



**INDIAN  
RIVER ARC**

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

VOLUME XLI, NUMBER 9

# SPURIOUS EMISSIONS

SEPTEMBER, 2020

## OFFICERS

### **PRESIDENT**

**VIRON PAYNE**

**N4VEP**

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**DAVID LERRET**

**KUOR**

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### **DIRECTOR**

**DAVID SLAWSON**

**K4UZM**

### **NEWSLETTER EDITOR**

**ARMANDO DELGADO**

**KN4JN**

## CLUB MINUTES

The meeting was called to order by President Viron, N4VEP, at 7:15 PM. Some members attended live at the church and some members attended via Zoom.

The first order of business was approval of the minutes of August meeting. These were approved. Next, the Treasurer's Report: Savings account has \$1778.50, checking account, \$759.39 for a total of \$2699.95, adding miscellaneous. The Treasurer's Report was approved for audit.

Technical Committee reported that all repeaters are in working order. Then Dave, KUOR showed slides ( picture in the last page) and described the new emergency radio station at the church, including the antennas, both interior and exterior.

Viron next gave the report on the ARES activity. Participation in the SERT event on September 5 was poor, but the overall test was felt to be a success, yet members are taking part in the NBEMS training on Sundays at 3:00 PM and Tuesdays at 7:00 PM. During the SERT, BEARS had an intermodulation problem with their 147.135 MHz repeater.

The next IRARC meeting will be on October 20 with social starting at 7:00 PM and the meeting at 7:15 PM.

The next item of business was discussion on the club not participating in shelter communications. After a lengthy discussion, it was agreed to send a letter to the EOC management advising them that due to COVID-19 concerns by the club

members, most of whom are at high risk if infected, that IRARC would not man shelters this year, if there is an evacuation.

At the end of this discussion the Zoom meeting terminated due to time limitations imposed by Zoom. It closed at 7:54 PM.

Further discussion at the live meeting centered on the Christmas party. The joint decision was to have the party on December 15 as a potluck dinner at the River of Life Church, the site where the club meets.

Respectfully submitted for the Secretary by

Armando Delgado, KN4JN

## HAPPENINGS

**New Contest for Portable Stations to Debut in October.** A new amateur radio contest for portable operators – the Fox Mike Hotel Portable Operations Challenge (POC) – will debut October 3 – 4. The event is aimed at leveling the competitive playing field between fixed stations and portable stations. Scoring for the POC, based upon a kilometers-per-watt metric, will be handicapped in favor of the portables. Details [here](#).

**FCC New Fees** Amateur radio licensees would pay a \$50 fee for each amateur radio license application if the FCC adopts rules it proposed the last week of August. Included in the FCC's fee proposal are applications for new licenses, renewal and upgrades to existing licenses, and vanity call sign requests. Excluded are applications for administrative

updates, such as changes of address, and annual regulatory fees.

**Jamboree on the Air (JOTA)** and Jamboree on the Internet (JOTI) will be held this year on October 16, 17, and 18. Register online as an individual or as a group. Jamboree on the Air is the largest Scouting event in the world. In a typical year, more than 1 million Scouts participate in

JOTA, with over 11,000 stations operated by 20,000+ young radio amateurs from 150+ countries around the world. JOTA details are available on the [K2BSA website](#).

The [Oceania Contest](#) is in its 75th year! "Once a year in October the global amateur radio community is presented with the opportunity to partake in one of the world's oldest radio

## HAPPENINGS

contests, the Oceania DX contest. First established in 1934 and earlier known as the VK/ZL contest, it is one of the most prestigious on the contesting calendar. Mark the dates in October for both Phone & CW, note the new operating times and join us for an event you will long remember.

PHONE: 0600 UTC Saturday October 3 to 0600 UTC Sunday October 4, 2020.  
CW: 0600 UTC Saturday October 10 to 0600 UTC Sunday October 11, 2020."

The K1USN Radio Club in Massachusetts is launching a new weekly, hour-long, slow-speed contest, the K1USN SST. The inaugural session will be on Monday, September 14, from

0000 – 0100 UTC (Sunday, September 13, in North American time zones). Suggested frequencies are 3.532 – 3.539 on 80 meters; 7.032 – 7.039 MHz on 40 meters, and 14.032 – 14.039 MHz on 20 meters. Stations exchange name and state/province/country.

With a range 20 times longer than the nearest competitor, the Bluetooth beacon from Apptricity can track equipment coming in or going out of building sites. This beacon from Apptricity is the longest-ranging secure connection on the market, with the ability to transmit data up to 32km (20 miles). It is being used in the construction industry.

