

# Rochester DX Association



## President's Letter

Chris Shalvoy, K2CS

Greetings all.

I hope you and your family members are well. It's been a "long haul", even longer than deciphering a sweeps CW exchange!

As could probably be expected, the bands have been uncooperative though many members have set their sights on domestic goals. We did have a 6m opening a few days back and that in turn ended up getting 10m going. I was able to work folks well after midnite local time.

The contest season is winding down with the CQWW WPX SSB held in late March and CQWW WPX CW yet to come at the end of May.

With the situation at hand, Field Day has been "canceled", at least in the way it's been held in the past. We'd still like to see club participation, even if on commercial mains and from home. More on how the club plans to "promote" Field Day 2020 as we consider several ideas.

The club, courtesy of the WB2KAO repeater, held a "virtual" meeting last nite (Tuesday 21 April). We had 33 "checkins" and conducted a bit of club business all in under an hour. Great to hear so many and appreciate the updates on local radio happenings. With the popularity of the session, we'll get the word out on another in the next few weeks.

Since all don't have VHF/UHF capabilities, Joe K2ZX (ie "Mr" ROC City Net) has offered to let us "piggyback" on his popular session on 75m. This would allow us to have HF only stations participate and disseminate RDXA business once the net has concluded. We're looking at when that may begin and will let you know by email.

Special thanks to both Joe and Tim.

Another thanks goes out to Mike K2GC for allowing us to use his Zoom account for a recent BOD meeting. Thanks to all from the organization in helping us stay in touch and continue as best as possible.

Our May meeting will be held but also follow recently suggested CDC guidelines in as much as it will be a "Zoom" session. Originally calendared for April, Doug, N2BEG has lined up a fascinating presentation on a "radio" related system that locates earthquake victims who may be buried in rubble. That system is called "FINDER", an article on the system can be read here (from several years ago) -

<https://www.nasa.gov/jpl/finder-search-and-rescue-technology-helped-save-lives-in-nepal>

The "meeting" will be held on Tuesday 19 May, the program is scheduled to begin at 7:30pm.

Sign in information will be sent via the RDXA email reflector, all are welcomed.

We may well have a "dry run" to be sure those that want to see the presentation can be assured their computer is configured correctly. Look for information on that via the reflector as well.

The combined RDXA/RVHFG Awards banquet had to be postponed and will be rescheduled. The current thought is to try for August in the same timeframe we held last year's get together. Since we don't "hold all the cards" on this stuff, we'll let everyone know as information becomes available.

That's it for now, as always, thanks to our bulletin editor John AC2RL and all members of the club that keep it functioning and relevant.

Let's hope we can get together at the ROC City Hamfest on Saturday 29 August, 2020 (which as the writing of this is still ON).

Best DX es 73,

Chris, K2CS

### Short Items

- Contest University 2020 will be held online free via Zoom. Thursday May 14. Registration required. Details at <http://contestuniversity.com>
- Amateur radio skills prove useful during bushfire emergencies in Australia. <https://www.ABC.net.au/news/2020-02-01/amateur-radio-skills-prove-useful-during-bushfires/11903200> (thanks to Ken Hendrickson)
- Network cable is great for connecting receive antennas. It contains four twisted pairs good to 100 MHz for CAT5 cable and 250 MHz for CAT6. No need for a bias tee, use one pair for signal and the others to power a preamp, switch loops of a K9AY, etc. Pairs are 100 ohms, so use 2:1 toroid at each end. Balanced line means no common mode noise.
- Transatlantic UHF contacts. April 7, FG80J in Guadeloupe and D4VHF in Cape Verde made a 432 MHz FT8 contact, 4000 km. On April 9 they did it again, but on SSB. Then on April 11 D4VHF and W3PND in Puerto Rico made a 4367 km FT8 contact. Tropo was really good that week.
- The FCC has confirmed that nothing in the FCC rules prohibits amateur radio license exams being given remotely. <https://docs.fcc.gov/public/attachments/DA-20-467A1.pdf>

