The LongPath

July 2022 — Volume 46 Issue 7 A North Alabama DX Club Publication

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From the President

By Bob DePierre, K8KI

These days I'm lucky to be sitting at the start of a new solar cycle and with more time to operate. About two months ago I noted how suddenly great the DX was. Then it tapered off… and off. Well, that was before I learned to keep track of the Ionosphere (A, K, and SFI values) every day. It's a good thing we have members like NN4NT to shove me in the right direction. So, I've been watching, and, yep, the SFI has gone steadily down over that period, while the A value has generally been too high. Now, the DXing hasn't been bad lately, but it just hasn't been at the terrific level I had seen. So, I just gotta know, when is the terrific DX coming back?

We have a hamfest coming up in only about 6 weeks. I'm excited! The big deal for the NADXC is the DX banquet. There are a lot of changes this year. And those changes surely drive goals and expectations. We've only sold 35 tickets so far. That's certainly below my expectations. The DX banquet is supposed to be our big fund raiser for the year. We raise funds for one thing alone – DXpeditions. And to do that we have to sell tickets. My goal is 125. Unfortunately, we have historically not sold tickets very well to our club members. I've seen this so many times, yet I'm confused as to why. This is a really good party, capping off hamfest Saturday. We always have the top ARRL staff here – if you'd like to meet the ARRL president or CEO, this is your chance. Our speaker will be Ward Silver/N0AX, who has written books and columns for QST for years, and is one of the best speakers you'll find anywhere. He'll also do a forum on Grounding & Bonding.

You might not know that the DX banquet has been a money loser for years. I'm trying to turn it around this year and do it at a lower price! The big change is the venue – the Elks Lodge, just north of Governors Dr in the hospital district. Instead of an expensive hotel doing all the management work, it's now up to us. And I need help – from you. I sure hope I can persuade more of you to attend our banquet this year. Please buy a ticket or two and join us in the fun!

At our July meeting, you'll see that the museum is still in the midst of its renovation. You can walk around and see the difference in where the walls are at. Instead of a bunch of private offices, it now has open spaces for museum exhibits. It should look a lot different in time for our August meeting, and a good possibility for being clean and pretty in time for the ham-

From the President (continued)

fest. This is going to be exciting.

HARC always puts on a good show at Field Day, and 2022 was no different. With the pandemic almost over, they managed a very strong turnout. Kudos to Laura/K4CNY for her fine FD leadership! I had one wonderful time, but sadly I remember being younger when the heat didn't melt me so quickly.

Our VP, Steve Molo/KI4KWR, will present the program on "Amateur Radio from the Dealer Perspective." As you may know, Steve is the Brand Ambassador for Gigaparts, and acts as the face of the company at conventions, shows, and on social media. Robbie Sperr thought enough of him to move him from NJ all the way to Alabama a few years ago. Steve's view on radios is different from mine, and well worth listening to.

The Museum of Information Explosion

So, let's plan to have the next NADXC club meeting on Tuesday, July 12, at the Museum of Information Explosion at 1806 University. The Zoom sign-on will be exactly the same as in the past, although this will be the last time using the old credentials. I'll have new ones for you in August. I'll send members the Zoom invitation on Sunday just before the meeting. Again, remember to pick up your dinner on the way over. I'll get a few of you to help set up the tables and we'll just eat here. I'll open the doors by 5:45. The meeting will start at 6:30, and the program by 7:00.

Heathkits I Have Known

By Rob Suggs, NN4NT

Several months ago, the Long Path had a series of articles on "old radios we have known". Steve Werner AG4W had a delightful article on the Heathkit boat anchors he had built and used. I'd like to add my experiences with some other old "Heathkit green" devices. My first amateur transceiver was the 2m HW-202. I built it in 1974 while waiting for my Technician license to be issued by the FCC. That used to take several weeks to months. It was a major project for me since I had never built any electronic equipment, but I had taken plenty apart. It worked first thing, but I did have to get some on-the-air help getting the crystal oscillators trimmed to frequency. I recently found my original logbook and my first amateur contact was on 146.94 simplex (yes 94 simplex) from near Chickamauga, Georgia where I was home from college to near Benton, Tennessee. I was hooked! The original purchase price was $179.95 directly from the Heath Company. That is $1067 in 2022 dollars according to usinflationcalculator.com. You'd be hard pressed to find a single band mobile transceiver that costs that much today unless it was gold plated. We really have it good in terms of bang for the buck today. I added a Heath Micoder II touch tone microphone a little later. Getting the tone oscillators on frequency was a pain without a frequency counter but I eventually got it working on the autopatches.

That rig, with a few additional crystals to give me a few repeater pairs, served me well through college and into grad school. I added a

Heathkits I Have Known (continued)

circuit published in QST which allowed automatic scanning of the 6 channels with an LED indicating the current channel. You flipped a switch to stop scanning and talk. I was really proud that I got that working. The rig generated 10 watts so I built the 40-watt Heathkit amp a couple of years later to get better coverage in the mobile. I recently saw the amp in my junk box. My 202 spent its golden years as the W5GB (NMSU Amateur Radio Club) repeater on Tortugas Mountain near Las Cruces, New Mexico where I was in school. We moved the transmit board into a separate box, built a controller based on discrete logic (complete with static RAM for the CW IDer which had to be toggled in as ones and zeros after a power outage) and later upgraded to an RCA 1802 microprocessor-based controller. I still have an 1802 and EPROM in my parts stash.

I recently bought a working HW-202 for almost nothing at the Huntsville Hamfest and have been enjoying it on 146.52 simplex. It came with the original manual which brought back so many memories of those weeks spent assembling the rig and matching power supply. Heath manuals were works of art with clear instructions and hand-drawn illustrations. Being able to align the radio without test equipment still seems like magic to me.

Other Heath equipment I built included the HR-10B HF receiver which introduced me to vacuum tubes. It was a real joy to build after the tight

Figure 1 – HW-202 transformed into W5GB repeater circa 1982. Transmit board is in the box on the left. Controller is the large box below.

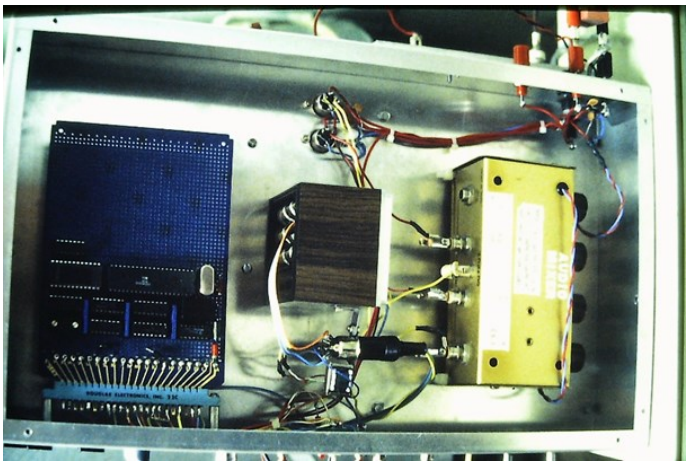


Figure 2 – From left to right, RCA-1802 based repeater controller on wire-wrap board, Radio Shack voice synthesized clock, audio mixer for clock and repeater audio.

