

**INDIAN  
RIVER ARC**P.O. BOX 237285, COCOA  
FLORIDA 32923-7285

APRIL, 2025

**CLUB MINUTES****OFFICERS****PRESIDENT****STEVEN LUCHUK****N4UTQ****VICE-PRESIDENT****SAM THORPE****KJ4VGR****SECRETARY****ARMANDO DELGADO****KN4JN****TREASURER****DAVID LERRET****KU0R****DIRECTOR****ROBERT SCORAH****WOAGE****PAST PRESIDENT****VIRON PAYNE****N4VEP****HAPPENINGS**

The Florida QSO Party will be on the weekend of April 26th-27th. On Saturday, it starts at 1:00 PM and goes through 10:00 PM. On Sunday, it begins at 8:00 AM and goes through 6:00 PM.

This is a fun contest where everyone and their uncle tries to contact Florida in the hopes of contacting all 67 counties..

The exchange is simple. Florida

President Steve Luchuk, N4UTQ called the meeting to order at 7:15 PM. Following the Pledge of Allegiance, Steve proceeded to his President's Report. Steve said that a member who values the 220 MHz repeater asked him if it was possible to make the link with the 145.37 MHz repeater continuous. Steve then asked Dave, KU0R who manages the repeaters if that could be done. Dave expressed reservations about the idea because the 220 MHz repeater is his control link for the other club repeaters and if it is used continuously, he might not be able to control the club's repeaters if a situation developed that required immediate access.

Vice President Report: Sam, KJ4VGR mentioned that he recently acquired a radio capable of 2m SSB and wondered if anyone would be interested in using this mode in that band. Steve mentioned that 2m SSB can give excellent range in that band, but the mode has fallen in disuse because manufacturers do not make many radios anymore capable of that function.

Next, the minutes of the March meeting were approved.

Technical Committee Report: The 146.88 MHz repeater was dismantled from the hospital on the previous Friday and is now installed at the church. Likewise, the antenna was taken down on Monday and is now at the church awaiting a proper site for installation. Dave thinks that the repeater will be operational by this coming Saturday. However, he warned that coverage may be rather limited because the antenna height is low. Dave is considering some ultimate destinations for the repeater that would give as good coverage as the Rockledge hospital.

Director Report: Bob, WOAGE, who is tasked with finding advertisers for the

stations send a signal report and their county. U.S. stations outside Florida send a signal report and their state. Canadian stations send a signal report and their province. DX stations, including Puerto Rico, send a signal report and their country prefix, Maritime mobile stations send a signal report and their ITU region (Region 1, 2, or 3).

This contest is very popular and

newsletter, said that he has two possible candidates and is negotiating terms for the ads and fees.

Past President Report: Viron, N4VEP announced that the monthly QRP get-together will be this next Saturday, April 19 at Tom Stratham Park on N US1 starting at 9:00 AM.

Following the business meeting, Steve gave a presentation on the evolution of space suits.

The first space suit was worn by Wiley Post who flew a Lockheed propeller airplane up to 50,000 ft. The pressurized suit used pure oxygen. Later suits developed used partial pressure systems that applied body pressure to sustain blood circulation, particularly during high G flying episodes. There were many designs and variations on these suits. One such design, known as "tomato worms", was used for high flying bomber crews. These suits invariably provided 5 psi of pure oxygen to the users.

With the X-15 suit design, aluminum was used to reflect heat, a design factor that continued with many subsequent suit designs.

The first space walk was by the Russian Alexei Leonov, unfortunately his suit malfunctioned and inflated so that return into the capsule was impossible. He was saved by deflating the pressure in the suit to the point that he almost ran out of oxygen. Russia space suits have changed little over the years, compared to American suits.

The next development in American space suits was the one designed for the Mercury astronauts program, the Navy Mark 4 which was also used in other high altitude flying activities, like the U-2 planes.

Afterwards, space suit designs met the

its easy for Florida stations to get a pileup and make lots of contacts.