## Memories of Field Days Past

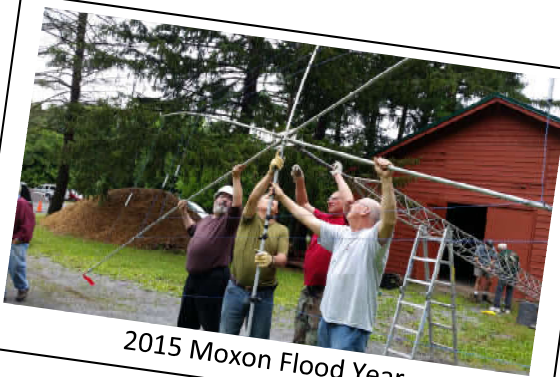
Since it looks like we won't be doing our traditional Field Day at Webster Park, Doug Stewart, N2BEG sent us some pictures from past years.



Field Day 2007



2015 Never Again!



2015 Moxon Flood Year



2002 Mendon Ponds



Field Day 2016



2002 MP Milmast



Field Day 2018



Field Day 2013

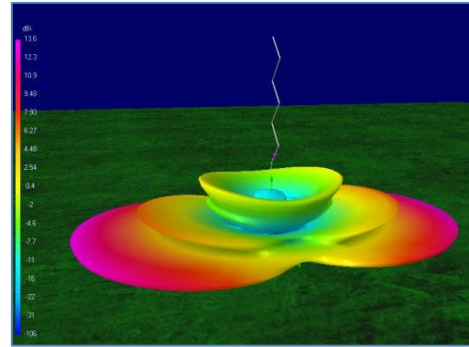


## A Diamondback Antenna for Two Meters

John Hall, AC2RL

High-gain Yagis are great for two meter SSB, but sometimes you want to hear stations on different bearings without constantly turning your rotator, such as in a contest or working a net

A year or so ago at an RDXA happy hour at MacGregor's, John Gilly, W3OAB, told me about an interesting wire antenna, the Diamondback or Zigzag. It was designed by Floyd Koontz, WA2WVL (inventor of the EWE antenna.) It is a horizontally polarized antenna with a wide horizontal beam width, a low takeoff angle, and a narrow vertical beam width.



The 2 meter Diamondback assembled

The antenna consists of a number of half-wave elements connected end-to-end in a zigzag pattern. The angles cause the vertical components of each pair of elements cancel which gives a very flat, narrow vertical pattern.

While Koontz's article describes an antenna for 15 meters, with a bit of work with 4nec2 I was able to produce a design for 2 meters. The model predicts gain of 13.6 dBi and a horizontal beam width of 84 degrees in both directions.

I built a cheap proof-of-concept model out of 16 gauge THHN insulated wire, bamboo garden stakes, paracord,

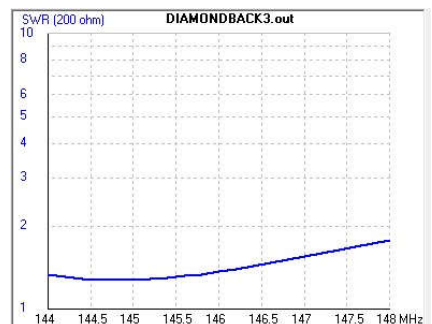
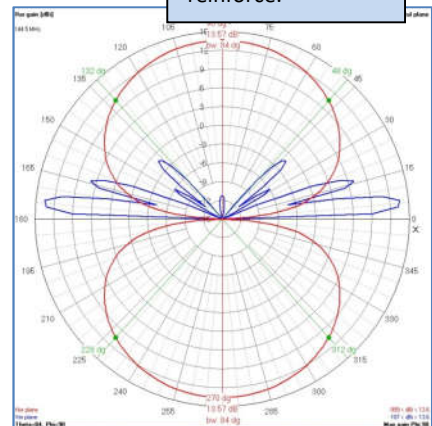
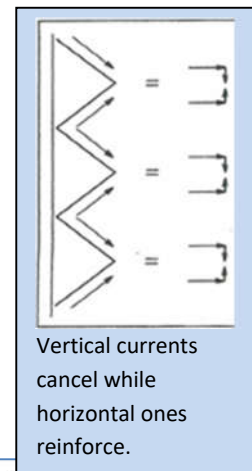
string, and wire ties. It has six elements, each 42.5 inches long, at 90 degrees to one another.

