

## News from



# The GLORIOUS SOCIETY OF THE WORMHOLE

November 2021

## Hello Worms

I will be out there again for the November meeting. I again thank Alan again for all his fine work broadcasting ZOOM from the park. We will continue with the face to face meetings and at the same time try to broadcast the meeting on the repeater and Zoom. We will meet at the regular meeting time of 1100 on Saturday morning. We will again meet at the Lurie Civic Building which is the new Greater Seminole Area Chamber of Commerce. It is located on the St Petersburg College campus in Seminole. Turn west at the light at 113<sup>th</sup> St N and about 92<sup>nd</sup> Ave N. It's the first building on the north side. Here is a link to a Google map : [Google Maps](#) . There are a few parking spots at the Chamber building but if you go another 100 yards past you can park in the college parking lot which is a lot closer to the outside meeting area.

BRING YOUR CHAIR and lunch! There are a few picnic benches if you do not have a folding chair but they are not comfortable. We will not be cooking but we have access to the Chamber of Commerce building which has a microwave and a toaster oven so you can heat up/cook what you bring. Also bring your lunch and coffee if you want it.

As always before a regular meetings there are members on the repeater before the meeting time so jump in there and chew the rag. .

Zoom has started enforcing the 40 minute limit on the free accounts, at least sometime. We had the Wormhole cut off but it starts up again immediately so I guess we will stay with Zoom as long as it is working.

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Topic: Bill Williams' Zoom Meeting  
Time: This is a recurring meeting Meet anytime

Join Zoom Meeting  
<https://zoom.us/j/2737114584?pwd=d1BETHVOQ21vWWZXZ0lYQ0FIWWtldz09>

Meeting ID: 273 711 4584  
Passcode: worm

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For the meeting do not forget ... BRING YOUR CHAIR, lunch and coffee! We will have chips, cold drinks and water available.

### **\*A COMET WITH VOLCANOS \***

From your editor: This is relative old news for watching in space. If you happen to be a space junky and have a telescope you probably already have studied this phenomenon. I don't have an 8 inch telescope I won't see it anyway. Interesting in any case.

spaceweather.com 10/15/2021

So you think you know what a comet is? Think again. Comet 29P/Schwassmann-Wachmann is challenging old ideas. Astronomers call it a comet, but, really, "giant space volcano" might be a better description. It's a 60-km-wide ball of ice orbiting the Sun beyond Jupiter, and it appears to be one of the most volcanically active bodies in the entire Solar System.

Comet 29P just blew its top ... again. In late September 2021, 29P erupted four times in quick succession, blowing shells of "cryomagma" into space. Arizona amateur

astronomer Eliot Herman has been monitoring the debris: "Initially it looked like a bright compact object," says Herman. "Now [the expanding cloud](#) is 1.3 arcminutes wide (bigger than Jupiter) and sufficiently transparent for background stars to shine through."

When this object was discovered in 1927, astronomers thought they had found a fairly run-of-the-mill comet, unusual mainly because it was trapped in [a nearly circular orbit](#) between Jupiter and Saturn. 29P quickly proved them wrong as it began to erupt over and over again. Modern observations show that outbursts are happening as often as 20 times a year.

"The current outburst, which began on Sept. 25th, appears to be the most energetic of the past 40 years," says Dr. Richard Miles of the British Astronomical Association (BAA). "Within a span of only 56 hours, four eruptions took place in quick succession, creating a 'superoutburst.'"

Miles has developed a theory to explain what's happening. The "comet," he believes, is festooned with ice volcanoes. There is no lava. Instead, the volcanoes are powered by a mixture of liquid hydrocarbons (e.g., CH<sub>4</sub>, C<sub>2</sub>H<sub>4</sub>, C<sub>2</sub>H<sub>6</sub> and C<sub>3</sub>H<sub>8</sub>) akin to those found in the lakes and streams of Saturn's moon Titan. In Miles's model, the cryomagma contains a sprinkling of dust and it is suffused with dissolved gases N<sub>2</sub> and CO, all trapped beneath a surface which, in some places, has the consistency of wax. These bottled-up volatiles love to explode when a fissure is opened.

In [a seminal paper](#) published 5 years ago, Miles studied more than a decade's worth of eruptions, and he found some patterns. The data suggest that 29P rotates every 57.7 days. The most active vents are concentrated on one side of the ice-ball in a range of longitudes less than 150 degrees wide. At least 6 discrete sources have been identified.

