



**INDIAN  
RIVER ARC**

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

VOLUME XLI, NUMBER 5

# SPURIOUS EMISSIONS

MAY, 2020

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## CLUB MINUTES

The club held the May meeting via Zoom in a historical first time event on Tuesday 19, 2020.

Unfortunately, due to unexpected circumstances produced by the new technology and unforeseen complications no minutes were taken of the meeting.

Next month's meeting will be on the third Tuesday of the month, **June 16** at 7:00 PM. At this time it has not been determined if it will be again via Zoom or if it will be at the **River of Life Assembly of God Church at 1890 N. Courtenay Parkway on Merritt Island.**

Tune to the ARES net on 145.37 MHz every Wednesday for further information on club activities.

## HAPPENINGS

**The Medical Net**, a special COVID-19 net, is running Wednesdays, 0130 UTC, on 7.222 MHz. The net deals with correct data on COVID-19 epidemiology, care issues, and more. Net control will be Dr. Harry Przekop, WB9EDP, a past president of the Medical Amateur Radio Council Organization (MARCO) and now a director at large. Przekop is a specialist in infectious diseases and biomedical physics and is board-certified

as an expert in HIV care. Participants do not need to be physicians or medical providers to check in, ask questions, and otherwise take part, but no diagnoses can be rendered. The regular MARCO Grand Rounds Net is held on Sundays, 1500 UTC, on 14.342 MHz.

The May/June digital editions of QEX and the National Contest Journal (NCJ) are now available

for reading on your iOS or Android mobile device through the ARRL Magazines app, or with your desktop or laptop computer from the ARRL Magazines page on the web at [www.arrl.org/arrl-magazines](http://www.arrl.org/arrl-magazines). App users please note that you may need to clear the cache in the app's Settings menu to fully update. The digital versions of QEX and NCJ are new benefits for all ARRL members. Members now have exclusive

access to four magazines, each with their own unique content: QST, On the Air, QEX, and NCJ.

### **Fully-Remote Amateur Radio License Exam Administration.**

The USA's Ham Study group have released the latest update on the Fully-Remote Amateur Radio Exam Process. On March 26th, 2020, the first-ever fully-remote amateur radio exam was held to demonstrate

## HAPPENINGS

the capabilities of these technologies and align with the needs of the W5YI VEC that authorized the trial. Several other VE Teams have begun administering fully-remote exams using [ExamTools.org](#) along with video conferencing systems. Read the Press Release [here](#).

The Sun Radio Interferometer Space Experiment (SunRISE) is a proposed NASA Heliophysics Explorer Mission of Opportunity that finished Phase A last year. SunRISE will provide an entirely new view on particle acceleration and transport in the inner heliosphere by creating the first low radio frequency interferometer in space to localize heliospheric radio emissions. Six small spacecraft (S/C) will fly in a supersynchronous geosynchronous Earth orbit (GEO) within about 10 km of each other and image the Sun in a

portion of the spectrum that is blocked by the ionosphere and cannot be observed from Earth. Mission-enabling advances in software-defined radios and GPS navigation and timing, developed and flown over the past few years on the Mars Cube One (MarCO) and DARPA High Frequency Research (DHFR) missions, have finally made this concept affordable and low-risk. By determining the location of decametrichectometric (DH) radio bursts from 0.1 MHz–25 MHz, SunRISE provides key information on particle acceleration mechanisms associated with coronal mass ejections (CMEs) and the magnetic field topology from active regions into interplanetary space. SunRISE is highly complementary to current missions, such as Parker Solar Probe and Solar Orbiter, and to the ground-based Daniel K. Inouye Solar Telescope (DKIST). The above text is contained in the full story from [here](#).

Interesting video [here](#) on a do-it-yourself project to convert a server power supply into a 12V, 63 amp amateur radio unit.