The antenna is fifteen feet high and thirty inches wide. I hang it in a tree, about thirty up, shooting east-west.

Fed in the center of the lowest element it showed an impedance of about 250 ohms. A 4:1 coax balun brings that down to around 62 ohms for a 50 ohm SWR of 1.35.

References:

<http://wa2wvl.net/pdf/09-The%20Diamondback%20antenna0001.pdf>  
<https://www.qsl.net/dk7zb/zigzag/zz-Englisch.html>



## HIGHLIGHTS – RDXA FD RARA presentation

Vic Gauvin, K1PY

Having been privileged to present a program on RDXA's Field Day at the May 4 RARA meeting, I was able to present some neat history, as well as some interesting FD information. Having pulled this info together, I realized that a fair number of newer RDXA members aren't aware of much of it – it spanned from 1987 to the present.

Anticipating a general meeting this March, I extracted a "highlights" presentation to pass along some of this to remedy that situation. That meeting was "virused" out. Since our next "meeting" will likely be "Zoomed," and the newsletter is now, I thought I'd provide a couple of sample slides.

### Did you know we ran 2A class?

*The first time:* The first (to my knowledge, which commenced when I moved here in 1984) was at *Harriet Hollister Spencer State Park* down in Canadice. That was apparently the default class at the time. It ran a CW and a Phone station, and placed 16<sup>th</sup> and 12<sup>th</sup> in '87 and '88.

#### ***HISTORY — Operating CLASS***

- As an aside, we did run 2A a few times:
  - '87 and '88 at Harriet Hollister Spencer
  - '02 **2A Kilowatt** – a total lark after winning our 1<sup>st</sup> #1 in '01
  - '11 & '12 to relax after over-the-top events in '08, '09, and '10

*The second time:* With our 1<sup>st</sup> #1 in '01, for '02 we thought, "hey, that was cool. How about seeing what running a kW would be like?" Well, we placed 32<sup>nd</sup> in 2A with 7,294 points. (Running a kW eliminates the x2 low power multiplier bonus.) The '01 contacts vs. those for '02 were 1594/1285 for CW, and 2210/2499 for Phone. The "feel" was not much different! We expected it to be a killer difference. However, it was a fun lark.

*The third time:* The most recent 2A's were in '11 and '12. That was to recover/relax after 3 years of over the top competition. It was a blast, but it was similarly exhausting, and I will bet that nobody that's still around would want to repeat it. We achieved our 3 highest ever scores in those 3 years. That was the momentous W9CA competition. (Details on that in the next program.) Our 2A "wires only" efforts put us in #41 and #32 2A positions (6,458 and 7,102 pts).

It's been 3A since then.