While most outbursts fade within a week or so, this superoutburst is still visible. The rat-a-tat-tat eruption in September boosted the comet's brightness 250-fold, and it hasn't declined much since then. With an integrated magnitude between +10 and +11, the expanding cloud is well within reach of backyard telescopes.

"Comet 29P can be seen with an 8 inch 'scope," says Herman. "In smaller instruments it will appear to be a bright dot. To resolve the cloud and photograph individual stars shining through it, I used the big half-meter [iTelescope T11](#)."

Ready see something weird? 29P is located in the constellation Auriga, easy to find high in the sky at midnight. Visit Sky&Telescope for [observing tips](#). Also, for the latest news check out the BAA's [MISSION 29P](#) website.

## \* AM OPERATION \*

Ralph WD0EJA

Last month was about using the correct mode to check SWR. One of the modes discussed was **AM Modulation**. What is this modulation?

AM stands for Amplitude Modulation. It is the most basic and oldest voice modulation we have. How is it produced in the transmitted?

You start with a carrier. This is a constant radio frequency signal. Let's use 7.200 Mhz's. You have an oscillating circuit that produces this constant frequency. Sending this out on the air, you will detect a signal from your radio, but if you are listening on the AM mode you will hear nothing. Even the noise will go away if the signal is strong enough.

However, we want human speech to be sent on this signal. We can do this, and this is why we call it a "carrier". This is the media that delivers the voice from your radio to the next.

In the radio, you mix the voice signal from a basic audio amplifier with the Carrier. The circuit for this is called a "mixer". Both of these signals are fed into one amplifying device. What you get out is an Amplitude Modulated signal. It is fairly simple, but what does the AM signal consist of?

You put 2 signals together, RF carrier and Audio, you will get 3 signals out.

You still have the RF carrier (7.200 Mhz), however when it was mixed with audio, it developed 2 other signals. These are called Side Bands.

Your Audio signal, for example has a frequency of 1,000 Hz. This will vary with your voice, but let's keep it constant for now. We can hear this tone. When it is mixed with the RF Carrier, the result is another signal that is the sum of the 2 frequencies.  $7.200 \text{ Mhz} + 1,000 \text{ Hz}$ . This is called an Upper Side Band, USB.

If you raise the audio frequency the Upper Side Band will increase in frequency and vice versa.

The other signal is the difference or subtraction of the signal. Or  $7.200 \text{ Mhz} - 1,000 \text{ Hz}$ . This is called the Lower Side Band. This signal is interesting. It works backwards. If you raise the audio signal, the Radio Frequency gets lower and vice versa. The Lower Side Band has been used for encryption in the past. Therefore, when your voice frequency goes up, the signal frequency goes down.

Enough for now. Next article will address another characteristic of AM and how we receive it.

73,  
Ralph WD0EJA  
[wd0eja@isotronantennas.com](mailto:wd0eja@isotronantennas.com)  
**Bilal Company**

## **\* GOOGLE SENDING INTERNET OVER LIGHT BEAM \***

BBC Tech NEWS By Jane Wakefield

A novel way of delivering high-speed internet via beams of light through the air has successfully transmitted data across the Congo River. It means that citizens in Brazzaville and Kinshasa could get faster and cheaper broadband.

Project Taara is one of Alphabet X's (formerly Google X) so-called moonshot ideas. It grew out of Project Loon, a broadband project using balloons in the stratosphere, since shut down.

The latest experiment means that a "particularly stubborn connectivity gap" between the two African cities - Brazzaville in the Republic of the Congo and Kinshasa in the Democratic Republic of Congo has been filled, said the team [in a blog](#).

The cities lie only three miles apart but connecting them is tricky because traditional cable has to be routed around the river, making broadband prices five times more expensive.

The wireless optical communications (WOC) system provided nearly 700 terabytes of data in 20 days with 99.9% availability, the team at X reported. "While we don't expect to see perfect reliability in all kinds of weather and conditions in future, we're confident Taara's links will continue to deliver similar performance and will play a key role in bringing fast, more affordable connectivity to the 17 million people living in these cities," it said in the blog.

It is the latest iteration of the project which has been in development for three years. X is working with Econet Group and Liquid Telecom to bring high-speed internet to sub-Saharan Africa and has begun a commercial rollout in Kenya. The system uses very narrow, invisible beams of light to deliver high speeds, similar to the way traditional fibre in the ground uses light to carry data but without the cable casing. The technology, known as Free Space Optical Communications, grew out of experiments the team had previously used to beam lasers between balloons in Project Loon, which was shut down by Alphabet in February because it was no longer seen as commercially viable.

