News from

The GLORIOUS SOCIETY OF THE WORMHOLE

January 2025

Hello Worms

THE MEETING WILL NOW START AT 1000

Another organizations meeting is starting at 1230 meaning they arrive at 1200. Unfortunately that means our meeting after meeting that sometimes runs for hours will no longer be available. We could always go somewhere and get a cup of coffee.

The 2025 Tampa Bay Hamfest is in the books. We did not lose money this year, so that is all to the good. We can always use more volunteers.

Bring your drink of choice and lunch to the meeting if you want. We will not be cooking but we have access to the Chamber of Commerce kitchen which has a microwave and a toaster oven so you can heat up/cook what you bring.

DID YOU KNOW

Saint Lucia is the only country in the world named after a woman**.** The country was named after Saint Lucy of Syracuse by the French.

THIS MONTH'S STIFF – MICHAEL FARADAY

By Philip Neidlinger, PE KA4KOE

Entered Mortal Coil: 22 September 1791

Assumed Room Temperature: 25 August 1867

Michael Faraday should be rightly remembered as one of the greatest experimental scientists of the 19th Century. As mentioned in a previous essay, in my opinion, one is truly great when a unit of measure, for instance, is given your name at some point after you slip the bonds of this mortal existence. Dearly departed Mike had not one, but **two** scientific units named in his honor! The Brits are rightly proud of this man.

Unlike his contemporaries, Mike had extreme trouble with mathematics. In fact, it is said he knew very little. His mind was geared towards the "hands on" approach. A sheet of formulas and arcane calculations did not presage any of his discoveries. No, Mike just went out and found out first hand whether his ideas had any merit. However, given the broad scope of his contributions, he is often listed amongst the other greats who understood the "new math", and showed their work on paper before the final answer. Unfortunately, I am afraid a modern professor would have given Faraday an "F" in lab for that very reason! So, what did the gentle scientist discover? Here is the grocery list of the high points:

1. *Transformers:* Discovered mutual-inductance, which is the basis for modern transformers.
2. *Self-Inductance*: Discovered this characteristic of coils at approximately the same time as Joseph Henry. However, the unit of self-inductance is named for his American contemporary (see DED No. 11).
3. *The Dielectric Constant*: Faraday described the fundamental characteristic of capacitors, and he also invented a variable capacitor. The unit of capacitance, the **Farad,** designated by the letter **F**, is named for Mike as a result of this discovery.
4. *Electric motor and dynamo*: Every piece of modern electrical machinery owes its existence to these two inventions of Faraday.

5. *Faraday Rotation*: Polarized light will change its rotation when influenced by an electromagnet. This phenomenon is also known as the *Faraday Effect*.
6. *Faraday's Constant*: Mike discovered that a specific amount of electric charge is required to deposit one mole of a substance on an electrode via electrolysis. This unit of charge is referred to as a **Faraday,** and is denoted by the symbol **Fd**. A Faraday is equal to 96.4853 kilocoulombs. A coulomb is defined as the number of electrons stored when a potential difference of 1 volt is applied across a capacitor of 1 Farad. We'll talk about Mr. Coulomb later, if someone will kindly remind me to do so. Whew! Okay, that's enough difficult electronic theory for now!
7. *Terminology*: Mike made up some cute electrical terms for us. These include anode, cathode, electrode, and ion.
8. *Other stuff*: Faraday discovered Benzene.

Ever mindful of his obligations to his fellow man, Faraday always gave a lecture on Christmas day for children. These lectures are classics of the scientific method, and described various concepts in a way that the common person could understand. The tradition of these lectures continues to this very day.

Faraday's work in electricity and magnetism helped pave the way for his fellow countryman, James Clerk Maxwell: the reader is referred to DED No. 1 for that story. Mike was truly a hard act to follow.

73.
Philip Neidlinger, PE
KA4KOE

* EARTH AT PERIHELION*

SpaceWeather.com by Dr. Tony Phillips
You learned it in school; astronomers say it all the time; it's The Truth. "Earth circles the Sun."
Well... almost.

Earth does travel around the Sun, but the path is not a perfect circle. It's an ellipse, slightly lopsided. One end is a bit closer to the Sun than the other. On January 4th, 2006, our planet is at the closer end--a point astronomers call "perihelion." We'll be closer to the Sun than we are at any other time of the year.

