

## News from



## The GLORIOUS SOCIETY OF THE WORMHOLE

October 2018

### Hello Worms

Hi Worms,

A friend call me a while back and said he was looking for something to do after retiring and had gotten his General license. He had just heard from a mutual friend that I am a ham. Cliff has lived in Tallahassee for many years being a professor at Fla State. We have seen each other rarely in the last twenty years so he did not know I have been a ham. The conversation was interesting because he was on his own. No club or even an acquaintance being a ham. He had some kind of hidden wire antenna although I never did understand totally what it was. He was living in an apartment. He was learning on the web. Well we tried a QSO and it just did not work. One of those microphone in one hand and the phone in the other. He could hear me find but I heard nothing from. Well we gave up then but exchanged emails since. I encouraged him to join a club. I just got an email from him after about a month of silence. They have moved to a new address and he said he has a 135 foot end fed antenna and it seems to be working. We have a schedule tomorrow so I will update this before sending out the newsletter.

Talk-in is on the Wormhole repeater system. For those coming to the meeting who cannot hit the repeater we will also monitor the Honeywell club repeater on 443.050 +141.3.

Bring a folding chair for the meeting if you have one.

**\* SCIENTIFIC AMERICAN REPORTS THAT RADIO WILL SOON BE USED TO TRANSMIT MUSIC TO THE HOME\***

THIS DAY IN HISTORY, October 1, 1920, *HISTORY.COM*

In an 1888 novel called *Looking Backward: 2000-1887*, author Edward Bellamy imagined a scene in which a time-traveler from 1887 reacts to a technological advance from the early 21st century that he describes as, "An arrangement for providing everybody with music in their homes, perfect in quality, unlimited in quantity, suited to every mood, and beginning and ceasing at will." In Bellamy's imagination, this astonishing feat was accomplished by a vast network of wires connecting individual homes with centrally located concert halls staffed round-the-clock with live performers. As it turned out, this vision of the year 2000 would come to pass far sooner than Bellamy imagined, and without all the pesky wires. On this day in 1920, *Scientific American* magazine reported that the rapidly developing medium of radio would soon be used to broadcast music. A revolution in the role of music in everyday life was about to be born.

"It has been well known for some years that by placing a form of telephone transmitter in a concert hall or at any point where music is being played the sound may be carried over telephone wires to an ordinary telephone receiver at a distant point," began the bulletin in the October 1, 1920 issue of the popular science monthly, "but it is only recently that a method of transmitting music by radio has been found possible."

Arguments about radio's origins persist to this day, but its basic workings had been understood for upwards of 20 years at the time of this announcement. It was only in the years immediately following [World War I](#), however, that radio made the transition from scientific curiosity to practical technology. By late 1919, experiments had begun in Britain, the United States and elsewhere that would lead to the breakthrough use of radio not just as a replacement for the telegraph, but as a communications and entertainment medium.

ADVERTISEMENT

Some of those experiments were taking place in the laboratory of the National Bureau of Standards in [Washington](#), D.C., where station WWV was established to test various means of radio transmission. Relying significantly on amateur radio operators in the local area for feedback on its experiments, the Bureau began successfully testing the transmission of music in late 1919 and early 1920. It was those experiments that led to the public announcement in *Scientific American*.

"Music can be performed at any place, radiated into the air through an ordinary radio transmitting set and received at any other place, even though hundreds of miles away," the report continued, noting that "the music received can be made as loud as desired by suitable operation of the receiving apparatus." "Experimental concerts are at present being conducted every Friday evening from 8:30 to 11:00 by the Radio Laboratory of the Bureau of Standards....The possibilities of such centralized radio concerts are great and extremely interesting."

## **\* EXPLAINED: DIFFERENCE BETWEEN DARK WEB, DEEP NET, DARKNET AND MORE\***

*INFOPACKETS* by John Lister on September, 11 2018

Have you heard of the Deep Web, Dark Net, Dark Web, or Dark Market while surfing the Internet? What is the difference? Is there a difference?

In each case, these are technical terms used to describe various parts of the Internet that are not normally accessible to users using a standard web browser. Below we'll describe the differences using easy to understand key examples.