It is not perfect and the team admits it will not offer full reliability in challenging conditions, such as fog, haze or when birds fly in front of the signal. But it has been improved by adjusting the level of laser power being transmitted, which works a bit like a telescope, relying on mirrors, lights, software and hardware to move the beam to exactly where it needs to be. The team have also found ways to reduce errors due to interruptions such as birds flying through the link. "While places like foggy San Francisco may never be an ideal spot to use WOC, there are many, many places around the world with ideal weather conditions for Taara's links," the blog read.

The technology has also be trialled in Kenya, India, the US and Mexico. Other projects Alphabet X is working on include: Mineral - an attempt to develop new technology to build a more sustainable food system, Tidal - looking at improving ocean health, Everyday Robot Project - aiming to develop robots that can do useful tasks to help in daily life

**\* DEEPAKE TECHNOLOGY\***

*Forbes* by Thomas Brewster 10/14/2021

In early 2020, a bank manager in the United Arab Emirates received a call from a man whose voice he recognized—a director at a company with whom he’d spoken before. The director had good news: His company was about to make an acquisition, so he needed the bank to authorize some transfers to the tune of \$35 million. A lawyer named Martin Zelner had been hired to coordinate the procedures and the bank manager could see in his inbox emails from the director and Zelner, confirming what money needed to move where. The bank manager, believing everything appeared legitimate, began making the transfers.

What he didn’t know was that he’d been duped as part of an elaborate swindle, one in which fraudsters had used “deep voice” technology to clone the director’s speech, according to a court document unearthed by *Forbes* in which the U.A.E. has sought American investigators’ help in tracing \$400,000 of stolen funds that went into U.S.-based accounts held by Centennial Bank. The U.A.E. believes it was an elaborate scheme, involving at least 17 individuals, which sent the pilfered money to bank accounts across the globe.

Little more detail was given in the document, with none of the victims’ names provided. The Dubai Public Prosecution Office, which is leading the investigation, hadn’t responded to requests for comment at the time of publication. Martin Zelner, a U.S.-based lawyer, had also been contacted for comment, but had not responded at the time of publication.

It’s only the second known case of fraudsters allegedly using voice-shaping tools to carry out a heist, but appears to have been far more successful than the first, in which fraudsters used the tech to impersonate a CEO of a U.K.-based energy firm in an attempt to steal \$240,000 in 2019, according to the *Wall Street Journal*.

The U.A.E. case shows how devastating such high-tech swindles can be and lands amidst [warnings](#) about the use of AI to create so-called deep fake images and voices in cybercrime.

“Audio and visual deep fakes represent the fascinating development of 21st century technology yet they are also potentially incredibly dangerous posing a huge threat to data, money and businesses,” says Jake Moore, a former police officer with the Dorset Police Department in the U.K. and now a cybersecurity expert at security company



ESET. “We are currently on the cusp of malicious actors shifting expertise and resources into using the latest technology to manipulate people who are innocently unaware of the realms of deep fake technology and even their existence.

“Manipulating audio, which is easier to orchestrate than making deep fake videos, is only going to increase in volume and without the education and awareness of this new type of attack vector, along with better authentication methods, more businesses are likely to fall victim to very convincing conversations.”

Once a technology confined to the realm of fictional capers like *Mission: Impossible*, voice cloning is now widely available. Various tech startups are working on increasingly sophisticated AI voice technologies, from London’s Aflorithmic to Ukraine’s Respeecher and Canada’s Resemble.AI. The technology caused a stir in recent months with the revelation that the late [Anthony Bourdain had his voice synthesized for a documentary on his life](#). Meanwhile, recognizing the potential for malicious use of the AI, a handful of companies, such as \$900 million-valued security firm Pindrop, now claim they can detect synthesized voices and thereby prevent frauds.

If recordings of you speaking are available online, whether on social media, YouTube or on an employer’s website, there may well be a secret battle going on for control of your voice without you knowing.