"All planets in our solar system travel around the Sun in elliptical orbits. It's Kepler's 1st Law," says University of Florida astronomy professor George Lebo. "The eccentricity of Earth's orbit is 1.7%. In January when we're closest to the Sun (perihelion), the distance is 147.5 million km vs. 152.6 million km in July--the farthest point (aphelion)."

A nearby sun means more sunlight for our planet. "Averaged over the globe, sunlight falling on Earth at perihelion is about 7% more intense than it is at aphelion," says Roy Spencer of NASA's Global Hydrology and Climate Center (GHCC). Then why is it so cold outside? "Seasonal weather patterns are shaped primarily by the 23.5 degree tilt of our planet's spin axis, not by aphelion or perihelion," explains Lebo. "During northern winter the north pole is tilted away from Sun. The Sun hangs low in the sky, and days are short. That's what makes January so cold." (Note: Seasons are reversed in the two hemispheres, north and south. So January is generally warm in the south.)

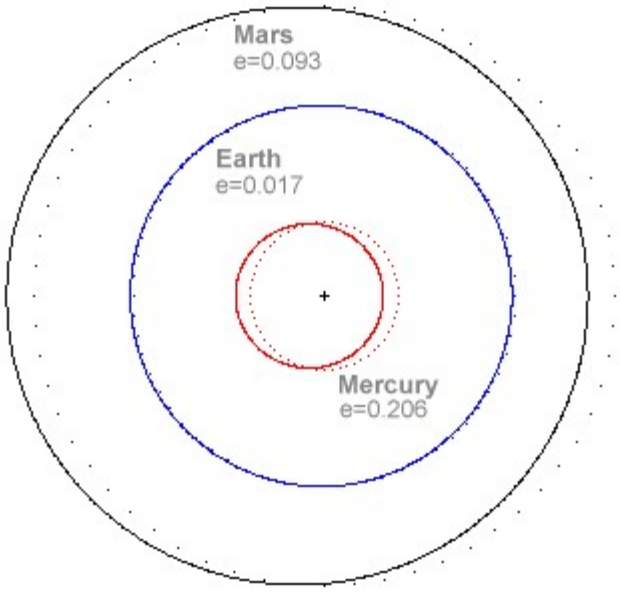
There's more to the story: Says Spencer, "the average temperature of the whole earth at perihelion is about 4^{o}F or 2.3^{o}C lower than it is at aphelion." (See the global temperature data at the GHCC web site.) Our planet is actually colder when we're closer to the Sun. Strange but true.

This happens because continents and oceans aren't distributed evenly around the globe. There's more land in the northern hemisphere and more water in the south. During the month of July the land-crowded northern half of our planet is tilted toward the Sun. "Earth's temperature is slightly higher in July because the Sun is shining down on all that land, which heats up rather easily," says Spencer.

Physicists would say that continents have low heat capacity. "Consider the desert," says Bill Patzert, an oceanographer at NASA's Jet Propulsion Laboratory. "At night the desert is cold, perhaps only 60° F (16° C). When the Sun rises in the morning the temperature might jump to 100° F (38° C) or more." Such mercurial behavior is characteristic of materials like rocks and soil with low heat capacity. It doesn't take much sunlight to substantially elevate their temperature.

Water is different. It has high heat capacity. "Let's say you went sailing off Malibu Beach at noon," continues Patzert. "The offshore temperature might be 75° F (24° C) -- pretty pleasant!" What happens after sunset? "The temperature drops, but only a few degrees because the heat capacity of the ocean is so high."

All this explains why July is our planet's warmest month: Northern continents baked by the aphelion Sun elevate the average temperature of the entire globe.
January, on the other hand, is the coolest month because that's when our planet presents its water-dominated hemisphere to the Sun. "We're closer to the Sun in January," says Spencer, "but the extra sunlight gets spread throughout the oceans." Southern summer in January (perihelion) is therefore cooler than northern summer in July (aphelion).



Right: Earth's orbit is eccentric but not nearly so much as the orbits of Mars or Mercury. In this diagram solid lines trace each planet's elliptical path around the Sun. The dotted lines show circular orbits with the same mean radius. For more information, please visit Bridgewater College's Interactive Planetary Orbits web site.
"Another notable difference between summers in the two hemispheres is their duration," adds Lebo. According to Kepler's 2nd Law, planets move more slowly at aphelion than they do at perihelion. As a result,

Northern summer on Earth is 2 to 3 days longer than southern summer -- which gives the Sun even more time to bake the northern continents.

* FLORIDA BUILDING A WIRELESS CHARGING HIGHWAY*

In 2026, Florida will break ground on a highway that can wirelessly charge EVs at speed in a small-scale test that could have big implications for the future of mobility.

