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SPURIOUS EMISSIONS

APRIL, 2026

INDIAN RIVER ARC

P.O. BOX 237285, COCOA
FLORIDA 32923-7285

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N4UTQ

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N4VEP

CLUB MINUTES

President Steve Luchuk, N4UTQ called the meeting to order at 7:15 PM.

Following the Pledge of Allegiance, Steve called for visitors. Present were Nannette, KR4INM from Cocoa and Karl, KQ4YAH from Satellite Beach. Both were welcomed.

President's Report: Steve said that members continue to participate in the Saturday morning testing exercises. He likes 6 meter because it is quiet. Greg, AB4GO mentioned that he recently had a 6 meter contact with a station in Trinidad using 100 w and a new halo antenna. He also said that KW4DX from Titusville runs a 6 meter net on Friday evenings at 7:00 PM.

Vice-President Report: Sam, KJ4VGR said that he got his new GAP antenna installed and made a contact on 20m.

Treasurer's Report: All finances are unchanged. The checking account remains at $1776.38 and the Equipment Fund $2037.65. The Treasurer's Report was approved for audit.

Next, the minutes of the March meeting were approved.

Technical Committee: Dave, KU0R was not present, but Steve mentioned that several people have told him that the 146.88 MHz repeater is off the air and that a hum has been noticed in the 145.37 MHz repeater.

Past President Report: Viron, N4VEP said that this coming Saturday there will be a QRP operation at the F. Burton Smith Park on Hwy. 520 before the Lone Cabbage Fish Camp running from about 9:00 AM until about 1:00 PM. Greg, AB4GO stated that during last Saturday QRP the 10m and 15m bands were open and that they achieved several European contacts, but lately those bands have shut down most days as the solar flux has dropped.

Following the business meeting, Steve gave a presentation on NBEMS: Narrow Band Emergency Messaging System.

NBEMS is a collection of programs that allow for multiple digital modes. It is a free download from www.W1HKJ.org. The principal app is *fldigi*, but associated programs, like *flmessage* are important for formatting messages in the different forms used by agencies such as FEMA, the Red Cross, etc. The program has templates for most of the forms used by services associated with amateur radio.

Of all the digital modes available in *fldigi*, BEARS used MT-63 2K which is a rather fast digital mode and so is the BPSK group of modes. Others, like Thor are much slower but more accurate, especially in high noise situations.

The program also has many macros that allow for fast action on repetitive steps.

Steve mentioned that there is a net every Tuesday at 9:00 PM, the Transcontinental NBEMS Net, that lets participants practice using the program. It transmits using Olivia 8/500 on 14.068 MHz. with a backup frequency of 7.0805 MHz.

Following the presentation, the meeting adjourned at 8:25 PM.

Respectfully submitted,

Armando Delgado, KN4JN

Secretary

HAPPENINGS

April is when amateur radio clubs begin to plan for Field Day. This year, solar conditions promise the best radio propagation to be expected in many years. We are past the peak of the current high solar cycle, when solar activity begins to weaken but the solar flux is still high and the number and occurrence of CMEs are less plentiful. Plus, Field Day is just days past the summer solstice, when geomagnetic disturbances are at a minimum. Actually, if the theory holds true, this may turn out to be the best Field Day for the next decade or two, since the next eleven year solar cycle will be a low activity cycle; and for many of us, perhaps the very last opportunity for a great Field Day.

A few years back, the ARRL changed the rules for Field Day, allowing amateurs in all the Americas to participate. As per the ARRL website: "Field Day is open to all amateurs in the areas covered by the ARRL/RAC Field Organizations and countries within IARU Region 2 (North and South America). DX stations residing in other regions may be contacted for credit, but are not eligible to submit entries." So with the expected great propagation, there is a once-in-a-lifetime opportunity to make many contacts.

One other note, the ARRL Field Day rules allow club members to operate from home and contribute their contacts to their club. The rule reads as follow: "An aggregate club score will also be published, which will be the sum of all individual entries indicating a specific club (similar to the aggregate score totals used in ARRL affiliated club competitions). Participants from any Class

HAPPENINGS

can optionally include a single club name with their submitted results following Field Day. For example, if Podunk Hollow Radio Club members Becky, W1BXY, and Hiram, W1AW, both participate in 2024 Field Day -- Hiram from his Class D home station, and Becky from her Class C mobile station -- both can include the radio club's name when reporting their individual results. The published results listing will include individual scores for Hiram and Becky, plus a combined score for all entries identified as Podunk Hollow Radio Club."