**Contest University (CTU) 2020 will be online and free.** Tim Duffy, K3LR, has announced that CTU USA 2020 will be held online via Zoom on Thursday, May 14, starting at 1245 UTC. CTU 2020 is free. The CTU course outline has been posted online. Connection details to the CTU Zoom bridge will be posted on the Contest University site 1 week prior to CTU. **Sessions will be recorded for viewing any time after May 14.** Slide decks will be posted on the CTU website as well. At the end of CTU 2020, Dave Siddall, K3ZJ, will present the 2020 CQ Contest Hall of Fame awards.

**Kcmil** An abbreviation of "thousands of circular mils" which is a measurement of wire gauge. A "circular mil" is equal to

the area of a circle with a diameter of one mil, or 0.0005067 square millimeters. Kcmil is used for larger diameter wires, while AWG (American Wire Gauge) is used for smaller diameter wires.

DX Engineering's Blog, On All Bands, has posted commentary and a video entitled "[Tower Safety \(Part 1\): An Introduction to Climbing](#)." The videos feature Tim Jellison, W3YQ, who is "highly experienced and credentialed tower climber, certified rescue technician, and qualified climbing instructor."

**VE/VJ Day amateur radio marathon** on the HF bands and 6m using SSB, CW and digital modes.

Three special UK call signs **GB75PEACE**, **GB1945PE**, **G B1945PJ** will be on the air from 1-31 May 2020 and 1-31 August 2020. [Details here](#).

## ON THE AIR

**The Indianapolis 500** May 18-May 24, 0400Z-0400Z, W9IMS, Indianapolis, IN. The Indianapolis Motor Speedway Amateur Radio Club. 18.140 14.245 7.245 3.840. Certificate & QSL. Indianapolis Motor Speedway Amateur Radio Club, P.O. Box 30954, Indianapolis, IN 46230. See the website for ALL information! [www.w9ims.org](#)

**Gulf Coast Hurricanes Special Event 2020** May 23-May 27, 0001Z-2359Z, AG5Z, Purvis, MS. Larry Morgan. 3.862 7.250 14.255 21.300. Certificate. Larry Morgan, 96 Oak Haven Rd., Purvis, MS 39475. Stations include W4F Florida, W4A Alabama, W5M Mississippi, W5L Louisiana, W5T Texas, bonus station K5H (Katrina 5 Hurricane) Hurricane experiences discussions are

encouraged. For this reason FT8 contacts will not count. This special event is to increase awareness of the hurricane season that will start on June 1. [www.ag5z.net](#)

**Strange Antenna Challenge** May 23-May 25, 0001Z-2359Z, K0S, Springfield, MO. Erik Weaver, NOEW. 28.400 14.300 7.200 3.900. QSL. Erik Weaver, 4857 E. Farm Rd. 136, Springfield, MO 65809. Antennas for the Strange Antenna Challenge are to be constructed of unusual, make-shift, or debris material that may be on hand following a natural disaster. Past examples include bridges, statues, folding chairs, bed springs, fences, beer/pop cans, tomato cages, and shopping carts. Basically, just do NOT use standard pipe or wire antennas. We encourage any ham who wishes to become their own special event station, by simply ap-

pending /k0s onto your own call sign, and you need to respond to your own QSL requests. NOEW will be operating the three letter call sign K0S. This is tons of fun! I encourage you to promote your club with this "strange" event, and let the media know what you are doing! [erikeweaver@gmail.com](mailto:erikeweaver@gmail.com)

**Dog Island IOTA DXpedition to NA-085/EL79** Jun 1-Jun 11, 0059Z-2359Z, K4D, Caribelle, FL. K5TEN. 14.074 7.074 14.235 7.190. QSL. Bruce Brady, 208 Mt Tabor Rd., Hot Springs National Park, AR 71913. Rare grid EL79. Rare IOTA NA-085. Paper QSL preferred, also LoTW and eQSL. See website for QSL details. [rockradio1@aol.com](mailto:rockradio1@aol.com) or [www.grz.com/db/k4d](http://www.grz.com/db/k4d)