## **\* APPLYING FOR A GRANT FROM ARRL OR ARDC\***

By Dan Romanchik, KB6NU

In our division director’s September missive to the membership yesterday was this nugget:

ARRL IS CURRENTLY OFFERING GRANTS to fund amateur radio projects. This program, sponsored by the ARRL Foundation, is specifically for organizations and aimed primarily for education, licensing and support of ham activities. A special focus is on youth-related plans. We are now entering the last phase of this year’s grant cycle, so the opportunity exists



for your club or organization to submit a grant request. You can find the full details on the grant page of the ARRL web pages, check:

<http://www.arrl.org/amateur-radio-grants>.

The ARRL accepts grant requests three times a year:

- February 1 – February 28
- June 1 – June 30
- October 1 – October 31

Since this is September 1, you have two months to get your request in. As I've written before, our club was awarded \$1,500 to help us put up a tower for a club station at the Ann Arbor Hands-On Museum. The money is available. Go get it!

### **Get money from ARDC, too!**

You can also get a grant for amateur radio projects from Amateur Radio Digital Communications (ARDC), the outfit I'm currently working for. ARDC grants money for projects that fall into one of the following three categories:

- Support and growth of amateur radio,
- Education, and
- Technical innovation.

ARDC has, for example, awarded grants to:

- An amateur radio club in Wisconsin (<https://www.ampr.org/grants-old/grant-chippewa-valley-arc-emergency-trailer-and-equipment/>) for upgrading their repeater systems and building an emergency communications trailer that they will also use to promote amateur radio in their area.
- A California high school (<https://www.ampr.org/grant-incorporating-constructivism-and-the-maker-mentality-at-california-high-school/>) whose computer science teacher will use the funds to purchase microcontrollers and transform his classroom into a maker space. With this equipment and facility, students will learn computer science by building their own projects.
- The M17 Project (<https://www.ampr.org/grant-m17-open-protocol/>), whose goal

is to develop a new, open-source digital radio protocol by hams, for hams, and that is easy to understand and build on.

To be eligible for an ARDC grant, an organization must be a 501(c)(3) public charity or be sponsored by a 501(c)(3) public charity. Other eligible organizations include government entities, schools or universities, and international charities or nonprofits.

For more information on ARDC and how to apply for an ARDC grant, go to <https://www.ampr.org/apply>.

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Dan Romanchik, KB6NU, is the author of the KB6NU amateur radio blog (KB6NU.Com), the "No Nonsense" amateur radio license study guides (<https://KB6NU.Com/study-guides/>), and often appears on the ICQPodcast (<https://icqpodcast.com>). He recently joined ARDC as their Content Manager. Among his responsibilities is spreading the word about all the cool things ARDC is doing for amateur radio.

### **\*NEWSLETTER FROM JIM SCHILLING\***

Jim Schilling, KG4JSZ, our ARRL Vice Director for the Southeastern Division has a newsletter. He calls it *The Report*. He reports on his club activities and other ARRL events that might be of interest. Although living quite a distance from Seminole Jim has been a Wormhole member and does occasionally make a meeting. If you want to get on his mailing list drop him a line at [kg4jsz@arrl.org](mailto:kg4jsz@arrl.org).



### **\*CLUB MEETING\***

We will again have a face to face club meeting on November. We will try to keep up on the 2M and also video concurrent on a video service. The meeting will be held at

the Lurie Civic Building which is the new Greater Seminole Area Chamber of Commerce. It is located on the St Petersburg College campus in Seminole. Turn west at the light at 113<sup>th</sup> St N and about 92<sup>nd</sup> Ave N.



### **\*CLUB NETS\***

Check in on the club net Thursdays at 1930 and 2000 (or at the end of the 2M net). 2M at 146.850 – with a tone of 146.2. Our 6M net runs after our regular 2M net on 53.150 – 1MHz offset 146.2 tone.



### **\*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<br>Brandon | Brandon ARS                 | from         |
| 2000 50.135<br>County          | Pinellas ARK                | Pinellas     |
| 2030 NI4CE system              | EAGLE Net, NTS traffic net, | NI4CE system |
| 2030 145.450<br>County         | Pinellas ARK                | Pinellas     |

**TUESDAY**

|                                     |   |              |
|-------------------------------------|---|--------------|
| 1830 147.060 no tone<br>Petersburg  | St Pete ARC daily net                                 | from St      |
| 1900 50.200 USB<br>ARS              | 6M net  | Brandon      |
| 1900 28.365 USB                     | 10M Net   | Clearwater   |
| 1900 NI4CE system<br>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                   | WCF Skywarn net                                       | NI4CE system |
| 2000 147.105+ 146.2<br>Tampa        | Tampa ARC net   | from         |
| 2000 28.365 USB                     | simplex   | Brandon ARS  |
| 2030 NI4CE system<br>system         | EAGLE Net, NTS traffic net                            | NI4CE        |
| 2100 28.465 USB                     | 10/10 net   | from Orlando |
| 1900 146.490 simplex<br>simplex Net | 3 <sup>RD</sup> Tuesday monthly, Hillsborough Co ARES |              |