Our club has participated in Field Day yearly since its founding. Over the years, member participation waxed and waned due to multiple factors, but there always was a core of enthusiasts that found the time and energy to make it happen. Nothing has changed in that regard, but this year presents a unique opportunity for an exceptional Field Day experience. Members should join and bring family and friends to experience a unique event. Or if unable to join the group, do Field Day from home (Class D) and submit the log to the ARRL listing IRARC as their club in their submission. That way, the club will be able to boost our final score for the event.

The ARRL is trying to integrate their National Traffic System (NTS) with the emergency communications component of ARES and FEMA-related organizations. Their hope is to use the NTS during emergencies to carry messages at a national level. Unfortunately, the NTS uses the old tried-and-tested radiogram format for their communications, while official organizations use their own forms, most based on the IC-213 format. To bridge the difference, the ARRL developed a process to incorporate the IC-213 into the radiogram format. Presently, they are training traffic handlers in NTS to use and recognize messages originating from non-NTS sources and at the same time, training amateurs who operate at served agencies to understand the radiogram format and limitations so that messages can flow smoothly through the process. This is a project in progress and has not been tested in real life situations as yet.
For more information check https://nts2.arrl.org/ics-213/

From the ARRL Letter of April 9, 2026:
The Department of Defense will host this year's Armed Forces Day (AFD) Crossband Test, scheduled for May 9, 2026. This annual event is open to all licensed amateur radio operators and will not impact any public or private communications. For more than 50 years, military and amateur stations have taken part in this event, which is an interoperability exercise between hobbyist and government radio stations. The AFD Crossband Test is a unique opportunity to test two-way communication between military communicators and radio stations in the Amateur Radio Service (ARS), as authorized in 47 CFR 97.111. These tests provide opportunities and challenges for radio operators to demonstrate individual technical skills in a tightly controlled exercise scenario. Military stations will transmit on selected military frequencies and will announce the specific ARS frequencies monitored. All times are ZULU (Z), and all frequencies are upper sideband (USB) unless otherwise noted. An AFD message will be transmitted utilizing the Military Standard (MIL-STD) Serial PSK waveform (M110) followed by MIL-STD Wide Shift FSK (850 Hz RTTY) as described in MILSTD 188-110A/B.
To document your contacts with a QSL visit http://www.usarmymars.org/events-and-announcements and complete the request form.

Sunday, April 19 features the **ARRL Rookie Roundup (SSB).** This 6-hour event is specifically designed for those licensed for 3 years or less. "Experienced operators are strongly encouraged to participate and help new operators — either on the air or in person."

ON THE AIR

Franklin County VA Moonshine Heritage Month Apr 15-Apr 30, 0000Z-2359Z, W4M, Boones Mill, VA. AA4SS. 7 14. QSL. Timothy Boyd, 150 Forest Hill Ln, Rocky Mount, VA 24151.

Florida State Parks on the Air Contest Apr 17-Apr 20, 1200Z -2359Z, W4AC, Nokomis, FL. Tamiami Amateur Radio Club. 14.337. Certificate. Tamiami ARC, PO Box 976, Nokomis, FL 34274. fspota.org

RODRIGUES ISLAND, 3B9. Suvarna, VU3OPT, will be QRV as 3B9N from April 4 to May 22. Activity will be on 20, 15, and 10 meters. QSL via VU3OPT.

GUINEA, 3X. Elvira, IV3FSG, will be QRV as 3X3A from Roume Island, IOTA AF-051, from April 11 to 25. Activity will be on 80 through 10 meters and 6 meters using CW, SSB, FT8, FT4, and FT2. QSL via IK2WAD.

ANTARCTICA. Ramon, LU1DMZ, is QRV as LU1DMZ/Z from the Orcadas base on Laurie Island, IOTA AN-008, until the end of 2026. Tom, VK2TBC, is also QRV as VK0TBC from the Casey base on the Bailey peninsula, IOTA AN -016. QSL info unknown.

WESTERN SAHARA, S0. Naama, S01A, and Azman, S01AH, are QRV as S09S until the end of May to mark the 50th anniversary of Western Sahara. QSL via OQRS or LoTW.

THE GAMBIA, C5. F4AGG & F5RAV are QRV as C5C, and C5D from April 25 to May 8. Activity on HF Bands and using CW, SSB, RTTY, PSK, and FT8. QSL via LOTW or F5RAV.

GREECE, SV. Members of the Radio Amateur Association of Western Greece are QRV with special callsign SZ40A until May 31 to celebrate forty years of continuous presence, service, and contribution to amateur radio. Activity is on various HF bands and modes. QSL via ON3UN.