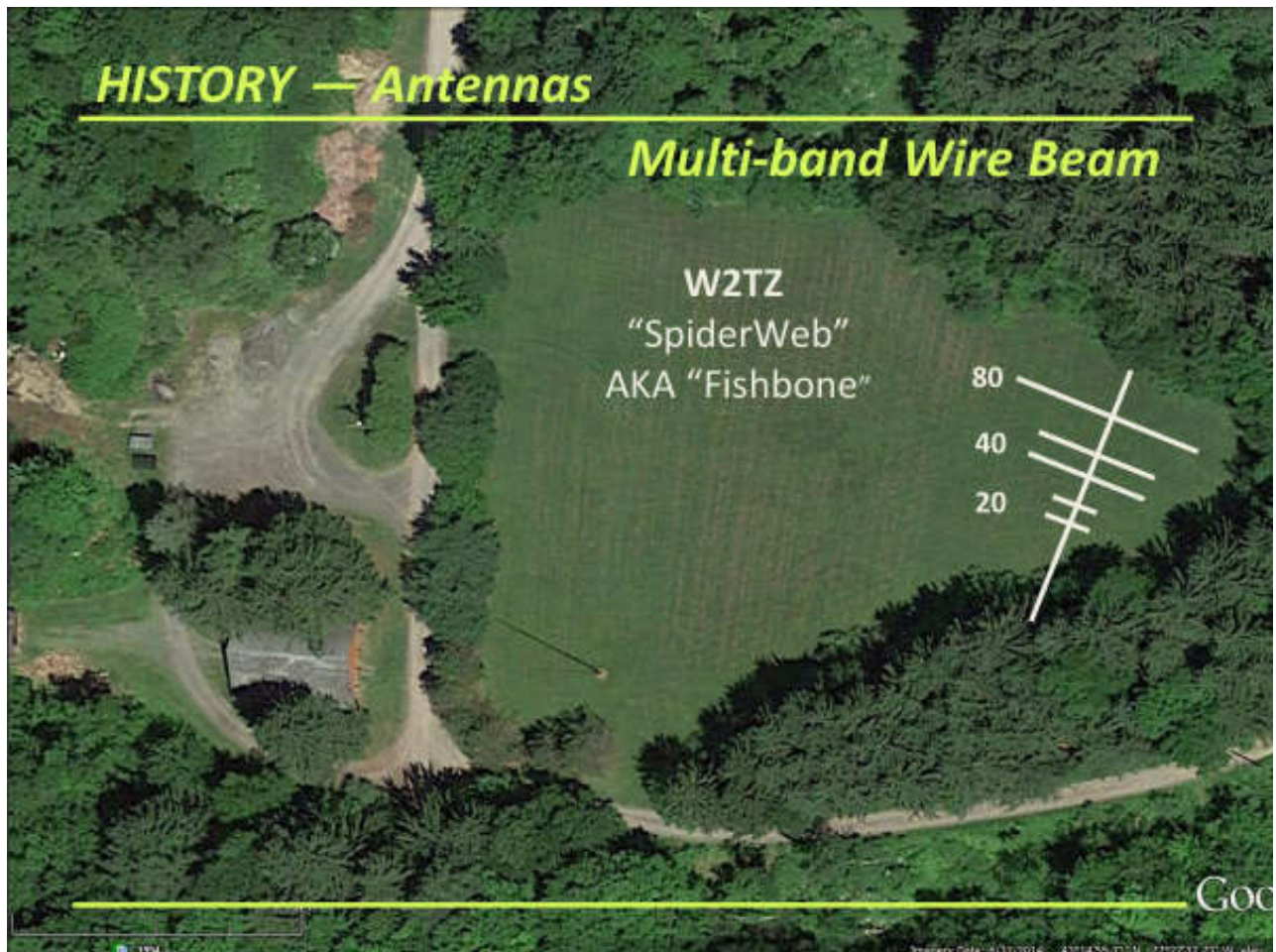
### The famous W2TZ "Spider Web" or "Fishbone" antenna

You know we're always playing with antennas. Either new ones, or at least relocated ones. I'm pretty sure we haven't had the exact same layout two years in a row, ever. But there was one that gained fame, and was used at the Phone station for several years. It's the W2TZ "Spider Web," or sometimes called the "Fishbone" antenna. Fred was, and still is a wire antenna guy. He built several 2L wire beams

for our Field Days for several years, before we had the commercial Yagis we've been fortunate to have since then.

But this one was more than that. It was a **2L-20/2L-40/1L-80** on a rope boom. We had the perfect geography for it in the east end of the field, and that determined where the Phone tent would be.

Putting it up was an art form. To be successful, you just did what Fred said, nothing else, and then, it was up!



I pretty much like having our results data, but apparently, I didn't capture the years in which these were used (even though I thoroughly enjoyed operating with them with Fred and the phone team). They are almost legend.

**Do you know that we had a 100-foot telescoping tower?!**

Yep. That'll be in the program, along with a number of other highlights, whenever we present it at an upcoming meeting.