The highway is actually just a 3/4-mile portion of a larger construction project, the 4.4-mile State Road 516 (SR 516) Lake/Orange Expressway.

The Central Florida Expressway Authority (CFX) is building SR 516 in three segments. The first one, as shown on the map below, will feature wireless charging technology. The highway will be open to the public when it's finished in 2029, but the charging system will only work on "specially equipped vehicles...for initial testing of the charging lane," CFX says.

It remains to be seen if the project will focus on charging trucks or passenger vehicles; recent tests elsewhere have focused on trucks. In October, France activated a highway that can wirelessly charge trucks in partnership with Electreon, Interesting Engineering reports.

In 2023, the state of Michigan also announced that it had collaborated with Electreon to install a quarter-mile wireless-charging public roadway in Detroit for testing purposes. The Michigan Department of Transportation (MDOT) said it planned to request bids in 2024 to rebuild part of Michigan Avenue with inductive charging installed, but that does not appear to have happened.

In a major milestone earlier this month, however, researchers at Purdue University completed the first successful wireless highway charging test in the US, in partnership with the Indiana Department of Transportation (INDOT). Their system charged a semi truck traveling at 65mph, delivering 190 kilowatts of power, or more than enough for smaller vehicles as well.

"This is a system designed to work for the heaviest class of trucks all the way down to passenger vehicles," says Aaron Brovont, a research assistant professor in Purdue's Elmore Family School of Electrical and Computer Engineering.

While wireless charging is common for smaller devices, such as mobile phones, it has not yet become mainstream for electric cars. Their larger batteries pose an engineering challenge, especially when traveling at high speeds on a highway. "Because vehicles travel so much faster on highways than city roads, they need to be charged at higher power levels," says Purdue.

However, there's no question that wireless charging would be an improvement over wrangling with clunky power cords. It's also easier to make autonomous since the car can park itself over a pad and begin powering up. That's likely why Tesla plans to wirelessly charge its future robotaxis. CEO Elon Musk remarked on stage in 2024 that it was "high time" the company made that change. In April 2025, Tesla said it's also exploring wireless charging for its V4 Superchargers, but we haven't seen any yet.

Passively powering up while driving would be even better—science fiction turned reality.

CLUB MEETING and ZOOM

The meeting time is 1000 on Saturday morning at the Lurie Civic Building on the St Petersburg College campus in Seminole. Turn west at the light at 113th St N and about 92nd 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 in front the Chamber building but double parking is fine since we will be able to find the owner to move his vehicle if necessary. Alternately if you go another 100 yards past you can park in the college parking lot. We will not be offering a ZOOM of the meeting

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

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	St Pete ARC daily net	from St Petersburg
1900	50.200 USB	6M net	Brandon ARS
1900	28.365 USB	10M Net	Clearwater
1900	NI4CE system	WCF Section VHF ARES	NI4CE system
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	Tampa ARC net	from Tampa
2000	28.365 USB	simplex	Brandon ARS
2030	NI4CE system	EAGLE Net, NTS traffic net	NI4CE system
2100	28.465 USB	10/10 net	from Orlando
1900	146.490 simplex	3RD Tuesday monthly, Hillsborough Co ARES simplex Net	

WEDNESDAY

1830	147.060 no tone	St Pete ARC daily net	from St Petersburg
1900	147.165 + 136.5	Humpday Net	from Bandon
1930	52.020 simplex	Suncoast 6'ers	from St Petersburg
1930	NI4CE system	WCF Section Digital Info Ne	NI4CE system
2000	147.105 146.2	Greater Tampa CERT net	from Tampa
2000	146.97- 146.2	Clearwater ARS	from Clearwater
2030	NI4CE system	EAGLE Net, NTS traffic net	NI4CE system
2100	NI4CE system	Tampa Bay Traders Net	non-affiliated
0000-2359	HF Winlink	Winlink Wednesday Net	

https://winlinkwednesday.net/reminder.html

THURSDAY

1800	146.52 simplex	Hillsborough ARES/RACES	North Tampa

1830 147.060 no tone	St Pete ARC daily net	from St Petersburg
1900 444.750 +146.2	Fusion net	from Tampa
1915 224.660- no tone	St Pete ARC	from St Petersburg
1930 146.6385 -127.3	Lakeland ARC	from Lakeland
1930 440.1 +162.2	Hillsborough ARES/RACES	from Tampa
1930 146.850- 146.2	Wormhole	from Pinellas Co
2000 53.150 –1MHz 146.2	Wormhole	from Pinellas Co
2030 NI4CE system	EAGLE Net, NTS traffic net	NI4CE system