For further information, the website is <https://floridagsoparty.org>

**Virtual NTS Traffic Net** Many Technician-Class amateurs miss out on the fun and skills-learning

needs of the particular missions, like the Gemini suits, a variation of the Mark 4, but that had a problem with fogging of the astronaut visor during EVA activities. Later, the Apollo suits were manufactured by the International Latex Company that primarily made women's brasieres, like the Playtex design. These suits had 7-8 different layers in their composition, each designed to address a variety of conditions faced by the astronauts.

The Apollo 11 space suits introduced a factor called constant volume that prevented pressure changes in the interior of the suit caused by body movements. Also, each astronaut was provided with three different suits to wear during different activities, like during training and during actual space activities. These suits were very expensive, each costing over one million dollars.

Newer space suit designs include the "pumpkin suits" worn by most of the Shuttle astronauts and also used by many Air Force pilots, the Artemis suit to be used in future Artemis missions, the Boeing Starliner suit that uses some of the helmet designs of the Russians, the Space X suits where all the controls are routed through the boots, and the Orion capsule space suit.

Next, Steve discussed EVA suits. Interestingly, the Russian suit design had a door on the back of the suit for the astronaut to don the devise. Attached behind this door was the life support equipment. The American Space Shuttle EVA suits used the Hamilton Standard space suit.

Following the presentation, the meeting adjourned at 8:11 PM.

Respectfully submitted,

Armando Delgado, KN4JN

Secretary

of traffic handling because they reside in areas of the country where local traffic nets on VHF repeaters don't exist. The Virtual NTS Training Net (VNTN) seeks to address this problem with the creation of a Zoom-based local traffic net that can be accessed by anyone with an internet connection.

VNTN will accept check-ins and radiogram traffic utilizing standard phonetics and prosings; in

## HAPPENINGS

short, participants will enjoy the same experiences as those who check into conventional "RF" traffic nets. The net will incorporate a hands-on training approach in traffic procedures, radiogram creation, and relay.

VNTN meets Wednesdays at 7:00 PM ET. The VNTN URL is <https://bitl.to/3xj4>

**HamSCI, Ham Radio Science Citizen Investigation**, is preparing now for a series of meteor scatter (MS) experiments later this year and need amateur radio operators to help. While the target storms are in August (Perseids) and December (Geminids) preparation and testing is already underway. This is a combination 'special event' and a contest to generate contact data during meteor scatter events using 10 meters and 6 meters. 2025 contest rules will be released shortly. To be successful, this effort needs operators, both active and passive. Operators are needed to be active (calling CQ) on MSK144 or passive, if possible, reporting via [PSK Reporter](#) as 'monitors'. The best times are early morning hours

prior to 10M opening to F2 propagation. Meteor scatter propagation occurs well below F2 and is supported in or near the E layer where the meteor ionization tracks occur. Saturday mornings are being used regularly to announce and coordinate 10M contacts using [Ping Jockey Central](#). Announcements are also made on the Front Range Six Meter groups.io due to the substantial number of meteor scatter operators in that group.

For more information on the operating guidelines for the activity, please [visit Meteor Scatter QSO Party Guidelines | HamSCI](#). For more information about HamSCI and to join our mailing list, please visit their website [www.hamsci.org](http://www.hamsci.org).

**Effort to Save Marconi Towers in Canada – Public Invited to Vote on Project** There's an effort underway to save some of Marconi's original towers, and an online poll is open for people to [vote on it](#) being a restoration project through the "Next Great Save" project from the National

Trust for Canada. Some of Marconi's first messages were received and transmitted using the Battle Harbour Marconi Towers, thought to be the last of their kind standing in North America. News of Admiral Robert Peary's 1909 North Pole expedition was transmitted by these towers. After 100 years, the twin towers are in need of repair.

To honor 150 years since Marconi's birth, there are a number of events planned around the world to observe Marconi's birthday and International Marconi Day. In the United States, from the Port of Baltimore, Maryland, the Nuclear Ship Savannah Amateur Radio Club will operate K3S on April 26 from 1330 - 2100Z. Check spotting networks for frequency. See QRZ.com info for Savannah Award [qrz.com/db/k3s](http://qrz.com/db/k3s). A QSL card is available by contacting Ullis Fleming, 980 Patuxent Rd, Odenton, MD 21113. The Great South Bay Amateur Radio Club in Babylon, New York, will operate W2GSB from the Babylon Village Historical Society Museum for Marconi

Day on April 26, 1300 - 2030Z. Frequencies include 28.340, 21.250, 14.246, and 7.245 MHz.