Hope you're intrigued enough to Zoom in.

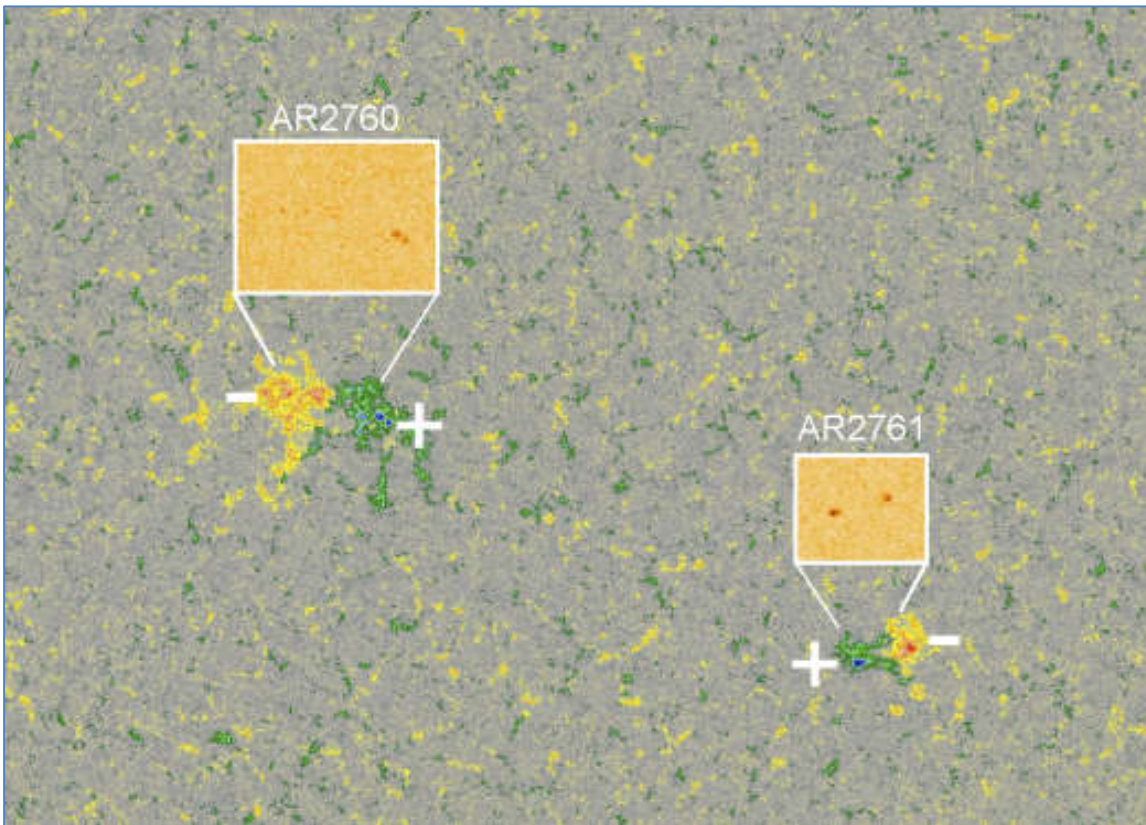


## TWO SOLAR CYCLES ARE ACTIVE AT ONCE

Ken Hendrickson, N8KH

Today (Monday 27 April 2020), there are two sunspots in the sun's southern hemisphere. Their magnetic polarity reveals something interesting: They come from different solar cycles. Take a look at this magnetic map of the sun's surface (with sunspots inset) from NASA's Solar Dynamics Observatory:

One sunspot (AR2760) belongs to old Solar Cycle 24, while the other (AR2761) belongs to new Solar Cycle 25. We know this because of [Hale's polarity law](#). AR2760 is +/- while AR2761 is -/+, reversed signs that mark them as belonging to different cycles.