**WEDNESDAY**

|   |                             |         |
|---|-----------------------------|---------|
| 1830 147.060 no tone<br>Petersburg  | St Pete ARC daily net       | from St |
| 1900 147.165 + 136.5<br>Bandon  | Humpday Net                 | from    |
| 1930 52.020 simplex<br>Petersburg   | Suncoast 6'ers              | from St |
| 1930 NI4CE system<br>system   | WCF Section Digital Info Ne | NI4CE   |
| 2000 147.105 146.2<br>Tampa   | Greater Tampa CERT net      | from    |
| 2000 146.97- 146.2<br>Clearwater  | Clearwater ARS              | from    |
| 2030 NI4CE system<br>system   | EAGLE Net, NTS traffic net  | NI4CE   |
| 2100 NI4CE system<br>affiliated   | Tampa Bay Traders Net       | non-    |
| 0000-2359 HF Winlink<br><a href="https://winlinkwednesday.net/reminder.html">https://winlinkwednesday.net/reminder.html</a> | Winlink Wednesday Net       |         |

## **THURSDAY**

|                                     |                         |         |
|-------------------------------------|-------------------------|---------|
| 1800 146.52 simplex<br>Tampa        | Hillsborough ARES/RACES | North   |
| 1830 147.060 no tone<br>Petersburg  | St Pete ARC daily net   | from St |
| 1900 444.750 +146.2<br>Tampa        | Fusion net              | from    |
| 1915 224.660- no tone<br>Petersburg | St Pete ARC             | from St |
| 1930 146.6385 -127.3<br>Lakeland    | Lakeland ARC            | from    |

|                                       |                            |                |
|---------------------------------------|----------------------------|----------------|
| 1930 444.225 + 146.2<br>Tampa         | Hillsborough ARES/RACES    | from           |
| 1930 146.850- 146.2<br>Petersburg     | Wormhole                   | from St        |
| 2000 53.150 –1MHz 146.2<br>Petersburg | Wormhole                   | from St        |
| 2030 NI4CE system<br>system           | EAGLE Net, NTS traffic net | NI4CE          |
| <b>FRIDAY</b>                         |                            |                |
| 1830 147.060 no tone<br>Petersburg    | St Pete ARC daily net      | from St        |
| 1900 3.830 LSB                        | Brandon 80M Net            | from Brandon   |
| 2030 NI4CE system<br>system           | EAGLE Net, NTS traffic net | NI4CE          |
| <b>SATURDAY</b>                       |                            |                |
| 0730 3.940 (7.281 Alt.)+/- QRM<br>WCF | WCF Section HF Net         | from           |
| 1830 147.060 no tone<br>Petersburg    | St Pete ARC daily net      | from St        |
| 2030 NI4CE system<br>system           | EAGLE Net, NTS traffic net | NI4CE          |
| <b>SUNDAY</b>                         |                            |                |
| 0800 3.933                            | Florida Traders Net        | non-affiliated |
| 1830 147.060 no tone<br>Petersburg    | St Pete ARC daily net      | from St        |
| 1930 NI4CE system<br>system           | WCF Section Net            | NI4CE          |

|                                 |                            |          |
|---------------------------------|----------------------------|----------|
| 2000 147.550 simplex<br>County  | 550 Simplex Net            | Pinellas |
| 2030 NI4CE system<br>system     | EAGLE Net, NTS traffic net | NI4CE    |
| 2100 144.210 USB<br>orientation | Clearwater ARS             | vertical |

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### \*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 can ask club members for the persons contact information. 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,

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### \*HAMFESTS\*

November 13      **Pinellas Part, SPARKFest**, Freedom lake Park, 9990 46th St. N., All FREE, 8:00 AM until Noon, **talkin** 147.06 (+) none, VE Testing, for info see <https://www.sparc-club.org/sparcfest/> or Lisa, KC1YLat [Vice-President@sparc-club.org](mailto:Vice-President@sparc-club.org)