The annual **Armed Forces Day (AFD) Crossband Test**, hosted by the Department of Defense, is scheduled for Saturday May 10, 2025. The event will test two-way communications between military stations and amateur radio operators as authorized by the Federal Communications Commission in Title 47 of the Code of Federal Regulations 47 CFR 97.111. Military stations will transmit on selected military frequencies and announce the specific amateur radio service frequencies that will be monitored. All scheduled times will be in UTC, and all scheduled frequencies will be upper sideband (USB), unless otherwise noted. Information on frequencies, times, and other technical information can be found at [DoD MARS - Armed Forces Day](#). A QSL card will be available in May after the test at [www.usarmymars.org/home](http://www.usarmymars.org/home). The annual DOD message will be transmitted via RTTY on 14,667 kHz at 1400 and 2000 UTC.

## ON THE AIR

**DXpedition to St. George Island**

Apr 26-May 6, 0000Z-2359Z, K4D, St. George Island, FL. K5TEN . 7.027.5 14.027.5 21.280 28.310. QSL. Bruce Brady K5TEN , 208 Mt Tabor Road, Hot Springs National Park, AR 71913. IOTA DXpedition to St. George Island NA-085. FL007S. Operation 40-6m CW&SSB. QSL to K5TEN SASE required. Logs also uploaded to LOTW. Call sign K4D. Grid EL79. [k5ten@aol.com](mailto:k5ten@aol.com)

**Marconi Day Event** Apr 26, 1300Z-2030Z, W2GSB, Babylon, NY. GREAT SOUTH BAY AMATEUR RADIO CLUB . 28.340 21.250 14.246 7.245. Certificate. W2GSB GSBAC, PO Box 1356, Babylon, NY 11704. Operating from the Babylon

Village Historical Society Museum for Marconi Day, which was the home of the Marconi School for radio operators 3 stations using CW SSB FT8 [WWW.GSBARC.ORG](http://WWW.GSBARC.ORG)

**80th Anniversary Of The Victory In Europe, VE Day**

May 8-May 18, 1300Z-2359Z, W2V, Gastonia, NC. Radio Gastonia . 7.245 14.245 21.345 28.445. QSL. Dave Arruzza, NC4DA, 243 Moore Dr, Gastonia, NC 28056. <https://www.qrz.com/db/W2V>

**National Police Appreciation Week**

May 10-May 17, 0000Z-0000Z, N4P, Gainesville, FL. W.T. Lofton High School ARC K4WTL. 14.325 MHz. QSL. W.T. Lofton High School ARC K4WTL, 3000 East University Avenue, Gainesville, FL 32646. Let's show some

appreciation for the work our Police do for us!

**Armed Forces Day** May 10, 1600Z-2300Z, NI6IW, San Diego, CA. USS Midway Museum Ship. 14.320 7.250 14.070 PSK31 DSTAR on Papa System Repeaters. QSL. USS Midway Museum Ship COMEDTRA, 910 N Harbor Drive, San Diego, CA 92101. [www.qrz.com/db/ni6iw](http://www.qrz.com/db/ni6iw)

**Golden Spike Special Event**

**Station - W7G** May 10, 1500Z-2300Z, W7G, Corinne, UT. Ogden Amateur Radio Club (OARC) W7SU. 7.235 14.255 7.040 14.040. QSL. Ogden Amateur Radio Club (OARC) W7SU, PO Box 3353, Ogden, UT 84409. Commemorating

the completion of the US transcontinental railroad at Promontory Point Utah by driving the final spike, a Golden Spike, in 1869. Refer to: <http://w7g.org> , <http://ogdenarc.org> [w7g.org](http://w7g.org)

**BOTSWANA**, A2. Luke, ZS6LUK will be QRV as A25LUK until the end of April. Activity will be on 40, 30, 20, and 10 meters using SSB and FT8. He plans to activate some POTA locations. QSL to home call.

**BOSNIA AND HERZEGOVINA**, E7. Special event callsign E7100IARU is QRV until April 30 to celebrate the centenary of the IARU. Activity is on all bands and modes. QSL via bureau.