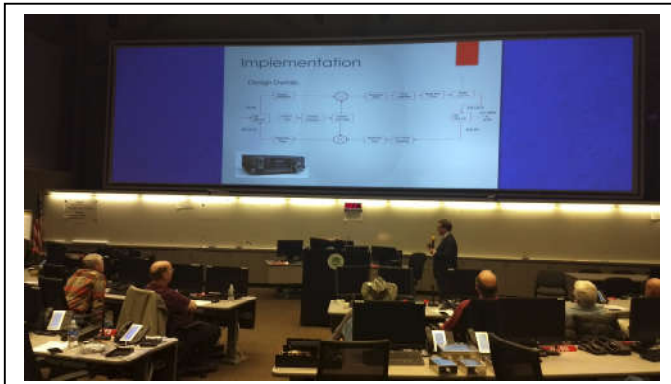


This is actually normal. Solar cycles always overlap at their boundaries, sprinkling Solar Minimum with a mixture of old- and new-cycle sunspots. Sometimes, like today, they pop up simultaneously. We might see more such combinations in the months ahead as we [slowly grind](#) our way through one of the deepest Solar Minima in a century.

The simultaneous appearance of two solar cycles suggests a type of temporary balance. In fact, the tipping point may have already been reached. So far this year, there have been 7 numbered sunspots. Five of them (71%) have come from Solar Cycle 25. This compares to only 17% in 2019 and 0% in 2018. Slowly but surely, [Solar Cycle 25 is coming to life](#).

## Winter RDXA Meeting Photos

David Pfonner, AC2VE



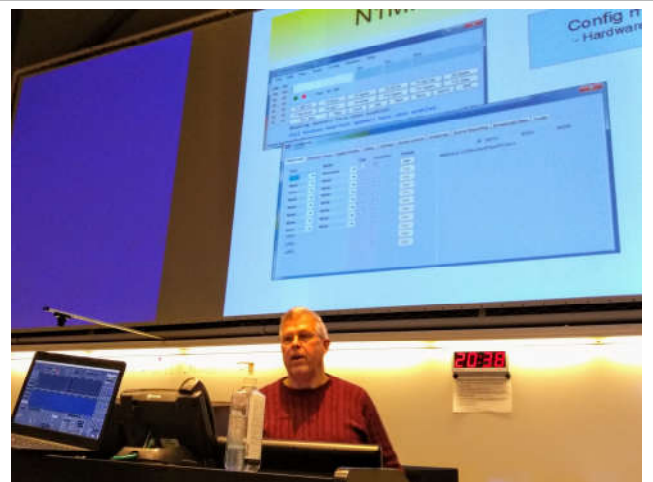
Bill K2TER describes his transverter project at the January meeting.



Bill also introduced us to the NanoVNA



Using a NanoVNA to characterize an HF filter at the January meeting



Mark N2YB explains RS-232 interfacing at the February meeting





## 2019 NYQP UPDATE

Doug Stewart, N2BEG

In case you haven't heard, the results for the 2019 New York QSO party have been finalized and published. They can be seen here:

<http://nyqp.org/wordpress/2019-results/>

The Plaques for all the winners are being made now, however the plaquesmith is shutdown due to the COVID-19 pandemic so shipping will be delayed until they are back at work. I wanted to try to illustrate the efforts of the small band of of your club members and friends who do all the work to make the QSO party a success.

You may not realize the amount of effort that goes into putting this thing together and seeing it through. It starts months before the October event with soliciting and tracking sponsors and payments for the 30 or so plaques every year. This is tedious work to keep track of past plaques that haven't been awarded, the ones that have been awarded, ones with new sponsors, etc., Then there is getting the word out to all the clubs, both in NY and elsewhere to help increase activity. Then there is website work that happens throughout the whole process, constant updates as the event nears, reminders about posting activations, etc.