The [Citrus Belt Amateur Radio Club](#) will sponsor its 21st "Route

66 on the Air" special event September 12 - 20, with 21 stations, each with a 1 × 1 call sign – W6A through W6U – from cities along the highway

To celebrate their club's 50th anniversary, members of the Texas DX Society ([TDXS](#)) will operate K5DX/50 September 14 - October 13 on CW, SSB, and FT8 on 1.8 - 28 MHz.

4U1UN has been active and ready to make contacts on 60 meters (5357 kHz). 4U1UN is running about 35 W on 60 meters on FT8. 4U1UN may also operate CW on 5373 kHz. Activity could start around 2300 UTC. QSL via HB9BOU.

100th anniversary of the establishment of the North American Transcontinental Air Mail Route and its beacon/navigation system. Look for KOA on CW, SSB and FT8. Certificate downloadable from [www.semarc.org](#) after event. [semarc.org](#)

Members of the Royal Air Force Amateur Radio Society will be QRV with special call GB800BOB from September 1 to 28 to commemorate the **Battle of Britain**. QSL via 2EONDZ.

**Jan Mayen Island** JX0X Team planning to be active from Jan Mayen Island, IOTA EU - 022, 15 September - 5 October 2021. Two week operation planned.

**Niue Island** E6AM Team will be active from Niue Island, IOTA OC - 040, 28 September - 17 October 2020. Team - LZ1GC, LZ1PM.

**SOLAR CYCLE 25 HAS BEGUN:** Solar Cycle 25 is officially underway. NASA and NOAA made the announcement during a media teleconference earlier today. According to an international panel of experts, sunspot counts hit rock bottom in Dec. 2019, and have been slowly increasing since. What can you expect in the months ahead? Visit [Spaceweather.com](#) for answers

[Noise.sh](#) is a cloud-based "digital signal processing spreadsheet for sound design." It features concepts of time, beat, generators, samples, and so forth, but in a spreadsheet format

**Chad** TT8RR and TT8XX Team will be active from Chad, 29 September - 12 October 2020.

Team - I1HJT, I1FQH, I2PJA, I2YSB, IK2C10, IK2CKR, IK2DIA, IK2HKT, IK2RZP, JA3USA. TT8RR call will be used in CW, SSB, RTTY.

**Easter Island** XROYSF Team will be active from Easter Island, IOTA SA - 001, 15 - 30 September 2020.

Team - SP3CYY, SP3GEM, SP6EQZ, SP6IXF, SP9FOW, SP9RCL. They will operate on 160 - 10m, CW, SSB, FT8.

**Tonga** A35GC Team will be active from Tonga, 19 October - 2 November 2020. Team - LZ1GC, LZ1PM. They will operate on 160 - 10m.

## ON THE AIR

**Dog Island IOTA DXpedition** NA-085 K4D Sep 9-Sep 18, 0000Z-2359Z, K4D, Carrabelle, FL. K5TEN (Operator). 14.275 14.074 7.190 7.074. QSL. Bruce Brady K5TEN, 208 Mt Tabor Rd, Hot Springs National Park, AR 71913. Very rare IOTA island, rare grid square & rare county. (NA-085), EL79, Franklin County. Rescheduled from June due to Covid19. k5ten@aol.com.

**K4MIA - National POW MIA Recognition Day** Sep 12-Sep 22, 0000Z-2359Z, K4MIA, Loxahatchee, FL. PBSE. 28.400 18.150 14.265 7.195. QSL. Michael Bald, 6758 Hall Blvd., Loxahatchee, FL 33470. Observances of National POW MIA Recognition Day are held across this country on the third Friday in September each year.

**Route 66 On the Air** Sep 12-Sep 20, 0000Z-2359Z, W6H, Rio Rancho, NM. Albuquerque DX Association. 14.266 14.033 7.266 7.033. Certificate & QSL. Bill

Mader, 4701 Sombrerete Rd SE, Rio Rancho, NM 87124. Use [http://w6ibt.org](#) for certificates plus frequencies and other information. Use QRZ.com for QSL information. Get your kicks on Route 66! [https://groups.io/g/adxa](#)

**Wisconsin Parks On The Air** Sep 19, 1100Z-2300Z, W9ZL, Appleton, WI. Fox Cities Amateur Radio Club. 21.350 14.260 7.220 3.850. Certificate. Kenneth Ross, P.O. Box 2346, Appleton, WI 54912. The Fox Cities Amateur Radio Club (FCARC) is pleased to support the Wisconsin Parks on the Air (WIPOTA) operating contest. This contest is to promote public awareness of ham radio within Wisconsin's beautiful state park system. [wipota.com](#)

**US Airmail Beacon System** Sep 26, 1200Z-2300Z, KOA, Inver Grove Heights, MN. South Metro Amateur Radio Club. 14.250 7.074 7.040. Certificate. Downloadable; see, website.