### **Deep Web**

In the most simplest terms, the Deep Web is any web page that is not indexed by a search engine.

Let's look an example. A Deep Web can be your bank account details, after you've logged in securely to your online banking website. While the online banking site can be seen by the general public (and its website name and address indexed by a

search engine), what cannot be seen by the public is the information available after you are securely logged in.

Other examples of the Deep Web include using the TOR Browser to access .onion websites which are neither indexed by Google or available using a standard web browser.

## **Dark Net or "Darknet"**

In its original meaning, the Dark Net refers to any device connected to the Internet which has an IP address, but has no active services running on that IP address.

In terms of total available IP addresses online using IPv4 (Internet Protocol version 4), there are 4.3 billion possible IP addresses available for use, while IPv6 has a total of  $2^{128}$ , or 340,282,366,920,938,463,374,607,431,768,211,456 IP addresses.

Let's look at typical, but technical example of a Dark Net.

The Infopackets website runs on a server located in Buffalo, New York, operated by a web server hosting company. Like many dedicated web servers, this machine has been assigned a subnet of publicly available IP addresses in a CIDR range, denoted by 23.250.11.136/29.

The IP address range is therefore 23.250.11.136 to 23.250.11.143, though the first two addresses (23.250.11.136 and 23.250.11.137) are reserved for the network and gateway, while the last IP (23.250.11.143) is reserved for broadcasting. That leaves a total of 5 IP addresses available for use (23.250.11.138 to 23.250.11.142).

If you were to **ping infopackets.com** using an administrative command prompt, the Infopackets server will respond with an IP address of 23.250.11.141 because that IP has been assigned to run the apache web server which serves web pages, like the one you're viewing now.

Also assigned is a name server service (responsible for mapping IP addresses to services on the Infopackets server), which operates on 23.250.11.142 and is publicly named ns2.infopackets.com. If you were to ping the remaining IPs

(23.250.11.138 to 23.250.11.139), there would be no response because those IP addresses have not been assigned to any services.

With that said, the Dark Net is often used interchangeably with Dark Web, even if this isn't always strictly accurate.

## **Dark Web**

The Dark Web on the other hand refers to a specific section of the Deep Web.

The Dark Web isn't just hidden from search engines, but instead is specifically designed to be inaccessible from most web browsers. Usually it requires special browsing software, which makes it harder to track the path data takes online.

In the early days of the Dark Web, a service called "The Silk Road" was used which allowed users to sell illicit items using a black marketplace, including money laundering, computer hacking, the sale of drugs. That service has since been shut down in 2013 by the FBI, but there are other, similar services being used online even today.

## **TOR Network**

The TOR Network is the best known software for accessing many sites on the Dark Web.

TOR stands for **The Onion Router**, which refers to an analogy about onions having multiple layers of skin. In simple terms, data going through the TOR network doesn't take the most efficient route, which is normally the main goal of the Internet.

Instead, TOR traffic is routed through multiple points in a random order, with layers of encryption added or removed at various stages. The effect is that the data takes longer to travel, but it's much harder to track who is visiting which page. The TOR network itself is run by relay volunteers around the globe.

The reasons users want to use the TOR network vary widely.

## **Darknet Market**

A Darknet Market is a site on the Dark Web used for making transactions.

Payment for items is usually done using cryptocurrencies, a form of virtual currency where an accurate record of transactions is available, but the identity of the participants is secret. Most such markets have a rating and feedback system like eBay's. The vast majority of goods and services offered on the Darknet are illegal to buy and sell in many places.

## **Legality**

While rules vary around the world, as a general principle visiting the Deep Web or Dark Web is not illegal. Neither is using deep web technologies such as TOR to anonymize web use. However, anyone using a Darknet Market remains subject to local laws, depending on what you can and can't buy, sell, ship or possess.

## **\* 159 YEARS AGO, A GEOMAGNETIC MEGA-STORM\***

Spaceweather.com September 2

**GEOMAGNETIC MEGASTORM:** On Sept. 2, 1859, a powerful CME rocked Earth's magnetic field, causing a geomagnetic storm that set fire to Victorian telegraph offices and sparked auroras as far south as Mexico and Cuba. Now known as the "Carrington Event," that megastorm 159 years ago is a touchstone of modern extreme space weather research. What are the odds it could happen again?