Once the QSO party actually happens, there is the log submission to contend with. This is a time consuming effort, notifying participants of issues, categorizing entrants, fixing errors, etc. all within the 2 week submission window. After that is log checking, looking for issues withing logs, dupes and uniques. Another big effort. Finally, when all the logs have been scrubbed and scrutinized can they be uploaded to be run through the custom scoring software written by RDXA member Dave, WJ2O. After those results need to be verified and then winners sorted for the different categories based on the output and any close races scrutinized further. Only after all that can the results be made public, and awards started and the write up of the results written. The awards process starts with generating the plaque artwork for the current year and populating each of the awarded plaques with the proper category, winner's callsign or club name, sponsor info etc. These are then triple checked before printing and sent

to the plaque maker. Once the plaques have been fabricated, the final process of boxing and addressing each one and finally mailing them out can be done. (usually about 30-35 plaques each year) All these jobs are handled by this small group of merry men who selflessly perform these daunting tasks, all the while smiling and whistling while they work.

We are always looking for new blood with any of these tasks. When they are broken up among more people, everyone has less to do. Many have rotated through the jobs here to help put the NYQP on through the 11 years we have been doing this. If you would like to help, please don't hesitate to ask any of us. We promise to provide training, coaching and as an added incentive, double our salaries...(Dave, Carey, Jeff, Dean, Mike, Vic and Myself)

### **Hams shine though once again...**

We hams (whose wives and girlfriends have long known of our prowess at social distancing long before it was mandated) have once again shown how much we are ahead of the curve. Seems on-air gatherings are a perfect way to socialize while adhering to social distancing recommendations from our own basements and shacks, again long before doing it was mandatory (AND you don't have to get dressed up like you're on Zoom, pants AND shirts are both optional unless you are doing ATV!) Hopefully we will still enjoy some hamfests this season, these are yet another artful demonstration of why hams have always been cast as "socially distant" also sometimes referred to as "the great unwashed" - *Doug Stewart, N2BEG*

## Work in Progress – A Tunable Recording Field Strength Meter

John Hall, AC2RL

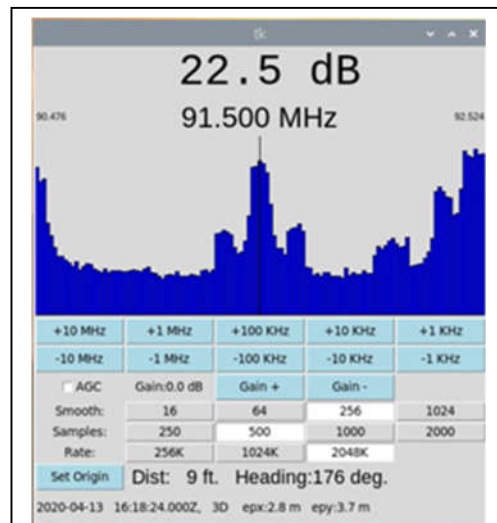
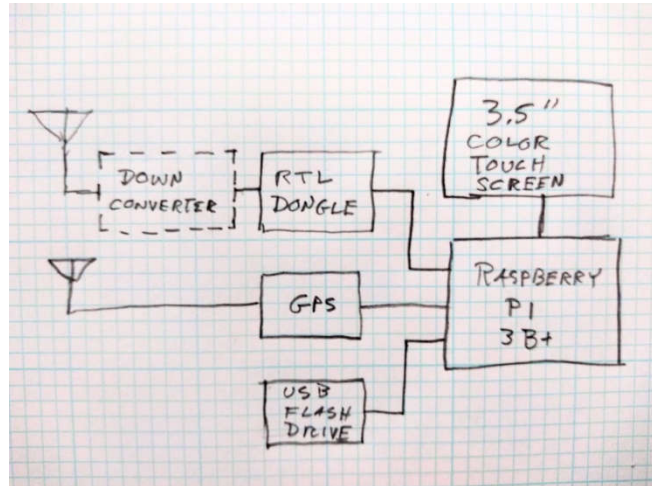
What does your antenna's real pattern look like, including the influence of the buildings, trees, and terrain? I am working on a device to measure antenna patterns in the real world.