## STEVE

The enigmatic atmospheric phenomenon, explained (sort of)

By Joel Williams

"I propose we call it Steve," said photographer Chris Ratzlaff in a 2016 post in a Facebook group for aurora chasers.

Ratzlaff was referring to an atmospheric optical phenomenon that appears as reddish and green light in the sky. The name "Steve" is a nod to the 2006 animated film "Over the Hedge," in which its characters chose "Steve" as a benign name for something unknown. During a December 2016 meeting of the American Geophysical Union (AGU), the name was given a backronym - "Strong Thermal Emission Velocity Enhancement" (STEVE) - which has since been adopted by NASA as the phenomenon's official name.

To the untrained eye (and even the trained one), STEVE resembles an aurora. It appears as a long, glowing reddish ribbon with a green picket-fence pattern.

Ratzlaff's 2016 Facebook post linked to a Weather.com article that highlighted the luminous enigma. The prevailing theory at the time was that STEVE was a proton aurora; however, as University of Calgary physics professor Eric Donovan noted in a 2017 BBC article, proton auroras are not visible.

In 2017, the European Space Agency (ESA) took measurements of STEVE using data from its SWARM mission. The ESA determined that STEVE was located 300 km above the surface of Earth and that the temperature of the air within the phenomenon was 3000 DC hotter than the air outside of it. Inside, the 25-km-wide ribbon of gas flowed at 6 km/s. The study dubbed STEVE a type of "skyglow," but did not go much further than that.

A more recent study uncovered additional information, though the phenomenon is still not fully understood. Research published in April 2019 in ADU's Geophysical Research Letters analyzed satellite data and ground images of STEVE events and concluded that the

reddish arc and the green picket fence are phenomena caused by different mechanisms.

The reddish streaks are caused by heating of charged particles higher up in the atmosphere, similar to how a light bulb works. When STEVE is on display, energetic electrons pour into Earth's ionosphere, the layer of the atmosphere where atoms lose electrons due to solar and cosmic radiation. The friction heats particles, which creates a reddish glow.

Satellite information explained how the picket-fence effect occurs. The data showed that waves moving from Earth's magnetosphere to the ionosphere both energized electrons and moved them out of the magnetosphere, creating a green picket-fence-patterned glow.

Researchers said the new information will help them learn how to predict the paths of particles flowing through the ionosphere, which, like STEVE, is something they'd like to understand better.



STEVE, photographed on Aug. 17, 2015, at Little Bow Resort in Lomond, Alberta, Canada.

Joel Williams  
joel.williams@photonics.com

Article from Photonics Spectra, February, 2020

## Latest 10 Most Wanted Amateur Entities

1. P5 DPRK (North Korea)
2. 3Y/B Bouvet Island
3. FT5/W Crozet Island
4. BS7H Scarborough Reef
5. CEOX San Felix Islands
6. BV9P Pratas Island
7. KH7K Kure Island
8. KH3 Johnston Island
9. 3Y/P Peter 1 Island
10. FT5/X Kerguelen Island



## 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



## Editor's Note:

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

Dave, KUOR station at  
The River of Life Church

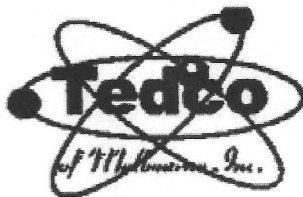
[olardelga@aol.com](mailto:olardelga@aol.com).



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
<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 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	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	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	W4NXL	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.	K4UJZM	
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	
<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	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
<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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BEARCAT  
BECKMAN (WAVETEK)  
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BUD

C.B.RADIO  
CALRAD  
CORNELL DUBILIER  
CELLPHONE AMPS  
CHICAGO MINIATURE  
CINCH JONES  
CLOVER  
COBRA  
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ELECTRONIC RESOURCES  
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EVEREADY

FANON-INTERCOMS  
FLUKE (WAVETEK)

GC ELECTRONIC  
GALAXY  
GOLDLINE

HAM RADIO  
HARADA  
HITACHI  
HYGAIN

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JW DAVIS SOUND  
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KOSS  
KESTER

LITTELFUSE  
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MALLORY  
MACOM  
MAXON  
MIDLAND  
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NTE TRANSISTORS  
NELLO TOWERS  
NTE ELECTRONICS  
NORMAN LAMPS

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PANAVISE  
PHILIPS ECG (SEE NTE)  
PHILMORE  
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PRB  
PROAM ANTENNAS

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