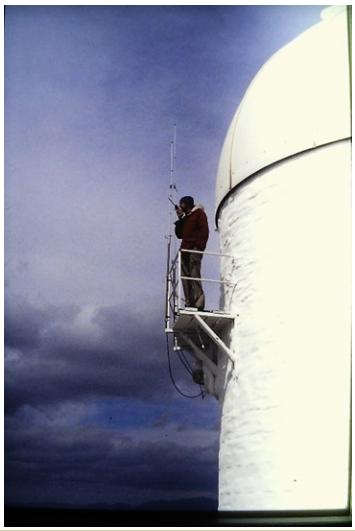


Figure 3 (left) – Antennas for W5GB repeater at New Mexico State University's Tortugas Mountain Observatory just east of Las Cruces.

Figure 4 (right) - NN4NT (then KB5EZ) examining prototype repeater controller. Note the 2m duplexer cans.

Heathkits I Have Known (continued)

quarters in the 202. I also built the HM-102 power/SWR meter and HD-1250 solid state dip meter (both of which I still have), and the HW-2021 2m handheld transceiver. It was also crystal controlled and, even though it was huge compared to today's handhelds, was very challenging to build due to the crowded circuit board. It worked well and was fun to use until I got a Kenwood TR-2400 synthesized handheld a few years later. I couldn't find the original purchase price of the HW-2021 but I'm sure you could buy a couple of high-end modern rigs for the equivalent cost today.

Compare the capabilities of a dip meter to a Rig Expert or Nano-VNA today. I adjusted plenty of antennas with that dip meter. We even used a Heath dip meter as an RF source for a magnetic resonance experiment in my college physics lab.

I miss the Heathkit line. Modern robotic assembly and surface mount technology have made it way more cost effective to buy assembled radios today, but those old kits were a great way to learn how radios work. We also gained enormous satisfaction from communicating with something we built with our own hands and soldering irons.

Figure 5 – Heathkit HD-1250 Dip Meter and coils and HM-102 power/SWR meter.

Update on Experimental Comparison of Various Loop Antennas, Different Designs of Hexbeams, and Other Antennas

By Barry Johnson, W4WB

This is a brief update on my antenna performance comparison effort using WSPR. The first step was to install the software from Zach Tek to operate the Zach Tek WSPR transmitter. Next, I installed this transmitter, having a 200-mW output, to the input of my Mazzoni BABY Loop Antenna mounted on a portable stand in my garage and directed towards Europe. This antenna can be tuned (10-40m) by using the Elecraft K4 to set the operating frequency or by direct entry using the keyboard with the Mazzoni ATU. Having the antenna in this location is not overly conducive to good RF emissions since the garage doors are metal and the walls of the garage area are lined with Steelcase storage cabinets. Nevertheless, the SWR was 1.4 on 40m and 1.5 on 20m.

At about 2100 UTC on June 25, I began transmitting on 40m and ceased at 0700 UTC on June 26. Much to my surprise and delight, I saw reports being posted on WSPRnet. W3PM, located in Madison, copied my transmission 335 times with a SNR of -19. The most distant reporting station was WF7U at a bit over 3200 km with a SNR of -25. N3SB (1058 km) decoded my signal and reported a SNR of -31 which is essentially the limit. The number of unique reporting stations was 26.

At about 1500 UTC on June 26, I began transmitting on 20m and ceased at 2100 UTC. The most distant station was in Hawaii (6874 km) with a SNR of -22. Quite amazingly, KF4NCN (461 km) reported a SNR of -3! The lowest SNR reported was -30 by AE7YQ (2252 km). The number of unique reporting stations was 72. Between the 40m and 20m sessions, my signal was decoded all over the USA, and Canada, Alaska, Hawaii, England, Scotland, Portugal, Spain, Germany, Luxembourg, etc.

During the above exercise, I began discovering which stations have the "big ears" (quiet QTH and good antennas) and are generally monitoring. This is important to know since I will likely use some of them during the comparative antenna tests. In a like manner, I yet need to discover those beacon stations that have a reliable and strong signal for other parts of the antenna comparisons.

Since it takes a relatively long time to perform the measurements need to generate an antenna's radiation pattern, the data gathering procedure needs to account for the vagaries in propagation and the noise at the receiving station. WsprDaemon.org provides a robust decoding and reporting system for WSPR and includes temporal graphs for many reporting stations so that SNR values can be converted into signal values for improved radiation pattern generation. Data needs to be gathered from a number of reporting stations and then statistically analyzed. My first effort will be to evaluate the Traffie Hex-Beam on 20m to "perfect" the measurement and data analysis approach.

In a discussion on WSPRdaemon about WD3 and FST4W server hardware regarding the significant electrical power consumed by WSPR decoding and associated issues, ON5KQ wrote the following (excerpted).

At least in my case it becomes really important. Here in Europe, it is expected that the whole continent will face a severe energy crisis. The largest gas-importers in Germany (who sells

Update on Experimental Comparison of Various Loop Antennas, Different Designs of Hexbeams, and Other Antennas (continued)

gas to electricity to all the main electricity producers) is bankrupt and needs help from government. If they cannot deliver gas anymore, 50% of electricity producers in Germany must close production almost immediately. As Nord Stream 1 will be in maintenance from 11th of July, it is likely the maintenance period will be "lengthened" for political reasons by Russia for unknown time and gas delivery will stop completely...

As most of electricity is produced in Europe by gas turbines, and at the same time in France serious technical problems with nuclear plants took at least 50% of the capacity offline, a European electricity blackout is rather likely. With no quick recover....

I am explaining this, as the European situation is severe and one must understand why everyone here is very caution about electricity.... not the electricity bill itself, but for the potential damage for the European ecosystem, which can be destroyed with just one "gas-atomic-bomb" Putin is developing at the moment - I expect this "bomb" will be fired in the most critical time to erase European economy for the coming several years....

In response to a question from another member of the group "With these electricity problems, is Europe still pushing electric vehicles like here in the US?", ON5KQ replied as follows:

Yes, it is also decided, that after a specific date (2030?) any car sales is forbidden by law, if the emission is not zero - so there will not be new cars with standard engine like today from that date... If this means "only electrical" is not clear, but will depend on technology in the future.

To achieve same mobility than in the past with only electric vehicles is however impossible, because there is no infrastructure to feed such big fleet of electric cars. I mean not the charge stations, but the power network itself... it will take at least 20 years to build that in Europe and it has been calculated, that it would mean investments of trillions (thousands of billions) of Euros to achieve it within the coming 20 years...

So yes - officially the various European governments are pushing electrical cars strongly. But it is short term promotion only. This promotion will stop, when it becomes clear to the customers, that being owner of an electrical car will not offer individual mobility as you expect, as there is no capacity to charge the car individually, when you want - but by appointment only - like dentist appointment....lol.

For what it is worth, the electricity charge in Huntsville is $0.11739 per kWh (current), $0.328 per kWh in Belgium and Germany (2021), and $0.198 per kWh in France (2021). In December 2021, Sweden households were paying $0.229 per kWh and by May this year, cost has risen by about 30%! All of the European countries are suffering awesome increases in energy. How this will affect DX activity is yet to be seen.