## The Maunder Minimum by Armando Delgado, KN4JN

Presently, we are at the peak of solar Cycle 25, the current episode of the 11 year recurring sequence of solar activity. This cycle began in December, 2019 following a very confusing low activity Cycle 24. The usual cycle duration is 11 years, which suggests that we are in the middle of the present active cycle. We can expect high activity for the next few months and then a gradual decrease as we approach Cycle 26 in another 5 years or so.

Since the beginning of the last century, solar cycles have performed faithfully according to the estimated duration of 11 years, with active cycles being followed by less active ones and vice versa. However, this pattern is not universal or perpetual. There are historical records that show some periods when solar active patterns, as measured by the sunspot activity, did not follow the "rule". The best known and most dramatic episode since modern counting of sunspots began is known as the Maunder Minimum, named after the solar astronomers Edward Maunder and his wife Annie Maunder who first closely studied the event and published reports in 1890 and 1894. The Maunder Minimum was a period of 70 years between 1645 and 1715 when the number of sunspots diminished, with many consecutive years showing no sunspots at all. The phenomenon was first reported by Gustav Spörer in 1887 and 1889 and later more closely evaluated by the Maunder. This is the first extended period of minimal solar activity that could be determined by the sunspot number, since prior to 1700 the counting and reporting of sunspots was irregular, subjective and sporadic. It was only after 1848, when Rudolf Wolff created the system for determining a sunspot number based on multiple observations, making them more accurate, that a precise study of sunspot patterns could be made. More recently, studies using proxy determinations based on the levels of carbon-14 in tree rings and beryllium-10 from ice deposits suggest that there

were other historical periods of minimal solar activity. These include the Spörer Minimum from 1450 to 1540 and the Dalton Minimum from 1790 to 1820. Other, less accurate, data based on historical reports from Chinese, Greek, and other ancient observers of the skies suggest that there were many other periods of extended diminished observed sunspots.

Solar activity is important for radio wave propagation since the level of ionization of our upper atmosphere produced by solar radiation determines how well radio signals are refracted back to Earth to give long distance contacts, particularly in the higher frequencies. The last year of solar Cycle 24, 2019, had 281 days without any sunspots, a record low surpassing many previous cycles, which led many observers to wonder if we were about to enter another extended period of minimum solar activity. That did not happen, but since we know that long periods of diminished solar radiation are a recurring phenomenon, we can expect another episode to occur at some time in the future, perhaps as soon as the next low activity cycle, Cycle 26.

During solar Cycle 24 amateurs noted that the higher frequency bands, those above 20 meters, were mostly dead on most days, except for very rare, brief openings along with extraordinary sporadic E occurrences in 6 meter and 10 meters. Amateur radio activity in the lower bands increased, with many operators becoming active in 160 meter. Unfortunately, the lower bands are mostly restricted to evening activity, which leaves only 20 meters as the workhorse for daytime operations.

Solar Cycle 25 still has at least 5 more years to go, giving us high solar fluxes and hopefully,

as the cycle begins to weaken, less CMEs and other solar bursts that saturate the ionosphere, blocking radio propagation. We can still expect the best propagation for amateur radio for the next few years, particularly in the higher frequencies. Even during the first 5 years of Cycle 26 we may see fairly good propagation before the cycle reaches its nadir. After that point, things should begin to look more like Cycle 24, with the loss of the higher frequencies, and with any luck the cycle will end 5 years later and be followed by another high solar activity cycle. On the other hand, if the finale of Cycle 24 was a harbinger of future low solar activity, perhaps another long period like the Maunder Minimum, we hams must prepare to research the lower frequency amateur bands and be ready to turn into night owls

Yet, there is hope that solar activity will continue to rise. Recent studies suggest that Cycle 24 was the low end of the [Centennial Gleissberg](#) Cycle, a solar activity pattern that overlaps the 11 year cycle and recurs every 80-100 years, manifesting as a decrease in the sunspot numbers. A recent study in the journal *Space Weather* indicated that the solar flux maxima has been decreasing over the period of 1980-2021, while at the same time the proton population of the Van Allen Belt has increased, changes that are compatible with the Gleissberg Cycle. If that is the case, we can expect increasing intensity in the future solar cycles for the next 50 years.