**W2W - D-Day Commemoration** Jun 3-Jun 10, 1300Z-2200Z, W2W, Baltimore, MD. Amateur Radio Club of the National Electronics Museum. 14.244 14.044 7.244 7.044; operation on 80 meters (3.544, 3.844) and digital modes possible during event.. Certificate & QSL. W2W D-Day, P.O. Box 1693, MS 4015, Baltimore, MD 21203. Amateur Radio Club of the National Electronics Museum (ARCNEEM) will operate W2W in commemoration of the anniversary of D-Day and the role of electronics in WWII. Primary operation will be June 6-June 7 with additional operation possible during the June 3-5 and 8-10 periods as operator availability permits. Frequencies +/- according to QRM. QSL and Certificate available via SASE; details at [www-2.us](#)

## The Ether by Armando Delgado, KN4JN

The ancient Greeks believed that in the heavens above, where their gods lived, there was a medium much purer than air that the gods breathed. They called this substance the ether.

When Isaac Newton first proposed his theory of gravitation, he reasoned that for the force of gravity to spread between celestial bodies there should be a medium that allowed the propagation of this force. In reference to the ancient Greek's pure substance in the heavens, he called it the ether.

In the 19<sup>th</sup> Century, when scientists first proposed the wave theory of light, like Newton, they reasoned that if sound waves require air for transmission and ocean waves require water then light waves would as well require a medium to propagate. They used the term *luminous ether* to refer to this hypothetical, invisible substance.

By the middle of the 19<sup>th</sup> Century, the concept of the ether was established science, and the scientific debate focused on whether the ether was a static or a moving medium, rather than on its existence. In order to settle that question, in 1887 Albert Michelson, who had previously measured the speed of light by the use of an interferometer, and Edward Morley proposed an experiment using a more sensitive interferometer to clarify the nature of the ether. They reckoned that if the ether was a moving substance, then as the earth circled the sun in its orbit, at some point in time it would be moving in the direction of the ether and at other times against the moving medium. In each case, the speed of light would change. They ran their experiment for a number of months, but the results showed no significant variation in the measured speed of light.

A few years prior to this experiment, in 1862, James Clerk Maxwell published his now famous equations of electromagnetism. He demonstrated that electromagnetic waves, including light, were

self-sustaining electric and magnetic fields perpendicular to each other, moving at the speed of light, and did not require a medium for propagation.

At the beginning of the 20<sup>th</sup> Century, in 1905, Albert Einstein published his special theory of relativity where, expanding on Maxwell's work, he showed that the speed of light was constant. Thus there could not be a propagating medium. Such a medium could not be universally homogeneous and if light depended on it for transmission, it would cause changes in the speed of light.

Following these three very powerful confirmations, the theory of the ether lost credibility and eventually faded from the scientific debate. Then throughout the 20<sup>th</sup> Century astronomical equipment and observations became more detailed and sensitive. Using these new tools astronomers hoped to confirm some of the newer theories of matter and energy proposed earlier in the century. They measured the rotational speed of galaxies to assess their mass content as estimated by the galaxies' visible stars. To their surprise, the observed results did not match the theoretical estimates. The observations suggested that galaxies had more mass than the estimation from visible stars. After multiple experiments confirmed these results, they began to refer to the invisible mass as *dark matter*. Since matter and energy are interrelated ( $E=mc^2$ ), they reasoned that there is also a dark energy in the universe associated with the dark matter. This dark matter is said to be homogeneous and pervasive throughout the universe.

The qualities of dark matter resemble the qualities of the old ether, yet modern scientists

will not use that terminology again.

And here we go in circles. The 19<sup>th</sup> Century scientists labeled the Greek ether a myth but then named their invisible, undetectable space medium the luminous ether. 20<sup>th</sup> Century scientists disproved the existence of the luminous ether but then found their own invisible, undetectable space medium that now they call dark matter.