Florida QSO PARTY Starts the last Saturday of April. For 2026, the Florida QSO Party dates will be April 25th- 26th. There are two 10-hour operating periods separated by a 10-hour break period. All operators may operate the full 20 hours. 1600Z, Apr 25 to 0159Z, Apr 26 and 1200Z-2159Z, Apr 26, 2026.
Rules at https://floridaqsoparty.org/rules/

TX9W Team will be active from **Marquesas Islands,** IOTA OC -027, 19 - 30 April 2026.
Team members of the Oklahoma DX Association, K5WE, W5CCP, N5TEA, K4VBM, WD5COV, F6BCW.
They will operate on 160 - 6m, CW, SSB, FT4, FT8, RTTY.
Planned freqs:
CW - 7007, 10107, 14007, 18077, 21007, 24903 and 28007 KHz
SSB - 14170, 18130, 21270, 24945 and 28485 KHz

The Russell-McPherron Effect by Armando Delgado, KN4JN

The sun fascinates humanity. Its daily appearance in the sky giving us light and warmth, in essence life, has been recognized by mankind since the beginning of time. Many ancient societies worshiped the sun as a god and most observed it, in their wonderment, trying to figure what the sun was all about.
Ancient civilizations that left written records, like the Chinese and the Greeks reported solar observations, including noticing sunspots. Unfortunately, ancient observers were limited to naked eye observations, since they lacked instruments.

After Galileo invented his astronomical telescope in 1609, celestial and solar observations improved rapidly. Many European nations established observatories that carried out regular observations. In time, these continuous solar studies revealed the 11-year cycle of sunspots that later became associated with solar activity. Occurrences like the Carrington Event of 1859, when a previously observed solar flare was followed by an intense geomagnetic storm on Earth, further proved the connection, as well as the sun's influence on the Earth's magnetic field.

Observatories around the Earth began to monitor geomagnetic disturbances, keeping records of their occurrence. Like previously with the sunspots, longitudinal yearly records, in time, showed regular patterns of variations in the geomagnetic disturbances, most notably an increase in disturbances during the equinoxes.

The Earth's axis of rotation is tilted 23.5° to its orbital plane around the sun. This tilt leads to the apparent north-south changes of solar declination as the Earth moves in its orbit around the sun. It also gives us the different seasons of the year.
During the equinoxes, in March and September, the Earth's axis is perpendicular to the orbital plane. At those times, the sun is also perpendicular to the Earth and it crosses the Equator, its apparent motion going north in the spring and south in the fall. Also on those days, the duration of the night and day are equal, the origin of the name of equinox, from the Latin words aequus=equal and nox=night.

For many years scientists tried to explain the reason for the increased geomagnetic disturbances during the equinoxes. Many hypotheses were proposed, but none provided a definitive answer. Then in the January, 1973 issue of the *Journal of Geophysical Research*, C. T. Russell and R. L. McPherron from the Institute of Geophysics and Planetary Physics of the University of California presented a hypothesis that eventually became the accepted explanation for the phenomenon and that is known today as the Russell-McPherron Effect.
In their paper, these scientists explained that the sun has a magnetic field that is constant in relation to Earth. On the other hand, due to the Earth's axial tilt, the Earth's magnetosphere sustains an angle in relation to the sun magnetic field that changes as the Earth moves around its orbit. During the equinoxes this angle reduces to 0° leading to an alignment of the two magnetic fields.

In the meantime, the sun ejects a constant stream of plasma, consisting of charged particles, mostly protons and electrons, into space, that we know as the solar wind. Charged particles in motion induce a magnetic field, and the solar wind does create a magnetic field, known as the interplanetary magnetic field.

The sun's rotation around its axis imparts a circular momentum to the solar wind, causing it to spin. This spin produces a three-dimensional magnetic field with axes in the X, Y, and Z directions. The Z component is parallel to the Earth's magnetosphere, with the southern-directed portion having the strongest effect on the Earth's magnetic field.

The Sun-Earth magnetic alignment during the equinoxes creates a shunt that directs the solar wind towards Earth, leading to an increase in the geomagnetic disturbances. As the angle between the magnetic fields increases, as the Earth moves in in its orbit, the intensity of the disturbances decrease, reaching a minimum at the time of the solstices (June and December), when the magnetic differential angle reaches its maximum.

Radio communications rely primarily on the ionosphere for propagation, particularly at the higher frequencies, during the day. An unstable ionosphere interferes with propagation. Even if the K_p index remains quiet, geomagnetic disturbances will cause radio signals to weaken and will enhance signal fading, making sustained contacts more difficult. Thus the middle and end of March and September are probably the worst times of the year for radio communications. On the other hand, during the solstices of June and December, when the geomagnetic disturbances are at a minimum, radio propagation should be at its best... if the theory is correct.

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.

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	K4OSC	St. CLOUD, OSCEOLA	K1XC	Radio Science Club, Fl 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 lk 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 Fl
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 limi	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 Lin	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 a

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