Congratulations Bruce, AC4G!

Bruce finished 3rd in the US in the Classic Low Power category during the 2022 WPX RTTY contest.

2022 WPX RTTY TOP UNITED STATES SCORES

CLASSIC

LOW POWER

WDØT	565,211
WA8MCD	484,692
AC4G	451,906
WA3LXD	411,939
AA8OY	374,035

New Software: Grid Tracker

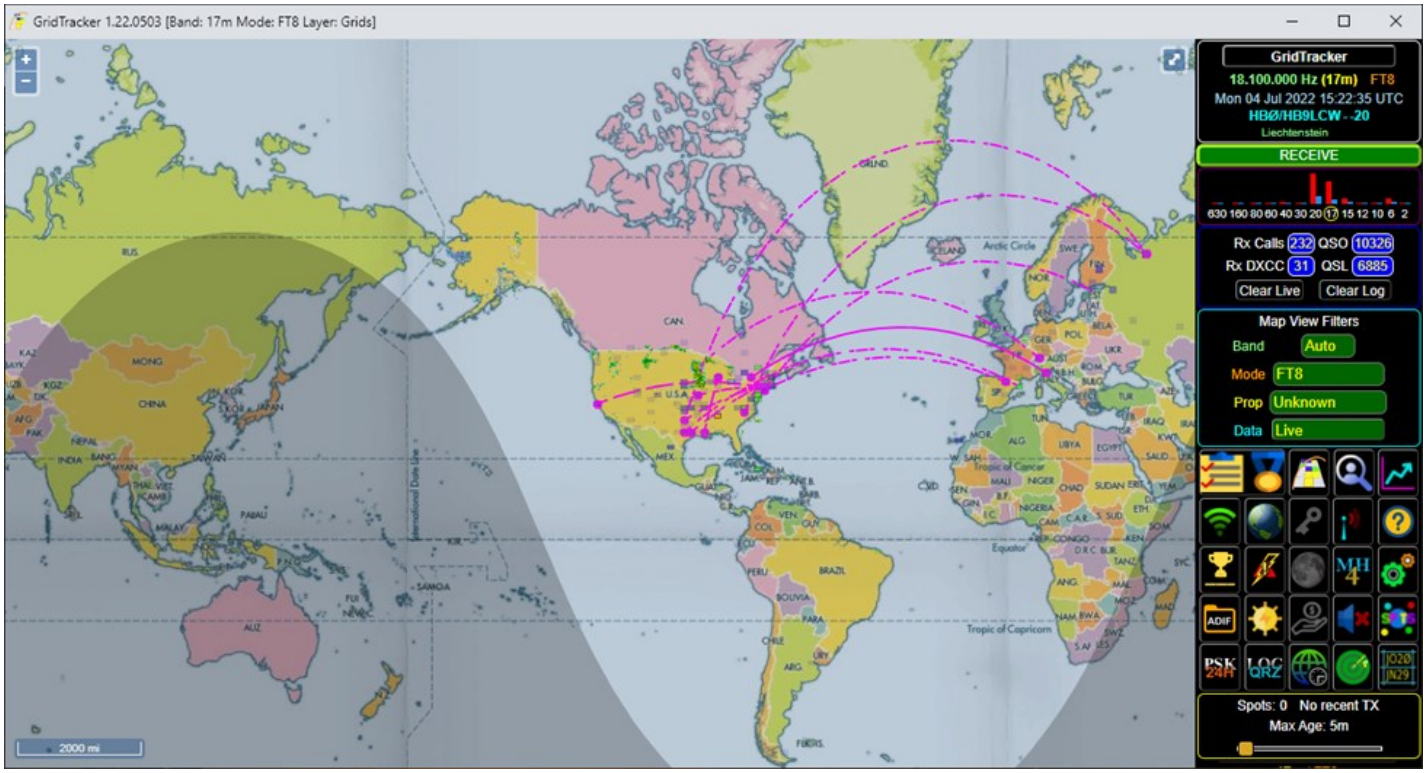
By Bob DePierre, K8KI

Every time I turn my radio on, I look at the recent spots shown in one of my Ham Radio Deluxe (HRD) windows. In the new solar cycle, there is often quite a bit of DX out there. And most of it is digital, predominantly FT8. I sure like to keep things simple, but I was stricken with engineer's disease long ago and am compelled to keep asking "what if…" I have a couple of 24" monitors bolted to my wall, plus a laptop screen. That leaves me with acres of space to display "useful information."

So, I have my SmartSDR screens up, and next is the WSJT-X windows, then the HRD windows. I want all my QSOs to get logged in HRD, but I can only do that if I have JT Alert running, so that's another window, and it's starting to get a little complex now…and crowded. So, Barry/ WA4HR tells me I need to run a program called Grid Tracker.

Not only does Grid Tracker take up some serious real estate on my monitors, but I now have to seriously start worrying about how to get all these programs to talk to each other. I have little experience in IT or programming, but luckily NADXC has a number of members who do, and Barry was unrelenting. With some experimentation, I got them all talking nicely to each other. If you haven't tried or seen this yet, the result is sorta breathtaking! Simple FT8 can take up all of your monitors' space if you let it. You don't badly need all this information, but once you find out how to get it, you're likely to bite the hook as hard as I did.

Grid Tracker does what its name implies: it connects to the worldwide SDR networks and plots the grid squares for stations in your area. I've seen all sorts of propagation maps over the years, but none quite as helpful as this. Now I can see where propagation is open for my area AND my band! The real-time map below shows all of EU



New Software: Grid Tracker (continued)

is presently open now, and I shouldn't consider looking for the south Pacific. This even shows my signal in a different color when I'm transmitting.

The program provides all sorts of customizing for how you'd like to display the map. It shows what is happening, at least for digital comm, only on the band you're using right now. It will display the current A, K, and SFI values. It will even display the weather, clouds, and lightning storms! It automatically connects to QRZ and immediately shows the data/photos from the QRZ page of the ham you are talking to.

Getting Smart SDR, HRD, WSJT-X, JT Alert, and Grid Tracker to play together nicely does take some patience. You'll hear IP and UDP a lot in the process. But there are good YouTube videos available, plus WA4HR and I have both suffered through the setup and can help if you need it. But if you take the leap, the results can be quite dazzling.

Product Spotlight

By Steve Molo, KI4KWR

This month I will cover two products I used at Field Day 2022 with Huntsville ARC for powering the 20/80m phone station. We needed a station making contacts on portable power, so, why not turn the station to complete 100% solar for the twenty-four hours?

PowerFilm 42-Watt Rollable Solar Panel

The first item is this solar panel manufactured by PowerFilm. Once unrolled the panel measures 60.7 inches long and 26.5 inches wide and has grommets to secure to the ground for any winds you may endure. With the panel being waterproof, the connector to the solar controller needs to meet that standard using an Aptiv connector. It is not a connector like an Anderson but does have a gasket to be watertight.