### W1AW CW PRACTICE TRANSMISSIONS

7 PM EST Slow CW : 5-15 WPM  
Mon, Wed, Fri

7 PM EST Fast CW: 35-10 WPM  
Tue, Thu

### FREQUENCIES:

1.8025, 3.5815, 7.0475,  
14.0475, 18.0775, 21.0675,  
28.0675, 50.350, 147.555



### Editor's Note:

Send comments about the Newsletter or to contribute information or articles to the Editor's email address:

[olardelga@aol.com](mailto:olardelga@aol.com).

ACTIVE REPEATERS INCLUDING DMR, PACKET & SIMPLEX						RACESBRE0008 REV B	
Repeaters & Packet are open for all licensed amateur radio operators to use.							
OUTPUT FREQ.	STD. NAME	OFFSET	tone/cc	CALL	LOCATION	OWNER	NOTES
WBFM							
145.130	130 VB	-600	107.2	AB4AZ	VERO BEACH, INDIAN RIVER	AB4AZ	
145.350	350 SC	-600	103.5	K4QSC	St. CLOUD, OSCEOLA	K1XC	Radio Science Club, FI Club
145.370	370 CO	-600	156.7	W2SDB	COCOA-BROADCAST CT.	IRARC	Yaesu Repeater replaced with Bridgecom FM
145.470	470 ME	-600	107.2	K4HRS	MELBOURNE- RIALTO PL.	HIRAC	
145.490	490 TI	-600	100.0	WN3DHI	TITUSVILLE SR405 & Fox 1k rd.	WN3DHI	
146.610	610 ME	-600	None/107.2	W4MLB	MELBOURNE- HOLMES HOSP	PCARS	Tone Downlink only
146.625	625 MM	-600	100.0	KE4NUZ	NW of MIMS NEAR HARRISON RD.	KE4NUZ	Limited coverage
146.775	775 MM	-600	100.0	K4KSC	NW of MIMS Hog Valley , W of I95	K4KSC	
146.850	850 ME	-600	None/107.2	W4MLB	PALM BAY- Port Malabar Rd.	PCARS	Tone Downlink Only
146.880	880 RO	-600	107.2	W4NLX	ROCKLEDGE- WUESTHOFF HOSP.	IRARC	FUSION Repeater replaced with Bridgecom FM
146.895	895 PB	-600	107.2/107.2	K4EOC	PALM BAY- DeGroot Library	EOC	TSQL as of 5/2018
146.910	910 TI	-600	107.2	K4KSC	TITUSVILLE Water Tower on south st.	TARC	
146.940	940 RO	-600	None	K4GCC	ROCKLEDGE Carver Rd. WLRQ Tower	LISATS	
146.970	970 TI	-600	107.2	K4KSC	TITUSVILLE-T'VILLE TOWERS	TARC	
147.075	075 SC	+600	107.2/107.2	K4EOC	SCOTTSMOOR Near US1-Aurantia Rd	EOC	TSQL as of 5/2018 Relocated 4/2019
147.135	135 RO	+600	107.2/107.2	K4EOC	ROCKLEDGE-EOC	EOC	TSql as of 5/2018
147.240	240 DE	+600	123.0	KV4EOC	DELAND	VARES	
147.255	255 PB	+600	107.2	K4DCS	Near Babcock & Palm City S City limit	PBARC	
147.330	330 TI	+600	107.2	K4NBR	TITUSVILLE-PARRISH HOSP.	NBARC	
147.360	360 TI	+600	107.2	N4TDX	TITUSVILLE-PARRISH HOSP.	NBARC	DSTAR Gateway in work
442.850	850TI4	+5000	107.2/107/2	N4TDX	TITUSVILLE-PARRISH HOSP.	NBARC	TSql;FUSION/WBFM/WIRES-X
444.325	325ME4	+5000	107.2	K4DCS	MELBOURNE-TRINITY TWRS-E	PBARC	
444.375	CNLBRE	+5000	107.2		I95 FDT Twr 1/2 Mile N of County Line	SARNET	"SARNet Sebastian Repeater"
444.425	425ME4	+5000	107.2	W4MLB	MELBOURNE- RIALTO PL.	PCARS	
444.525	525RO4	+5000	103.5/103.5	K4EOC	ROCKLEDGE-EOC	EOC	TSql; VOICE/NBEMS
444.650	CNMBRE	+5000	107.2	W4NLX	COCOA- FHP SR520	IRARC	"SARNet Cocoa Repeater"
444.750	750TI4	+5000	156.7/156.7	N4TDX	TITUSVILLE- TGO WATERTOER 230 ft.	NBARC	TSql