**December 10 & 11**      **Plant City, the 2021 Tampa Bay Hamfest and West Central Florida Section Convention**, Friday and Saturday, **at the Strawberry Festival grounds, admission \$10, 16x40ft tailgate space \$10, electric \$5, 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 ;-)

## 2022

- January 8** **TARCFest** TARC Clubhouse, 22<sup>nd</sup> St at the river, \$5 entry including tailgate, a few inside tables reserved in advance \$15, talkin on 147.105 +146.2, more info at <http://hamclub.org/>
- January 15 New Port Richey, Millennium Academy, 10005 Ridge Road, talkin 146.67 +146.2, see the website for info <http://gulfoastarc.com/hamfest/> or contact contact Barry Keaveny , N2NVP, 727-277-5794, **Email:** [keavbv@msn.com](mailto:keavbv@msn.com)
- February 11-13** **Orlando Hamcation and NATIONAL Convention**, Central Florida Fairgrounds, 4603 West Colonial Drive, Tickets \$15 in advance, \$20 at door. Talk-in 146.760 - PL 103.5 OR Fusion. Also D-Star on 146.820 -, all the information at [www.hamcation.com](http://www.hamcation.com) or call 407-841-0874 There is also a AM low power Information Station on AM 610.
- February 25** Polk County EOC, **8th Annual TECHCON Convention**, Polk County Emergency Operations Center, 26571 Airport Rd, , for more info <http://arrlwcf.org/wcf-special-events/wcftechconference/>
- April 9** **TARCFest** TARC Clubhouse, 22<sup>nd</sup> St at the river, \$5 entry including tailgate, a few inside tables reserved in advance, talkin on 147.105 +146.2, more info at <http://hamclub.org/>
- May 28** **WormFest 2021**, Pinellas Park, admission FREE, tailgate free, Freedom Lake Park, 9990 46th St N, southeast corner of US 19 and 49<sup>th</sup> Street, 33782. Park opens at sunrise for vendor setup, hamfest starts at 0800. Talk-in on 146.850 – 146.2. All FREE! For a map and directions see <http://www.TheWormholeSociety.org> .

## August 20

**TARCFest** TARC Clubhouse, 22<sup>nd</sup> St at the river, \$5 entry including tailgate, a few inside tables reserved in advance, talkin on 147.105 +146.2, more info at <http://hamclub.org/>

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|----------------------------------|---|
| Mid January                      | Adventure Run, Honeymoon Island   |
| Last full weekend January        | Winter Field Day,<br><a href="https://www.winterfieldday.com/">https://www.winterfieldday.com/</a>  |
| Late January                     | Gasparilla celebration  |
| Late February                    | West Central Florida Tech Conference<br><a href="http://arrlwcf.org/wcf-special-events/wcftechconference/">http://arrlwcf.org/wcf-special-events/wcftechconference/</a> |
| March                            | MS 150 Citrus Tour bike ride<br><a href="http://www.citrustour.org/register.php">http://www.citrustour.org/register.php</a>   |
| March/April                      | MS Walks  |
| March/April                      | Mass Casualty Exercises   |
| Late April                       | Southeastern VHF Society Conference,<br><a href="http://www.svhfs.org">http://www.svhfs.org</a>   |
| Late April                       | Florida QSO Party   |
| Mid May                          | March For Babies (was March of Dimes)<br><a href="https://www.marchforbabies.org/Registration/Events">https://www.marchforbabies.org/Registration/Events</a>            |
| Mid-May                          | Annual Armed Forces Crossband Test  |
| Mid-May                          | Florida Hurricane Exercise  |
| May, Memorial Day Weekend        | Wormfest  |
| First weekend in June            | Museum Ships on the Air   |
| Fourth weekend in June           | Field Day<br><a href="http://www.arrl.org/contests/announcements/fd/">http://www.arrl.org/contests/announcements/fd/</a>  |
| July 3/4                         | Midnight Run in Largo<br><a href="http://www.kiwanismidnightrun.com/">http://www.kiwanismidnightrun.com/</a>  |
| Third weekend in August          | International Lighthouse/Lightship Week<br><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  
December, Second weekend

ALS bike ride in Walsingham Park  
Tampa Bay Hamfest <http://www.fgcarc.org/>

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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 2M and 440 repeaters are both now dual mode Yaesu DR-1X. FM analog as always and Yaesu Fusion, a C4FM 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 thy will be done.

73,  
Bill Williams  
AG4QX  
ag4qx AT arrl DOT net