Features:

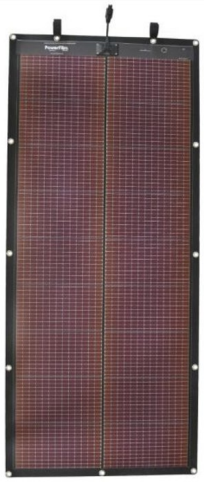
Waterproof / IP67 rated

- Light sensitive technology turns on early in the day and stays on later in the day.
- Multiple charging adapters to fit your needs and charge a wide range of devices.
- Easy to deploy and easy to store.
- Made in the USA

Electrical Specs:

- Rated Voltage at Pmax 15.4V
- Rated Current at Pmax 2.7A
- Open Circuit Voltage 21.9V
- Short Circuit Current 3.4A

https://www.gigaparts.com/powerfilm-42-watt-rollable-solar-panel.html



Left: The PowerFilm panel measures 60.7 in. x 26.5 in. when deployed.

Below: The PowerFilm panel rolls up for storage and transport.

Product Spotlight (continued)

Genasun 5A MPPT Solar Charge Controller for LiFePO4 Batteries

With the Station using a 100Ah LiFePO4 (lithium iron phosphate) battery "Coming Soon" to GigaParts, I needed a solar controller that could support that battery formula and trickle charge the battery with sunlight. The size and ease of use makes this a perfect option for POTA or weekend operating without the need of AC. I had both of these paired together with 12-gauge power wire and Anderson connectors so I can adapt them for other uses with other controllers and batteries. Genasun makes controllers for LiFePO4 / Lead-Acid.

Features:

- MPPT BUCK technology
- DC Output Load with Low Voltage Disconnect (LVD)
- LED indicator for battery state of charge
- 99.85% Peak Efficiency
- High-speed MPPT Tracking (15 times per sec)
- Advanced electronic protection (over-temperature, panel overload, battery and panel switched, reverse battery polarity, reverse panel polarity, load short circuit)
- Advanced 2-stage charge profile for 4S LiFePO4
- Tiny self-consumption
- Radio Silence, HAM Radio friendly
- Made in the USA
- 10-Year Warranty

Specifications:

- Max. Recommended Panel Power: 65 W
- Rated Battery (Output) Current: 5 A
- Continuous Rated Load Current: 5 A
- Max Panel Voltage: 27 V
- Max. Recommended Panel Voc at STC: 22 V
- Min. Battery Voltage for Operation: 7.2 V
- Trickle Charge to Recover Dead (0V) Battery: Yes
- Charge Voltage CC/CV 14.2V (3.55 V per cell)
- Load Disconnect/Reconnect Voltage: 11 V / 12 V
- Operating Temp. Range: -40 °C - 85 °C
- Electrical Efficiency: 96-99% typical
- Operating consumption: 0.150 mA
- Night Consumption: 0.125 mA
- Environmental Protection: IP40, Conformal Coating, Nickel-Plated Brass & Stainless Hardware
- Connection: 4-position terminal block for 12-30 AWG wire
- Weight: 2.8 oz., 80 g
- Dimensions: 4.3" x 2.2" x 0.9"
- Certifications: CE, FCC, RoHS

https://www.gigaparts.com/genasun-5a-mppt-solar-charge-controller-for-lifepo4-batteries.html

Right: The Genasun solar charge controller

Product Review: Geochron Digital 4K Atlas 2

By Fred Kepner, K3FRK

I have admired the classic Geochron mechanical clock since the first time I laid eyes on one. As a child, I was fascinated both by mechanical objects and by maps. In elementary school, I begged my parents for a set of maps that could be pulled down from a canister on the wall, like the one my teacher had. One of my favorite aspects of ham radio has been learning where the stations I've made contact with are located. I figured the Geochron mechanical clock was the kind of thing that could entertain me endlessly and was exactly what I needed for my shack...until I went shopping and learned what kind of price a classic Geochron mechanical clock commands.

The Geochron Boardroom mechanical clock

After determining that a mechanical Geochron was out of the picture, I learned that Geochron made a digital version that only requires the user to supply a TV and an internet connection. That seemed like a great idea, but I quickly learned through my research that one really needs to have a 4K television to take full advantage of the features. Although the digital unit can operate at 1080P, the system is limited to a single lower resolution map that lacks many of the details of the 4K maps. I had a 32-inch 1080P television installed in my shack, so I put the idea of the Geochron Digital on the back burner.

In March, I finally decided to bite the bullet and upgrade my television so that I could add the Geochron Digital to my shack. I barely managed to squeeze a new 58-inch 4K TV into the space previously occupied by my 32-inch TV. I also added a very nice mount that allows me to move and adjust my new TV in every direction imaginable. Once I had the new TV mounted, I had the Geochron Digital up and running in just a few minutes. Right away, I was blown away at the detail of the map, the vibrant colors, and the incredibly neat features that could be customized and displayed. I will go into more detail on the various features later in this article.

It is important to mention that there are several versions of the Geochron Digital that have been produced, which can lead to some confusion. Occasionally a Geochron Digital will pop up on the QRZ or eHam classifieds, sometimes for a very attractive price. I have noticed that the sellers don't always list which version they are selling and some of the versions look nearly identical on the outside. The versions that I am aware of are the Geochron Digital 4K (Version 1), the Geochron Digital 4K Version 2, the Geochron Digital 4K Atlas, and the Geochron Digital 4K Atlas 2, which is the latest version. Although all versions run in 4K and some versions can be “upgraded” to newer versions, the hardware inside is different. The Geochron Digital is basically a very small computer running custom software produced by Geochron. The newest version is more capable of running the more demanding features, especially when multiple items are selected for display. If

Product Review: Geochron Digital 4K Atlas 2 (continued)

shopping in the classifieds, be very careful that you know exactly which version you are getting so that you aren't disappointed. If you aren't sure which version is for sale, ask the seller before buying. I purchased the newest version, the Atlas 2. Some of the specific features I discuss may not be compatible with the older models. If you already own an older Geochron, several hardware upgrade and trade-in options are available on the Geochron website.

What makes the Geochron Digital special are the various "layers" and tools that can be displayed. One of the most basic settings is which background map to display. Choices include maps such as one that looks a lot like the one on my elementary school teacher's wall (a colorful geo-political map), a topographic map, an oceanic map, and a map called "Ham Radio". The Ham Radio map displays CQ zones, country prefixes, and time zones on the map, as well as any of the additional features you toggle on. This is the map that I mostly use. Additionally, all maps are "live", meaning they scroll as the day goes on. Noon is at the center of the map, horizontally. As the day progresses, the map scrolls to the right. As I write this article, it is about 2:30PM so the west coast is displayed in the middle of my map. In another hour or two, Alaska will have moved to the middle of my map. All of the maps show the sunrise and sunset "grey lines" so you can see exactly what DX is on the grey line at the moment. I find it interesting to watch how the map changes over the course of weeks and months during the year. We recently had the Summer Solstice so the grey lines are angled to show the longer days in the northern hemisphere and shorter days in the southern hemisphere. In about 3 months' time,