Human imagination is an amazing thing. Whenever we face unexplainable entities or events we must provide an explanation. If that explanation satisfy our beliefs, we accept it, until proven wrong by future generations who then implement their own beliefs.



### 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, 18.0975, 21.0675,  
28.0675, 50.350, 147.555



### JUNE CONTESTS

13-15 [June VHF](#)  
20 [Kids Day](#)  
27-28 [Field Day](#)

### Editor's Note:

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

[olardeiga@aol.com](mailto:olardeiga@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
<b>WBFM</b>							
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, 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	W4NXL	ROCKLEDGE- WUESTHOFF HOSP.	IRARC	FUSION Repeater replaced with Bridgecom F
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	SCOTSMOOR 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	TSqI;FUSION/WBFM/WIRES-X
444.325	325ME4	+5000	107.2	K4DCS	MELBOURNE-TRINITY TWRS-E	PBARC	
444.375	CNLBRE	+5000	107.2		195 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	TSqI; VOICE/NBEMS
444.650	CNMBRE	+5000	107.2	W4NXL	COCOA-FHP SR520	IRARC	"SARNet Cocoa Repeater"
444.750	750TI4	+5000	156.7/156.7	N4TDX	TITUSVILLE- TGO WATERTOER 230 ft.	NBARC	TSqI
444.875	875MI4	+5000	107.2	KC2UFO	MERRITT IS. COURTNEY SPRS.	K4UJZM	
444.925	925KS4	+5000	131.8/131.8	N1KSC	KENNEDY SP. CTR.-VAB	KSCARC	FM TsqI ; P25 capable
224.120	120CO2	-1600	123.0	AA4CD	COCOA Broadcast Ct.	AA4CD	
<b>DMR</b>							
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
<b>ATV</b>							
427.250	250CO4			K4ATV	COCOA BROADCAST CT.	LISATS	NTSC INPUT 439.25 See www.lisats.org
<b>PACKET STATIONS:</b>							
145.090	W12KPB	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
<b>BREVARD RACES/ARES SIMPLEX</b>							
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
<b>SIMPLEX</b>							
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 user 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							

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TUBE EQUIPMENT

2013 LINE LISTINGS \*\* THE ONLY REAL PARTS STORE LEFT IN SOUTH BREVARD \*\*

AIM  
ALINCO  
ANTENNACRAFT  
ANTENNA SPECIALISTS  
ARRL  
ASTATIC  
ASTI

BEARCAT  
BECKMAN (WAVETEK)  
BUSSMAN FUSES  
BUD

C.B.RADIO  
CALRAD  
CORNELL DUBILIER  
CELLPHONE AMPS  
CHICAGO MINIATURE  
CINCH JONES  
CLOVER  
COBRA  
CUSHCRAFT

DALBANI  
DECIBEL PRODUCTS  
DENNISON  
DURACELL  
DANTONA IND.

ECG (SEE NTE)  
ELECTRONIC RESOURCES  
ELECTROVOICE  
EVEREADY

FANON-INTERCOMS  
FLUKE (WAVETEK)

GC ELECTRONIC  
GALAXY  
GOLDLINE

HAM RADIO  
HARADA  
HITACHI  
HYGAIN

### ICOM RADIO

JSC WIRE  
JW DAVIS SOUND  
JVC PARTS

KENWOOD RADIO  
KOSS  
KESTER

LITTELFUSE  
LOWELL

M & G  
MALLORY  
MACOM  
MAXON  
MIDLAND  
MOTOROLA

NTE TRANSISTORS  
NELLO TOWERS  
NTE ELECTRONICS  
NORMAN LAMPS

PANASONIC  
PANAVISE  
PHILIPS ECG (SEE NTE)  
PHILMORE  
PIONEER  
POMONA  
POWERSONIC  
PRB  
PROAM ANTENNAS

QUAM  
QUEST

RANGER RADIO  
RAYOVAC BATTERIES

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SANYO BATTERIES  
SHURE BROTHERS  
SONY PARTS

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UNIDILLA  
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YAESU

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