The idea is to transmit a CW signal through the antenna and use a small SDR receiver with attached GPS to record the signal strength and position at hundreds of points around the antenna. Knowing the GPS position of each reading lets us to determine the bearing and range to the antenna. Knowing the range, we can use the inverse square law to normalize the signal strength values

Here's what I have working so far. A Raspberry Pi model 3B+ with a 3.5 inch color touchscreen. An RTL SDR "dongle" and a GPS module are connected to the Pi with USB cables. Software that reads IQ samples from the SDR, converts them to the frequency domain and displays the spectrum and center frequency signal strength. The GPS is read once a second and the distance and bearing to the antenna is displayed.

To do:

- Add code to record sample bearings and signal strengths to a CSV file on a USB memory stick.
- Build a PC program to convert bearing and signal strength values into pretty polar plots of the patterns.
- Integrate a downconverter to allow use with HF signals below 24 MHz
- Research/acquire/construct suitable omnidirectional antenna(s) for the SDR
- Devise battery and mobile power systems
- Package everything for convenient portable and mobile operation



Screenshot of program in development showing spectrum display tuned to WXXI-FM, showing the FM carrier and subcarriers.

- Clean up and refactor the code to make it more pythonic and object-oriented.



## RDXA 2019-20 Calendar

### September 2019

12 — BOD — K2TER  
 14-16 — ARRL September VHF  
 17 — Meeting — Show Shack  
 28-29 — **CQWW RTTY**

### October 2019

1 — BOD — KM2B  
 15 — Meeting — Contest Prep  
 19-20 — **NYQP**  
 26-27 — **CQWW SSB**

### November 2019

5 — BOD — N2BEG  
 2-4 — **ARRL SS CW**  
 16-18 — **ARRL SS SSB**  
 19 — Meeting — Raspberry Pi  
 23-24 — **CQWW CW**

### December 2019

3 — BOD  
 6-8 — **ARRL 160m CW**  
 TBD — RMSC Event  
 14-15 — **ARRL 10m**  
 17 — RDXA Holiday Dinner  
 28-29 — Stew Perry 160m CW

### January 2020

4-5 — **ARRL RTTY Roundup**  
 7 — BOD  
 18-20 — ARRL January VHF  
 21 — Meeting — IC9700  
 24-26 — **CQWW 160m CW**



### February 2020

4 — BOD  
 8-9 — **CQWW WPX RTTY**  
 15-16 — **ARRL DX CW**  
 18 — Meeting  
 28-1 — **CQWW 160m SSB**

### March 2020

3 — BOD  
 7-8 — **ARRL DX SSB**  
 17 — Meeting  
 28-29 — **CQWW WPX SSB**

### April 2020

7 — BOD  
 21 — Meeting — CANCELLED  
 TBD — Awards Banquet — CANCELLED

### May 2020

5 — BOD  
 15-17 — Dayton Hamvention — CANCELLED  
 19 — Meeting — online via ZOOM  
 30-31 — **CQWW WPX CW**

### June 2020

2 — BOD  
 TDB — Rochester Hamfest  
 13-15 — ARRL June VHF  
 16 — Meeting  
 27-28 — **ARRL Field Day**

### July 2020

11-12 — IARU  
 18-19 — CQWW VHF

### August 2020

18 — IRVfest — Dolomite Lodge  
 TBA — ROC City Hamfest  
 31 — Contest season concludes  
 Membership year concludes

## Rochester DX Association

**Club Station — W2RDX**

**Club Website —** <http://www.rdxa.com>

**Facebook group —RDXA QTH**

This Bulletin is the official publication of the Rochester DX Association and is published Quarterly.

All those with an interest in amateur radio, DXing and contesting are cordially invited to any meeting and to join RDXA. Meetings are held at 19:30 Local time on the 3rd Tuesday of each month, September through June. Meetings are located at the Monroe County Emergency Operations Center located at 1190 Scottsville Rd. Rochester, NY 14624.

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Please send all newsletter submissions, comments, and complaints to the editor:

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Paypal: [treasurer@rdxa.com](mailto:treasurer@rdxa.com)

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Regular Membership: \$25.00

Family, Full time Student  
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