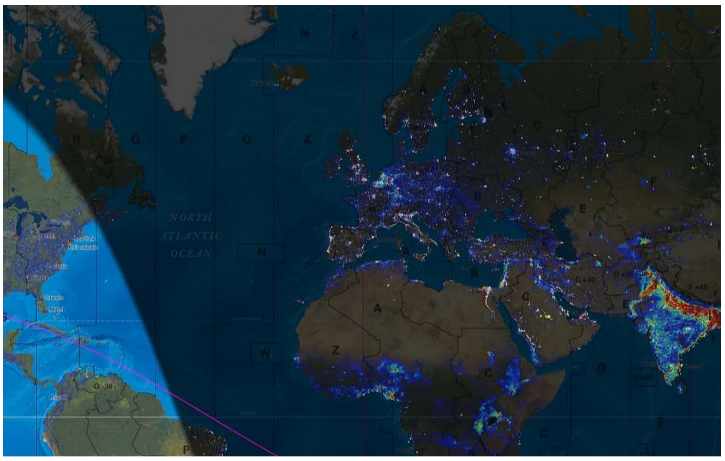
Image 1: K3FRK's Geochron Digital 4K Atlas 2 as displayed on the 58-inch 4K television in his shack.

Product Review: Geochron Digital 4K Atlas 2 (continued)

the grey lines will be vertical on the map, showing approximately equal length days in the northern and southern hemispheres. The grey lines and the movement of the background map are very similar to what you would see on a traditional mechanical Geochron. The majority of the remaining features that I discuss are unique to the digital version. The remaining features can be combined into one of three categories: static features, live features, and premium features. I'll go through a short explanation of each.

The static features include several sets of data that can be added to the basic map. The most interesting of these, to me, is the "Human Lights". With this setting, population densities are shown on the map, as shown in Image 2. This feature is most visible when areas are in the night cycle. This enables you to visualize where major cities are across the world (and places hams are likely to be). Other static features include the marking of shipping lanes, underwater cables, and air quality (static 2017 air pollution data).

The live features add moving markers to the map. One of the neatest live features, although not that useful, is the display of all commercial airplanes over a given continent (see Image 3). Due to the large amount of data, you can only show one continent at a time, but it is amazing to see how many flights are in the air at any given time. Other live features include the current



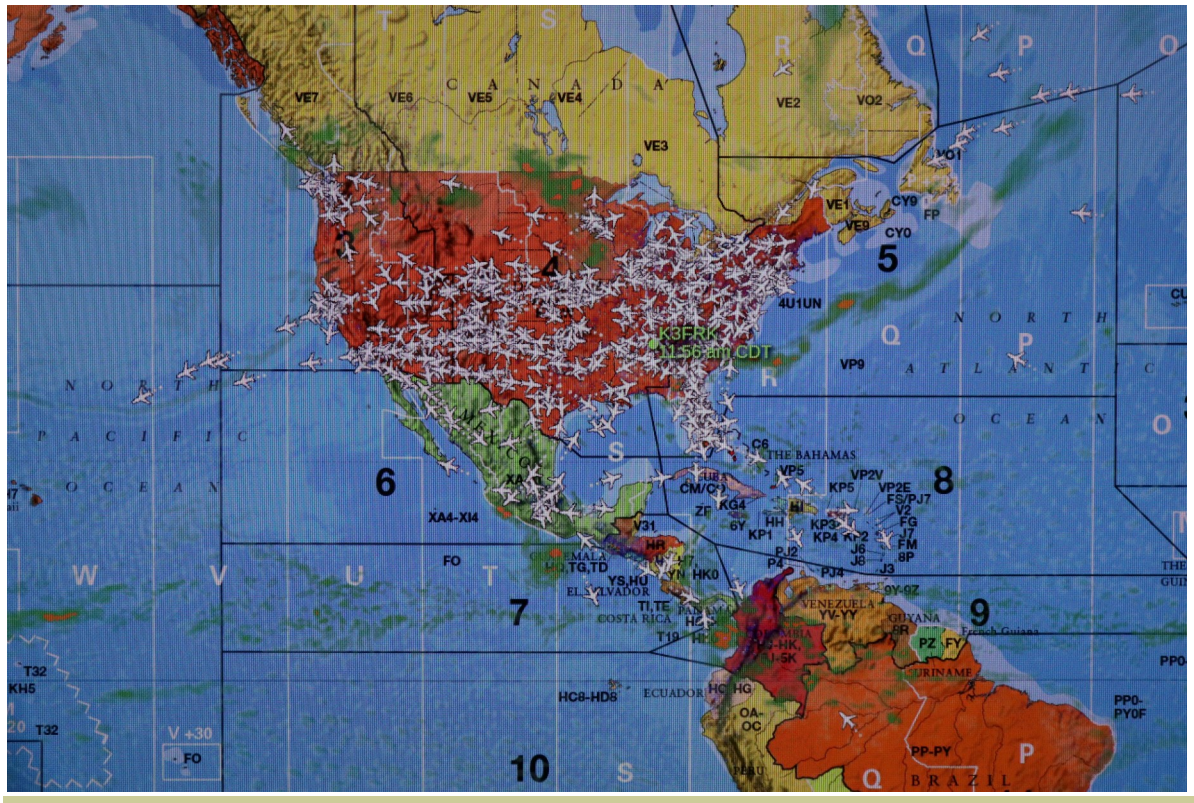


Image 2 (above): The "Human Lights" feature can be seen during the night cycle, as seen in EU, AF, and AS.

Image 3 (left): Live locations of commercial airplanes can be displayed.

Product Review: Geochron Digital 4K Atlas 2 (continued)

satellite weather, the locations of over 1,000 government and commercial satellites, the locations of the Hubble Space Telescope and International Space Station, the current phase of the moon, the locations of other Geochron users, and even the current densities of COVID-19 cases across the globe. There are a few other "live" features that you would also find on a mechanical Geochron, such as the current date and time, the international date line, and something called an "analemma". The analemma is a small graphic that shows the position of the Sun in the sky over the Earth, as seen from a fixed location on the Earth.

The above static and live features are all free, but Geochron also offers several subscription services, called "Premium" packages, such as the "Ham Radio Bundle". The other premium packages are the "Earthquake Layer" and the "Air Quality Layer". The price of the Ham Radio Bundle is $6.99 a month or $69.99 per year. This bundle adds display of Maidenhead grids and several live features such as tracking of AMSAT satellites, DX spotting, marking of the locations of your last 1,000 QSOs (via uploaded ADIF log file or automatically using your online QRZ log), solar-terrestrial weather, and graphical display of the current maximum usable frequency. Geochron offers a free 30-day trial of the each of the premium packages so you can give them a test drive before subscribing. Although I don't work satellites, I can see how that feature would be very helpful, it even includes circles around the satellites showing what areas should be able to access them. I particularly like the maximum usable fre-

