/2019	Oklahoma DX Association	
Idaho	03/09/2019	03/10/2019	Idaho QSO Party	
Wisconsin	03/10/2019	03/11/2019	West Allis Radio Amateur Club	
Louisiana	03/16/2019	03/17/2019	Louisiana Contest Club	

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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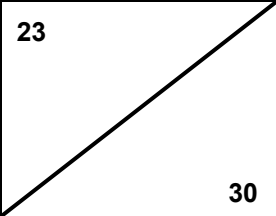
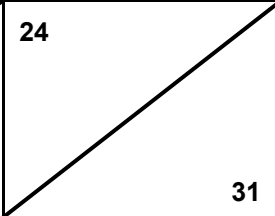


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DECEMBER 2018							<i>DRC Net Sundays at 8:30 p.m. on 145.490 / 448.625 (no PL)</i>
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
						1 160 Meter Contest - Starts 11/30 @ 2200 UTC	
2 160 Meter Contest - Ends 1600 UTC	3 	4	5 Holiday Party @ High- lands Masonic Center Doors Open @ 5:15 Dinner @ 6:00 PM	6	7  New Moon	8 10 Meter Contest - Starts 0000 UTC	
9 10 Meter Contest - Ends 2359 UTC	10	11	12 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	13	14	15  First Quarter	
16 Rookie Roundup CW - Starts 1800 UTC Ends 2359 UTC	17	18	19 No DRC meeting Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	20	21	22  Full Moon	
23 	24 	25 	26 Learning Net 7:30 p.m. 145.490 / 448.625 (No PL)	27	28	29  Last Quarter	
30	31						

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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