Picture this: A billion-ton coronal mass ejection (CME) slams into Earth's magnetic field. Campers in the Rocky Mountains wake up in the middle of the night, thinking that the glow they see is sunrise. No, it's the Northern Lights. People in Cuba read their morning paper by the red illumination of aurora borealis. Earth is peppered by particles so energetic, they alter the chemistry of polar ice.

Hard to believe? It really happened--exactly 159 years ago.

As the day unfolded, the gathering storm electrified telegraph lines, shocking technicians and setting their telegraph papers on fire. The "Victorian Internet" was

knocked offline. Magnetometers around the world recorded strong disturbances in the planetary magnetic field for more than a week.

The cause of all this was an extraordinary solar flare witnessed the day before by British astronomer Richard Carrington. His sighting on Sept. 1, 1859, marked the discovery of solar flares and foreshadowed a new field of study: space weather. According to [a NASA-funded study](#) by the National Academy of Sciences, if a similar "Carrington Event" occurred today, it could cause substantial damage to society's high-tech infrastructure and require years for complete recovery.

Could it happen again? Almost certainly. In a paper published just a few months ago, researchers from the University of Birmingham used Extreme Value Theory to estimate the average time between "Carrington-like flares." Their best answer: ~100 years. In other words, we may be overdue for a really big storm. Read their original research [here](#).

## **\* MULTI-BAND ANTENNAS\***

I have been publishing this technical article since January of 2013. For the past 39 years I have manufactured the Isotron Antennas. This also involved helping many with their very difficult installations. Some of the information will be from what we learned solve these problems. Some information will be right from a text book or credible article. You are welcome to contact me at [wd0eja@isotronantennas.com](mailto:wd0eja@isotronantennas.com) with questions you may have.

Many antennas used will resonate on more than one band. This is good, it saves a lot of space and can make the installation easier. What are some of the techniques for multi-band antennas?

Some of it can be the nature of the antenna. A 1/2 wave dipole will work well on the third harmonic. For example, a dipole cut to resonate on 7 Mhz can work also on 21 Mhz. Here you have a two band antenna with little effort. Regretfully these are the only two amateur HF bands that the third harmonic hits. A 3.5 Mhz dipole will come close to 10 Mhz for the 30 meter band if you are desperate.

How can you get the other bands you want to use?

One way is the Fan dipole. This is an antenna with a dipole for each band. As an example, consider 80, 40 and 20 meters.

The feed point of each dipole is connected together at one point. The center side of the coax is connected to all three dipoles on one side of the dipole. The shield side of the coax is connected the same way to the other side of the dipole.

The ends of each dipole will fan out or suspend from the dipole of the next lower frequency antenna. Spacing is not critical, but you would want several inches of spacing.

Now comes your knowledge of resonance. There will be some interaction to the antennas which will make the size of each dipole a little different than the formulas predict. Therefore, locate the resonant point for each dipole. If you are using a fancy analyzer, use the SWR mode only at the end of the coax that you plan to use. The length of the coax will have an affect on your results.

Scan the band you are testing and locate the minimum SWR. Then, adjust the length of the dipole to raise or lower that point where you want it.

Then go to the next antenna. You may have to do this several times to get all the antennas to resonate where you want. With an 80, 40, 20 set up you can have four band capabilities because 15 meters will work also.

What is the principal. When one antenna is resonant with a signal put into it, the other antennas are so far out of whack that they will look like an open circuit. Your transmitter or receive will mostly see one resonant antenna.

This is how we accomplish multi-bands with the Isotrons and it is a whole lot easier to work on. (Had to put in a plug.) Working on an antenna like this will give you good experience on locating the resonant points. This will be beneficial with most antenna work.

73,  
Ralph WD0EJA

## \* NO WWVB? NO PROBLEM!\*

KB6NU Ham Radio Blog, Posted: 31 Aug 2018

Lately, there's been a big flap about the NIST time standard stations going off the air. Personally, I'd be kind of ticked off if this happened. I don't use WWV and WWVH so much anymore, but I do have several clocks in my house that use the WWVB time signals. In fact, I recently purchased a couple of clock mechanisms from Klockit to convert even more of my clocks.