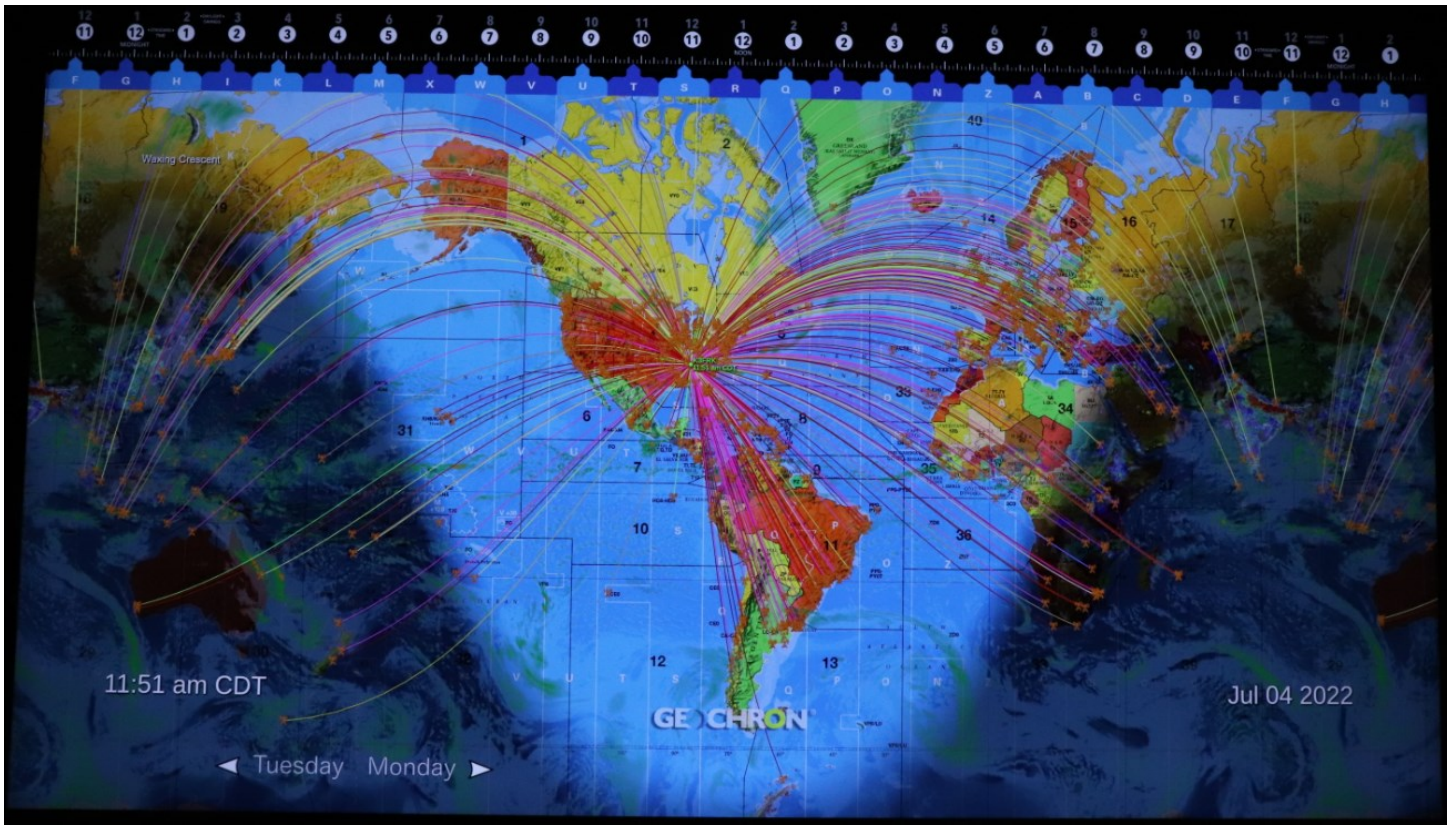


Image 4: The Geochron Digital can be set to automatically display your last 1,000 QSO's. The colors denote the band used for the QSO.

Product Review: Geochron Digital 4K Atlas 2 (continued)

quency map, the live weather/clouds, and the solar-terrestrial weather display but, as you can see in Image 6, the solar-terrestrial weather data is little more than what you could already find for free on hamqsl.com and is often displayed on ham websites such as dxsummit.fi. Although the Ham Radio package offers some neat features, personally, I would like to see it integrated into the included "free" features.

Like many modern radios and other electronics, the Geochron digital was designed to be software upgradeable, meaning features can be