FRIDAY

1830 147.060 no tone	St Pete ARC daily net	from St Petersburg
1900 3.830 LSB	Brandon 80M Net	from Brandon
2030 NI4CE system	EAGLE Net, NTS traffic net	NI4CE system

SATURDAY

0730 3.940 (7.281 Alt.)+/- QRM	WCF Section HF Net	from WCF
1830 147.060 no tone	St Pete ARC daily net	from St Petersburg
2030 NI4CE system	EAGLE Net, NTS traffic net	NI4CE system

SUNDAY

0800 3.933	Florida Traders Net	non-affiliated
1830 147.060 no tone	St Pete ARC daily net	from St Petersburg

1930	NI4CE system	WCF Section Net	NI4CE system
2000	147.550 simplex	550 Simplex Net	Pinellas County
2030	NI4CE system	EAGLE Net, NTS traffic net	NI4CE system
2100	144.210 USB	Clearwater ARS	vertical orientation

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. If you want to see anything here and you are coming to the meeting let the seller know, maybe he can bring it.

FOR SALE,
See Bill AG4QX for the following: make me an offer.

*ICOM IC-W32A , 2m and 440 HT, AA battery pack	$25
*Heathkit HD-1215 Phone patch looks ok	$10
*Drake WV-5 wattmeter looks ok	$75
*Cushcraft A4S, 10/15/20 4 element beam	$250
*Cushcraft AV-12AVQ, 10/15/20 vertical	$125
*Cushcraft A50-#S, 6m beam	$125
*Cushcraft A-#WS, 17/12 WARC beam	$250
*15000 V neon sign transformer currently used for Jacobs ladder	$30

HAMFESTS

2025

December 12 & 13 **Plant City, the 2025 Tampa Bay Hamfest and West Central Florida Section Convention**, Friday and Saturday, **at the Strawberry Festival grounds, admission $13, 16x40 ft tailgate space $10, electric $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 ;-)**

2026

January 10 **TARCFest** TARC Clubhouse, 22nd St at the river, 8AM-1PM, $5 entry including tailgate, a few inside tables must be reserved in advance, talkin on 147.105 +146.2, license testing after, more info at http://hamclub.org/ Date is confirmed .

February 28 **TECHCON 2026 Hillsborough County Public Safety Operations Complex, located at 9450 E. Columbus Dr., Tampa, FL 33519 You may register to either attend or make a presentation for TECHCON at http://arrlwcf.org/section-forms/wcftechconfregistration/.**

Fourth full weekend January	Winter Field Day https://www.winterfieldday.com/
Late January	Gasparilla celebration
Late February	West Central Florida Tech Conference http://arrlwcf.org/wcf-special-events/wcftechconference/

March/April	MS Walks
April	MS150 bike now named Suncoast Challenge http://www.citrustour.org/register.php
March/April	Mass Casualty Exercises
Late April	Southeastern VHF Society Conference, http://www.svhfs.org
Late April	Florida QSO Party

Mid May	March For Babies (was March of Dimes)
	https://www.marchforbabies.org/Registration/Events
Mid May	Annual Armed Forces Crossband Test
Mid-May	Florida Hurricane Exercise
Late May	Dayton Hamfest
May, Memorial Day Weekend	Wormfest
First weekend in June	Museum Ships on the Air
Fourth weekend in June	Field Day http://www.arrl.org/contests/announcements/fd/
Third weekend in August	International Lighthouse/Lightship Week https://illw.net/
September	Run for All Children's
Mid October	The Great Shakeout https://www.shakeout.org
October, 3rd weekend	JOTA, Scout Jamboree-on-the-AIR (around 14.280MHz)
Early December	ALS bike ride in Walsingham Park
December, Second weekend	Tampa Bay Hamfest http://www.fgcarc.org/

North American QSO Party

Mode	Contest Weekend
CW	2nd full weekend January
	1st full weekend August
SSB	3rd full weekend January
	3rd full weekend August
RTTY	last Saturday February
	3rd full weekend July

YOUR WORMHOLE OFFICERS

Bill AG4QX is President and editor of this newsletter, the Vice President position is open, Treasurer is Jim KD4MZL, Paul KA4IOX is the Secretary, Dee N4GD is the Repeater Trustee and Mike KV0OOM is our 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-2X. 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