If you're not familiar with the station, here's how Wikipedia describes WWVB:

**WWVB** is a time signal radio station near Fort Collins, Colorado and is operated by the National Institute of Standards and Technology (NIST).

Most radio-controlled clocks in North America use WWVB's transmissions to set the correct time. The 70 kW ERP signal transmitted from WWVB is a continuous 60 kHz carrier wave, the frequency of which is derived from a set of atomic clocks located at the transmitter site, yielding a frequency uncertainty of less than 1 part in  $10^{12}$ . A one-bit-per-second time code, which is based on the IRIG "H" time code format and derived from the same set of atomic clocks, is then modulated onto the carrier wave using pulse width modulation and amplitude-shift keying. A single complete frame of time code begins at the start of each minute, lasts one minute, and conveys the year, day of year, hour, minute, and other information as of the beginning of the minute. WWVB is co-located with WWV, a time signal station that broadcasts in both voice and time code on multiple short wave frequencies.

Anyway, if WWVB goes off the air, all of the clocks that use this signal will lose sync and have to be manually set, UNLESS you build one of the projects below:

- [μWWVB: A Tiny WWVB Station](#). This project uses an attiny44 microcontroller and a USGlobalSat EM-506 GPS module to simulate WWVB.
- [One Component Radio Clock Time Transmitter](#). This project uses an attiny45 microcontroller to simulate WWVB. As is, you set the time by changing some defines in the code. You'll probably want to change that to get the time variables from a GPS source or an ntp source, but at least you'll be able to generate the 60 kHz once you have that time information.

Both of these projects note that the transmitter range is not very great, so you'll have to set the clocks very near the transmitter to get them to receive the signal. Even so, these look like great alternatives to keeping the clocks in operation should WWVB actually go off the air. With a little experimentation, you might even be able to extend the range of your transmitter and not only provide the time signal throughout your house but throughout your neighborhood as well.

Appeared first on [KB6NU's Ham Radio Blog](#).

## **\* VIZIO TVs SPIED ON USERS AND SOLD THE DATA**

*INFOPACKETS* John Lister on September, 13 2018

Smart TV sets that passed on user data without permission might have to display a message suggesting users sue the manufacturers. It's an unusual proposal in a class action lawsuit.

Last year Vizio agreed to pay \$3.7 million in fines to settle investigations by the Federal Trade Commission (FTC) and the New Jersey attorney general. The TVs in question used Internet connectivity (providing the TV was connected to Internet access at the home by the user), which then utilized a feature called "Smart

Interactivity". Though the feature was enabled by default, users could switch it off but likely wouldn't have done so given the description that it "enables program offers and suggestions."

In fact, the TV set was using a highly creative technique of analyzing the individual pixels in a selection of the screen and then matching it to an industry database of movies and TV shows - the same technology used for spotting illegal uploads on sites like YouTube.

### **User Behavioral Details Sold To Advertisers**

The technique meant the set could figure out what the users were watching, regardless of whether it was on a TV station, a streaming service or a disc. Vizio then sold details of what shows users had watched along with their IP addresses. That meant, for example, that advertisers could use it to deliver customized ads on websites.

The fines only covered punishment for breaches of the rules, rather than compensations for users whose privacy was violated. That meant a class action lawsuit inevitably followed.

As is usual in such cases, the plaintiffs and defendants work together to notify everyone who might be part of the class action case - a potential 11 million people in this case. The notification is important as usually people are automatically included unless they opt out. By remaining included, they qualify for a share of any damages but lose the right to bring an individual case.

### **Message Wording To Be Determined**

The law says the notifications have to be sent in the most practical and effective way. Normally these days that means emails, with newspaper ads as a back-up in case anyone is missed out.

However, the two sides have agreed in principle that as the televisions are connected to the Internet, Vizio can make them display an on-screen message detailing the lawsuit. The deadline for the notification has been put back a few

weeks to allow time to develop a suitable wording and test that the messages can be delivered.

It's not clear if this will be the only method of notification. That would seem unlikely as some users will have replaced their TV sets since the breaches.