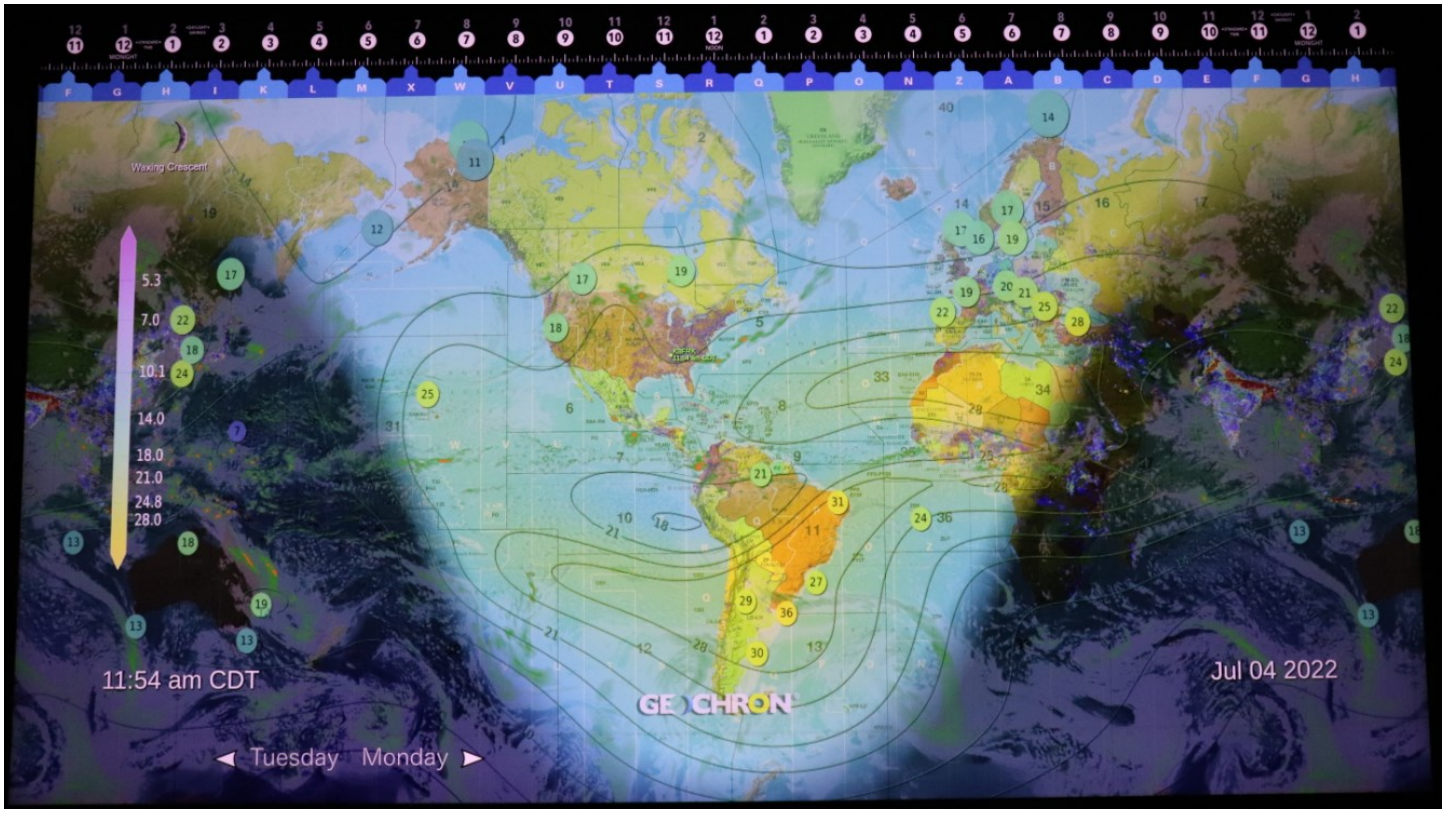
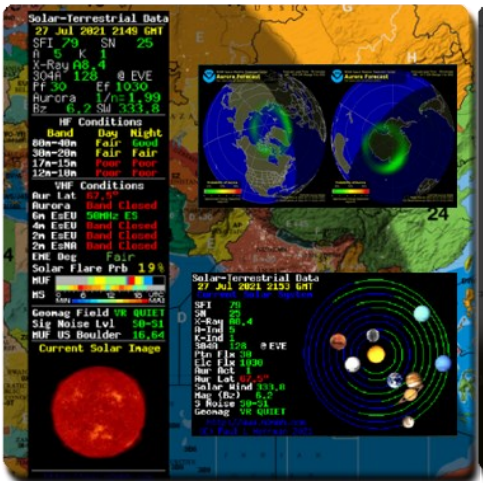
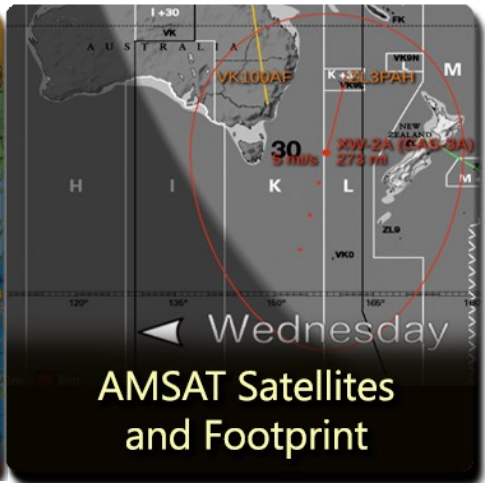
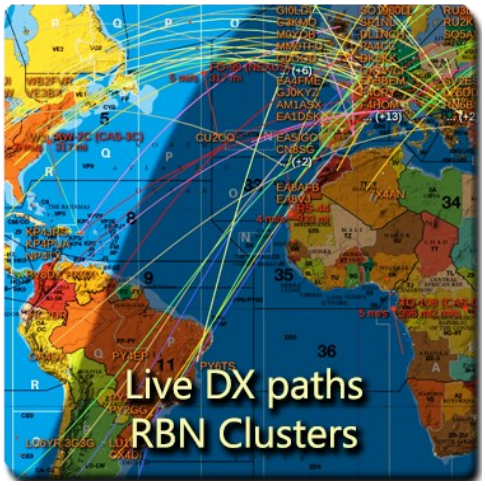


Image 5 - 8: The Ham Radio Premium bundle adds displays of Maximum Usable Frequency, Solar-Terrestrial Data, AMSAT info, and RBN Cluster information.







Product Review: Geochron Digital 4K Atlas 2 (continued)

added in the future via a simple-to-do update. It is highly recommended to have the Geochron connected to the internet as most of the extended features require an internet connection. The Geochron can connect via an ethernet cable or a Wi-Fi network. When connected, the Geochron will periodically check for updates and install them on its own. Basically, you can set it up and forget about it.

Installation of the Geochron is very easy. The unit comes with a short HDMI dongle, which is recommended to alleviate stress caused by the weight of the unit on the HDMI port of your television. Once you install the included batteries into the remote control and connect the power and HDMI cables to the unit, the Geochron will boot up and walk you through the simple setup. You should be up and running in less than 10 minutes. If you do have issues, Geochron's customer service can help. I experienced an issue a few weeks ago and contacted them via email. I received a personal response and we were able to fix my issue very quickly.

I have had my Geochron for a little over 3 months, and overall, I am very happy with it. The image is absolutely gorgeous. The pictures in this article do not do it justice. Does it provide any information that couldn't be found on a website using the computer in my shack? Not really, but for a map geek like me, it is even better than the map my teacher had way back in elementary school. If you have the wall space available to mount a large TV, you won't be disappointed with the Geochron Digital 4K.

The Geochron Digital 4K Atlas 2 currently sells for $449 and is available at Gigaparts, DX Engineering, and Ham Radio Outlet.

Images 9 and 10: The Atlas 2 and included remote

Meeting Minutes
June 7, 2022
By Chris Reed, AI4U

Meeting Minutes - June 7, 2022 - provided by Chris Reed, AI4U

- Bob, K8KI called the June 7th meeting of the North Alabama DX Club to order at 6:30pm.
- A discussion was held about the recent 6m opening and band conditions.
- Chris, AI4U reported 15 banquet tickets had been sold so far and provided an update on the finances. Approximately, $8500 is in the bank.
- Bob, K8KI asked the membership to help with several endeavors including audio at the meetings, help with the Elks and the banquet. He also asked for volunteers to shuttle prizes from VBC to the Elks Club after the hamfest for the evening banquet. Costs for catering were high in his opinion.
- Bob reported that nine people present from the club went to Hamvention.
- The Dxpedition committee of Chuck N4NM, Rob NN4NT, and Bruce AC4G had met and came up with a list of most wanted. A motion was made and seconded to follow the recommendation of the committee.
- Bob announced that Larry K4AB, Chuck N4NM, and Chris NV4B were all winners in various divisions of recent contests.

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Financial Report
By Bob DePierre, K8KI

I'm displaying the financial report in a different format this month. For many years, we voted on a budget each year (the constitution required that), and then threw it out the next day (the constitution didn't say anything about that). We never paid any further attention to the budget, and either voted on new expenses, or just rationalized that we had plenty of money in the bank anyway. The banquet, which was meant to be the fund raiser for DXpeditions, has long been a money loser.

Situations like this just drive me nuts. I'm the ultimate financial conservative. You may remember the long budget discussion at our Jan meeting. We eventually voted on a budget. I intend to execute exactly that. There will be no more votes on unexpected expenses. If those issues come up, and emergencies/ opportunities do come up, I'll send them to committee. We will then decide on what the committee finds. We're lucky to have a good bank balance at the moment, and I have no intention of squandering it.

The new format has 3 columns of numbers. The first column is the budget we decided upon. Those numbers won't change for the rest of the year. The middle column shows what happened during the recent past month. It also shows the beginning and ending bank balance for the month. The third column shows the totals for the year. Actually, the Bank Delta at the end of the year is my real report card – I intend

Club Business and Announcements (continued)

to drive us to what we decided in the budget (i.e., bank balance goes up by $2 at end of year).