444.875	875MI4	+5000	107.2	KC2UFO	MERRITT IS. COURTNEY SPRS.	K4UZM	
444.925	925KS4	+5000	131.8/131.8	N1KSC	KENNEDY SP. CTR.-VAB	KSCARC	FM Tsql ; P25 capable
224.120	120CO2	-1600	123.0	AA4CD	COCOA Broadcast Ct.	AA4CD	
DMR							
444.150	150TI4	+5000	CC1	K2JO	TITUSVILLE-PARRISH HOSP.	KC2CWT	DMR FL
444.575	575CO4	+5000	CC3	K4DJN	COCOA BROADCAST CT.	AA4CD	DMR Brandmeister
444.675	675TI4	+5000	CC3	K4DJN	TITUSVILLE-T'VILLE TOWERS	AA4CD	DMR Brandmeister
ATV							
427.250	250CO4			K4ATV	COCOA BROADCAST CT.	LISATS	NTSC INPUT 439.25 See www.lisats.org
PACKET STATIONS:							
145.090	WL2KPB	WINLINK		W2PH-10	PALM BAY-W2PH QTH	PBARC	WINLINK GATEWAY
145.090	090 ME	PCARS		W4MLB-2	MELBOURNE-TRINITY TWRS-EAST	PCARS-K1YON	BBS W4MLB-4 EASTNET
145.770	770 PB	SEDAN		K4EOC-7	PALM BAY	N2DB	http://www.fla-sedan.com
145.770	770 TI	SEDAN		KD4MWO-4	TITUSVILLE	N2DB	INACTIVE NODE
BREVARD RACES/ARES SIMPLEX							
146.480	CENTX	SIMPLEX		N/A	CENTRAL REG	IRARC	CENTRAL NET SIMPLEX BACKUP
146.550	SOUTHX	SIMPLEX		N/A	SOUTH REGION	PBARC	SOUTH NET SIMPLEX BACKUP
146.580	MLBX	SIMPLEX		N/A	MELBOURNE REGION	PCARS	MELBOURNE REGION NET SIMPLEX BACKUP
146.595	NORTHX	SIMPLEX		N/A	NORTH REGION	TARC	NORTH NET SIMPLEX BACKUP
147.540	EOCROX	SIMPLEX		N/A	RACES Bay	EOC	EOC VOICE/NBEMS
SIMPLEX							
146.520	CALL52	SIMPLEX		N/A	Station to station, anywhere		VHF national simplex calling freq
146.490	TAC A	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
146.560	NBRX	SIMPLEX		N/A	NBARC -Club/Parrish Hosptial Activities		
146.580	TAC B	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
147.420	TAC C	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
147.420	IRARCX	SIMPLEX		N/A	IRARC "FUN NET" and CLUB ACTIVIES		
147.450	TAC D	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
147.570	TAC E	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
446.000	CALL46	SIMPLEX		N/A	Station to station, anywhere		UHF national simplex calling freq
446.500	TAC A4	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
446.600	TAC B4	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
446.700	TAC C4	SIMPLEX		N/A	Station to station, anywhere		Standardized tactical option since 2006
2 Meter & 70 cm WBFM repeaters use CTCSS; if one frequency is listed it is for uplink (user Tx) , if two are listed the repeater is set for uplink and downlink (user Tx and Rx)							
Repeater Call Signs in bold are owned by Brevard Emergency Management and are maintained by the county. Repeater Trustee: Ron K2RJ							
	NOT ON AIR						
Standard Names in Bold are recommended for Emergency Radio in Brevard *							
PBARC= Palm Bay Amateur Radio Club (Replaces DCS for South Brevard) See Ed W2PH for more info							