### \*CLUB MEETING\*

The next club meeting is October 6th. We meet on the first Saturday every month at 11:00 Saturday morning at the Minnreg Building located at 6340 126th Ave N, Largo. Members are welcome to come in the rear area through the fence gate on the southeast corner of the property. Talk-in is on the Wormhole repeater system. For those coming to the meeting who cannot hit the repeater we will be monitoring the Honeywell club repeater on 443.050 +141.3. We will keep an eye peeled for you. We will take advantage of the cooking facilities with an after-the-meeting Social and Wormdog picnic.



### \*CLUB NETS\*

Check in on the club net Thursdays at 1930 and 1945. 2M at 146.850 – with a tone of 146.2. At 1945 or at the end of the 2M net 53.150 – 1MHz offset 146.2 tone. We are always looking for volunteers to be the net control operator. Anyone interested, talk to one your club officers.



### **\*LOCAL NETS\***

#### **MONDAY**

1730 147.030 + Receiver sites and tone info <http://www.qsl.net/wd4scd/> St  
Pete Yacht Club ARC

1830 147.060+ no tone St Pete ARC daily net St  
Petersburg

1900 144.210 USB CARS, vertical polarization  
Clearwater

1900 147.135 +146.2 Zephyrhills ARC  
Zephyrhills

2000 147.165+ 136.5 Brandon ARS from  
Brandon

2000 50.135 Pinellas ARK  
Pinellas County

2030 NI4CE system EAGLE Net, NTS traffic net, NI4CE  
system

2030 145.450 Pinellas ARK  
Pinellas County

## TUESDAY

1830 147.060 no tone Petersburg	St Pete ARC daily net	from St
1900 50.200 USB Brandon ARS	6M net	
1900 28.450 Clearwater	WCF section net	
1900 NI4CE system system	WCF Section VHF ARES	NI4CE
1930 145.170 & 442.4 both pl 156.7	Pinellas ACS net	Clearwater
1930 444.900 +141.3	Sheriff's Tactical ARC	Tampa
2000 NI4CE system system	WCF Skywarn net	NI4CE
2000 147.105+ 146.2 Tampa	Tampa ARC net	from
2000 28.365 USB ARS	simplex	Brandon
2030 NI4CE system system	EAGLE Net, NTS traffic net	NI4CE
2100 28.465 USB	10/10 net	from Orlando

## WEDNESDAY

1830 147.060 no tone Petersburg	St Pete ARC daily net	from St
1930 52.020 simplex Petersburg	Suncoast 6'ers	from St
1930 NI4CE system system	WCF Section Digital Info Ne	NI4CE

2000 147.105 146.2 Tampa	Greater Tampa CERT net	from
2000 146.97- 146.2 Clearwater	Clearwater ARS	from
2030 NI4CE system system	EAGLE Net, NTS traffic net	NI4CE
2100 NI4CE system affiliated	Tampa Bay Traders Net	non-

### **THURSDAY**

1800 146.52 simplex Tampa	Hillsborough ARES/RACES	North
1830 147.060 no tone Petersburg	St Pete ARC daily net	from St
1900 444.750 +146.2 Tampa	Fusion net	from
1915 224.660- no tone Petersburg	St Pete ARC	from St
1930 146.6385 -127.3 Lakeland	Lakeland ARC	from
1930 444.225 + 146.2 Tampa	Hillsborough ARES/RACES	from
1930 146.850- & 442.625+ both pl 146.2 Petersburg	Wormhole	from St
1945 53.150 -1MHz 146.2 Petersburg	Wormhole	from St
2030 NI4CE system system	EAGLE Net, NTS traffic net	NI4CE