Please tell all the hams you know that this year we lowered the banquet price by $2, even in the face of all the inflation we've seen this year. You won't find that anywhere else. But with proper management we can pull it off and still be able to fund DXpeditions at a record level. But note that we have only sold 35 tickets so far, and we're running out of time. We've got to sell 125 tickets. If you haven't bought yours yet, please help us out. The NADXC members have a poor historical record of banquet attendance.

So, here's my financial report. Comments are requested.

2022 NADXC Officers and Directors

President	Bob DePierre, K8KI
Vice-President	Steve Molo, KI4KWR
Sec./Treasurer	Chris Reed, AI4U
Directors:	Bruce Smith, AC4G
	Fred Kepner, K3FRK
(Ex-Officio)	Steve Werner, AG4W

How to Join

Come to a club meeting or send in an application by mail (form on www.NADXC.org)

This edition of The LongPath published by: Fred Kepner, K3FRK

NADXC Financial Report			June, 2022	
Budget Category	Targets	June Activity	Year to Date	
Year Start	$7,521			
Month Start		8962.04		
Dues In	720		868.70	61 members
Recurring Exp	-668		-216.88	
Sales	300		300	
Miscellaneous			110	
Discretionary Exp	-1000			
DX Banquet	650			
venue		-325	-325	
food				
speaker				
tickets		825.99	1205.23	35 tickets
Bank Delta	2		1962.05	
Month End		9463.03	$9,463.03	

Upcoming DX Contests

By Chuck Lewis, N4NM

IARU HF World Championships (SSB/CW), 160 - 10M

July 9, 1200Z to July 10, 1200Z

Exchange: RS(T) plus ITU zone; IARU HQ stns send HQ abbrev.

See page 78 July QST and https://www.arrl.org/iaru-hf-world-championship

Russian Radio Team Championship (SSB/CW), 40 – 10M

July 16, 0700Z to July 16, 1459Z

Exchange: RS(T) + ITU zone or 3-char. Code

See page 78, July QST and www.srr.ru/chempionat-rossii-po-radiosvyazi-na-kv-rrtc

RSGB IOTA Contest (CW/SSB), 80 - 10M

July 30, 1200Z, to July 31, 1200Z

Exchange: RS(T), S. N., & IOTA# if island

See page 78 July QST and www.rsgbcc.org/hf

CANCELLED European HF Championship (CW/SSB), 160-10M

August 6, 1200Z to 2359Z

Exchange: RS(T) plus year first licensed

See: https://euhf.s5cc.eu/euhfc_rules/

Worldwide Sideband Activity Contest, 160 – 6M

July 12, 0100Z to 0159Z

Exchange: RS plus age group (OM, YL, Youth, Youth YL)

See: https://wwsac.com/rules.html

WAE DX Contest, (CW), 80 - 10M

August 13, 0000Z, to Aug. 14, 2359Z

Exchange: RS(T) plus Serial #

See: http://www.darc.de/referate/dx/contest/waedc/en/rules/

OTHERS:

10-10 Int. Summer Contest, SSB, 0001Z, Aug 6 to 2359Z, Aug 7

SARL HF Phone Contest, 1400Z-1700Z, Aug 7

Dates & times often change or are misprinted in the journals; beware.

DXpeditions in July 2022

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Start Date	End Date	DXCC Entity	Call	QSL via	Info
2022					
July					
2022 Jul01	2022 Jul05	Fernando de Noronha	ZY0FUN	LoTW	By PY2RN; 40-6m; CW FT8; also satellites; holiday style operation; QSL via Club Log OQRS
2022 Jul01	2022 Jul12	Namibia	V5	LoTW	By HB9BFM as V5/HB9BFM fm Luderitz (JG73ni) and Simplon/Sandverhaar (JG83qe); 80-15m; QSL via HB9BFM (B/d)
2022 Jul04	2022 Aug04	Nicaragua	YN2RP	LoTW	By NN3RP; 40-10m; CW SSB + digital; QSL via NN3RP
2022 Jul05	2022 Aug02	Nicaragua	YN2RP	LoTW	By NN3RP; HF; SSB CW + digital; QSL via NN3RP direct; holiday style operation
2022 Jul06	2022 Jul13	Dodecanese	SV5	OK2PYA Buro	By OK2PYA as SV5/OK2PYA fm Rhodes (IOTA EU-001); 40-10m; CW SSB
2022 Jul07	2022 Jul14	Monaco	3A	LoTW	By F6EXV PB8DX as 3A/F6EXV and 3A/PB8DX; HF; 3A6M on 6m; QSL via Club Log OQRS
2022 Jul10	2022 Jul16	Tonga	A35JP/p	LoTW	By JA0RQV fm Niuatoputapu I (OC-191)); 80-6m; CW SSB FT8; QSL via JA0RQV (B/d, d w/ SASE); exact dates subject to change
2022 Jul13	2022 Jul20	St Martin	FS	eQSL	By W7NZJ as FS/W7NZJ; 20-10m; ditigal; 100w; Buddistick
2022 Jul14	2022 Jul21	South Cook Is	E51RMP	ZL4TE	By ZL4TE fm Rarotonga I (IOTA-013); HF; QRP
2022 Jul18	2022 Jul19	South Cook Is	E51RMP	ZL4TE	By ZL4TE fm Aitutaki I (IOTA-083); HF; QRP
2022 Jul23	2022 Jul28	Alaska	K7K	N7RO	By KL5CX N3QQ N7QT NL8F W8HC fm Kiska I (IOTA NA-070, RO81sw); 40-6m; CW, SSB and FT8 (f/h); 3 stations
2022 Jul27	2022 Jul30	Honduras	HR	LoTW	By K6VHF as K6VHF/HR9 fm Roatan I (IOTA NA-057); 80-6m; FT8 CW SSB; QSL via K6VHF
2022 Jul27	2022 Aug07	St Kitts & Nevis	V47JA	LoTW	By W5JON fm Calypso Bay; 160-6m, incl 60m; SSB FT8; yagi, verticals; QSL also OK via W5JON direct
RSGB IOTA Contest (Jul 30-31, 2022) Check here for pericontest activity too.					
August					
2022 Aug05	2022 Aug09	Rodrigues I	3B9	TBA	By 3B8FA 3B8GF 3B8CF 3B8FV 3B8BAN; HF; 100w; G5RVs; also 3 QO-100 portable satellite stations
2022 Aug07	2022 Aug20	Tonga	A35JP/p	LoTW	By JA0RQV fm Niuafo'ou Island (OC-123)); 80-6m; CW SSB FT8; QSL via JA0RQV (B/d, d w/ SASE); exact dates subject to change
2022 Aug08	2022 Aug18	St Kitts & Nevis	V4	NT5V	By NT5V as V4/NT5V fm St Kitts; HF; CW SSB FT8
2022 Aug08	2022 Aug20	Maldives	8Q7AG	LoTW	By IZ2DPX fm IOTA AS-013; HF + 6m; SSB + digital; 100w; vertical; QSL via Club Log OQRS