## FRIDAY

1830 147.060 no tone  
Petersburg St Pete ARC daily net from St

2030 NI4CE system  
system EAGLE Net, NTS traffic net NI4CE

## SATURDAY

0730 3.940 (7.281 Alt.)+/- QRM  
WCF WCF Section HF Net from

1830 147.060 no tone  
Petersburg St Pete ARC daily net from St

2030 NI4CE system  
system EAGLE Net, NTS traffic net NI4CE

## SUNDAY

0800 3.933 Florida Traders Net non-affiliated

1830 147.060 no tone  
Petersburg St Pete ARC daily net from St

1930 NI4CE system  
system WCF Section Net NI4CE

2000 147.550 simplex  
Pinellas County 550 Simplex Net

2030 NI4CE system  
system EAGLE Net, NTS traffic net NI4CE

2100 144.210 USB  
orientation Clearwater ARS vertical



## **\*FOR SALE / WANTED\***

Anyone having something for sale or who might be looking for an item let me know. I will not print phone numbers or email addresses unless specifically told to since this newsletter might end up on the web. The exception is when I get the information off the web. If you are a member of the Wormhole then you have all the information you need on a club roster and if you are not a member .. why not? OK, if you are not a member you can contact me at the email address at the end of this newsletter, I will give you the information to contact the person involved.

### **FOR SALE, all the following from Ray KD4HUW**

+Yaesu FT-857 with separation kit, MH-59 remote microphone, LDG FT\_Meter and LDG-YT tuner all for \$725.00

+Icom AH-4 antenna tuner for \$175.00

+Yaesu dual band Mobile Radio (ft-7900R) New-in-the-box (never opened) for \$265.00

+Hustler antenna parts: Bumper mounting kit; 54" foldable mast with quick disconnect; Resonators RM-75, RM-40 and RM-15. All for \$75.00

**FOR SALE**, New MFJ TNC 1270X, never used in original box with manual and cables. \$30. Dean Sever W8IM

**FOR SALE**, Mosley TA-33M 10-15-20M beam with the 40M add on kit. Antenna is on the ground and in good shape. There are several parts that need replacement. The 40M kit is new in box. Antenna is broken down into six or seven feet sections so easy to handle. Asking \$300, talk to me, Bill AG4QX at arrl dot net or see me at the meeting.

**FOR SALE**, Cushcraft A4S 10-15-20M beam, on the ground. There are several parts that need replacement. Asking \$250, talk to me, Bill AG4QX at arrl dot net or see me at the meeting.

**FOR SALE**, 13 element, 14.5 ft 220 beam. Wormhole property, \$20, contact Bill AG4QX or any other officer. **Free to any Wormhole member or other club.** Pickup at Bill's house.

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**\*HAMFESTS\***

**September 22** Odessa, **Pasco County Hamfest**, Gunn Highway Flea Market, 2317 Gunn Highway, talk-In on 145.350 no tone, contact Don Nystrom , KA2KDP at 727-868-0176, the website was down last time I tried it. <http://sarcf1.com>

**October 27** New Port Richey, **Gulf Coast ARC Fall Hamfest**, Millennium Academy, 10005 Ridge Road, **talk-in on** 146.67 no tone, \$5 includes tailgate, for more information goto <http://gulfcoastarc.org/2018/07/01/fall-hamfest-2018/>

**November 3** Lakeland, **LARC Hamfest** Revolution Church of Lakeland, 7315 Kathleen Road, Talk-In on 146.685 tone 127.3, For info contact Kevin Rought , N4KWR 863-393-4336 <http://lakelandarc.org>

**November 10** Pinellas Park, **SPARCFest**, admission FREE, tailgate free, Freedom Lake Park, 9990 46th St N, Southeast corner of US 19 and 49<sup>th</sup> Street, Talk-in on 147.060+ no tone. VE testing at 0900. For more information go to <http://www.sparc-club.org/sparcfest.html>

**December 7 & 8** Plant City, the **2018 Tampa Bay Hamfest is the West Central Florida Section Convention, Friday and Saturday, at the Expo Building in the Strawberry Festival grounds, advanced admission \$9, at the door \$10, for information contact Bill Williams AG4QX, chairman@fgcarc.org or go to <http://www.tampabayhamfest.org> or you can just ask me, Jim or Dee at a meeting ;-)**

**2019**

**February 8-10** **Orlando Hamcation and State Convention**, Central Florida Fairgrounds, 4603 West Colonial Drive, Tickets \$15 in advance, \$17 at door. Talkin 146.4760 - no PL or D-Star 146.850 -, all the information at [www.hamcation.com](http://www.hamcation.com) or call 407-841-0874

**February 22 & 23** Tampa, **5th Annual TECHCON Convention**, Hillsborough County Emergency Operations Center, 9450 East Columbus Drive, talk-in on 147.105 + 146.2, for more info goto <http://arrlwcf.org/> or contact Darrell Davis at [kt4wx@arrl.net](mailto:kt4wx@arrl.net).

March 3 Punta Gorda, Charlotte County Hamfest, Punta Gorda Boat Club, 802 West Retta Esplanade, talk-in on 147.255 + 136.5, <https://www.prra.club/hamfest.html>

**May 25** **WormFest 2019, Pinellas Park, FREE, Freedom Lake Park, 9990 46th St N, southeast corner of US 19 and 49<sup>th</sup> Street, Park opens at sunrise for vendor setup, hamfest starts at 0800. Talk-in on 146.850 - 146.2. For a map and directions see <http://www.TheWormholeSociety.org> .**

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Mid January	Frogman swim in Tampa Bay. <a href="http://www.tampabayfrogman.com/">http://www.tampabayfrogman.com/</a>
Last full weekend January	Winter Field Day, <a href="http://www.spar-hams.org/index.php">http://www.spar-hams.org/index.php</a>
Late January	Gasparilla celebration
Late February	West Central Florida Tech Conference <a href="http://arrlwcf.org/wcf-special-events/wcftechconference/">http://arrlwcf.org/wcf-special-events/wcftechconference/</a>
March/April	MS Walks
March/April	Mass Casualty Exercises
Late April	Southeastern VHF Society Conference, <a href="http://www.svhfs.org">http://www.svhfs.org</a>
Late April	March For Babies (was March of Dimes) <a href="https://www.marchforbabies.org/Registration/Events">https://www.marchforbabies.org/Registration/Events</a>
Late April	Florida QSO Party

Early to Mid May	BikeMS Citrus Tour bike ride <a href="http://www.citrustour.org/register.php">http://www.citrustour.org/register.php</a>
Mid-May	Annual Armed Forces Crossband Test
Mid-May	Florida Hurricane Exercise
May, Memorial Day Weekend	Wormfest
Early June	Museum Ships on the Air
Fourth weekend in June	Field Day <a href="http://www.arrl.org/contests/announcements/fd/">http://www.arrl.org/contests/announcements/fd/</a>
July 3/4	Midnight Run in Largo <a href="http://www.kiwanismidnightrun.com/">http://www.kiwanismidnightrun.com/</a>
August	International Lighthouse/Lightship Week <a href="https://illw.net/">https://illw.net/</a>
October, 3 <sup>rd</sup> weekend	JOTA, Scout Jamboree-on-the-AIR (around 14.280MHz)
Early December	ALS bike ride in Walsingham Park
December, first full weekend	Ride & Run With The Stars in Fort DeSoto Park
December, Second weekend	Tampa Bay Hamfest <a href="http://www.fgcarc.org/">http://www.fgcarc.org/</a>

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### **\*YOUR WORMHOLE OFFICERS\***

Bill AG4QX is President and editor of this newsletter, Treasurer is Jim KD4MZL, Paul KA4IOX is the Secretary, Dee N4GD is the Repeater Trustee and Mike K4ZPE is both our club Vice President and webmaster.

### **\*YOUR WORMHOLE REPEATERS\***

53.150 -1Mz PL 146.2

442.625 +5Mz PL 146.2

146.850 - 600Kz PL 146.2

The Wormhole repeaters are both now dual mode Yaesu DR-1X. FM analog as always and now Yaesu Fusion, a C4FM/FM digital mode.

The Wormhole website is at: <http://www.TheWormholeSociety.org>.

West Central Florida Section website: <http://www.arrlwcf.org/>.

The ARRL website is at: <http://www.arrl.org/>

This newsletter is written for The Glorious Society of the Wormhole, an ARRL affiliated amateur radio club located around the Seminole section of Pinellas County Florida. Anyone wishing to be added or removed from The Glorious Society of the Wormhole mailings please write to me at the address below and they will be done.

73,

Bill Williams

AG4QX

ag4qx AT arrl DOT net