



# Ham Radio

in the 21st Century



We Do That!  
...with Amateur Radio





W4RSC "RADIO SILVER COMET"
ARRL SPECIAL SERVICE CLUB

## SILVERCOMET SKYWAVE

Silver Comet ARS, INC NEWS
PO BOX 1873 Hiram Ga. 30141 501 (C) (3) Not for Profit
DEC 2020 Vol 7 Number 12

## The December Club Meeting Will Be Held On the 146.955 Repeater & Zoom!



Please join us on the 146.955 (- 77Hz) repeater at 7pm on December 1st for our monthly club meeting. A Zoom video meeting will be held simultaneously. Check the SCARS Groups.IO calendar for meeting and link information.

The Silver Comet ARS Board of Directors has cancelled physical meeting gatherings at the Chamber building until further notice.

### In This Issue

- The Prez Sez
- The Usual Stuff
- \$\$\$ Dues \$\$\$
- It's over! AM DX Contest
- New Hams Welcome
- Dues. It's almost time.
- Arecibo to be demolished
- What is all that about?
- Know your connectors?
- Band Characteristics
- DV Repeater Growth
- SSTV vs ATV
- Interesting Links
- Breakfast Info
- Home Brew Corner
- Bird Feeder Antenna
- Special Events & contests
- Club VE Schedule
- Club Calendar

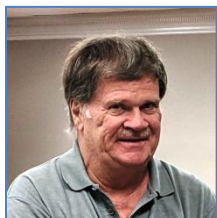
## W4RSC "Radio Silver Comet"

The Silver Comet ARS Inc. a 501 (c) (3) Not for Profit Organization





## **Prez Sez!**



I recently saw a person wearing a shirt that said "I SURVIVED 2020". This has been a most interesting year. We got to witness the medical climate of COVID-19... something that we haven't seen since the Polio outbreaks of 1916 and the 1950's. And of course there was the Politics... Nothing like this since the Election of 1824... WOW!

But, through all of this, radio has survived!!! Most of us made good use of our radios. Both HF and other things. Our nets (both RF and Zoom) have been well used and well received. Our various VE teams have also been busy bringing new Hams into the hobby. So 2020 was not a complete bust... we did like most hams and made do.

Now that we are in our last month of this year, hopefully 2021 will look a little better. With a possibility of a new vaccine, we should start to see face to face meetings and activities AGAIN... YEAH!!!

There are several 'things' in the works for 2021, so stay tuned. I want to remind everyone that 2021 dues are due soon. We need to keep our club strong with membership and support.

We have a new President... Dan Ozment. Let's show him the help and support that I have enjoyed for the past three years.

John Reynolds - President (at least for 28 more days)  
The Silver Comet Amateur Radio Society

## **Editor's Notes:**



Copies of past SKYWAVE newsletters can be found at the club website <http://www.silvercometars.com/newsletter.php>. Please submit your member bios and articles prior to the 25<sup>th</sup> of the month.

*Chuck DuVall, K4CGA – Editor*

## **SCARS Community Food Drive!**



COVID-19 has resulted in an unusually high demand for food products from our local Metro food banks.

Your donations will be greatly appreciated by the recipients and you will feel better. PLEASE HELP ! It all adds up.

## **Monday – “SCARS Night Out” Net!**



Radio and Zoom check-ins begin at 7:30PM. It's fun and informative. On the 1<sup>st</sup> Monday of each month, a new technical subject will be introduced for discussion. Suggestions for Topics of Discussion are always solicited. You don't have to dress up because it's very informal and Troy K4JDA does a great job as the moderator.

Please join us on the 146.955 (- 77Hz) repeater at 7:30pm and on Zoom. Check the SCARS Groups.IO calendar for meeting and Zoom link information.

**SCARS Website:**     <http://www.silvercometars.com/index.php>

Send SCARS website corrections, comments, or suggestions to Troy (K4JDA) at [troy.davis@hotmail.com](mailto:troy.davis@hotmail.com)



## **It's Almost That Time Again!**

We are fast approaching the New Year and you may want to consider paying your 2021 dues.

Due to the pandemic and the cancellation of our social meetings, please consider using the club Pay-Pal online service to pay your dues <http://www.silvercometars.com/contact.php#Dues> or mail your check to:

Dave Fuller K4DMF  
Silver Comet ARS  
1124 Regiment Drive  
Acworth, GA 30101



**2021 Dues  
Still Only**



For Credit Card payment, contact Dave K4DMF for instructions: [davenesf@comcast.net](mailto:davenesf@comcast.net)

## **It's Over! And The Winner IS.....**



The SCARS 6<sup>th</sup> Annual AM Broadcast Band DX Contest is over. We have a winner. John Reynolds, W4TXA has done it again. Congratulations. John was the only club member to turn in a log this year. Even though I participated some, John beat me. It was a rather disappointing turn out considering the “stay at home” opportunities and 30 days to participate.

## **New Amateurs – Welcome**

Our V.E.'s have been busy this year, even though we are in pandemic status. They have also recruited many new members for our club so be sure to thank them.

If you hear a new call on the repeater, or see a new face on Zoom, be sure and say hello and introduce yourself. We all were there at one time or another.

To our new amateurs and new members, our club has a wealth of knowledge and experience in ham radio and we are always willing to answer questions and help out with your radio projects. Welcome aboard and have lots of fun. – **Chuck K4CGA Editor**



# **Arecibo Observatory In P.R. To Be Demolished**

The **Arecibo Observatory** is an observatory in Arecibo, Puerto Rico, also known as the **National Astronomy and Ionosphere Center (NAIC)**. It is owned by the



US National Science Foundation (NSF). The main instrument of the observatory is a 305m (1,000ft) spherical reflector dish built into a natural sinkhole. There's also a cable-mount steerable receiver mounted 150m (492ft) above the dish, and several radar transmitters for emitting signals. For more than 50 years, the Arecibo Observatory 305m

telescope was the world's largest single-aperture telescope, surpassed in July 2016 by the Five-hundred-meter Aperture Spherical Telescope (FAST) in China.

Arecibo was primarily used for research in radio astronomy, atmospheric science, and radar astronomy, as well as for programs that search for extraterrestrial intelligence (SETI). Scientists wanting to use the observatory submitted proposals that were evaluated by independent scientific referees. The observatory, funded primarily by the National Science Foundation (NSF) with partial support from NASA for its near-Earth object detection programs, was managed by Cornell University from its completion in 1963 until 2011, after which it was transferred to a partnership led by SRI International. In 2018, a consortium led by the University of Central Florida assumed operation of the facility.

Two cable breaks, one in August 2020 and a second in November 2020, threatened the structural integrity of the support structure for the suspended platform and damaged the dish. Due to uncertainty over the remaining strength of the other cables supporting the suspended structure, and the risk of collapse due to further failures making repairs dangerous, the NSF announced on November 19, 2020, that it would decommission and dismantle the telescope, with the LIDAR facility remaining operational - [Wikipedia](#)



## **What Is All That About?**

**A new feature by Lee WB4QOJ**

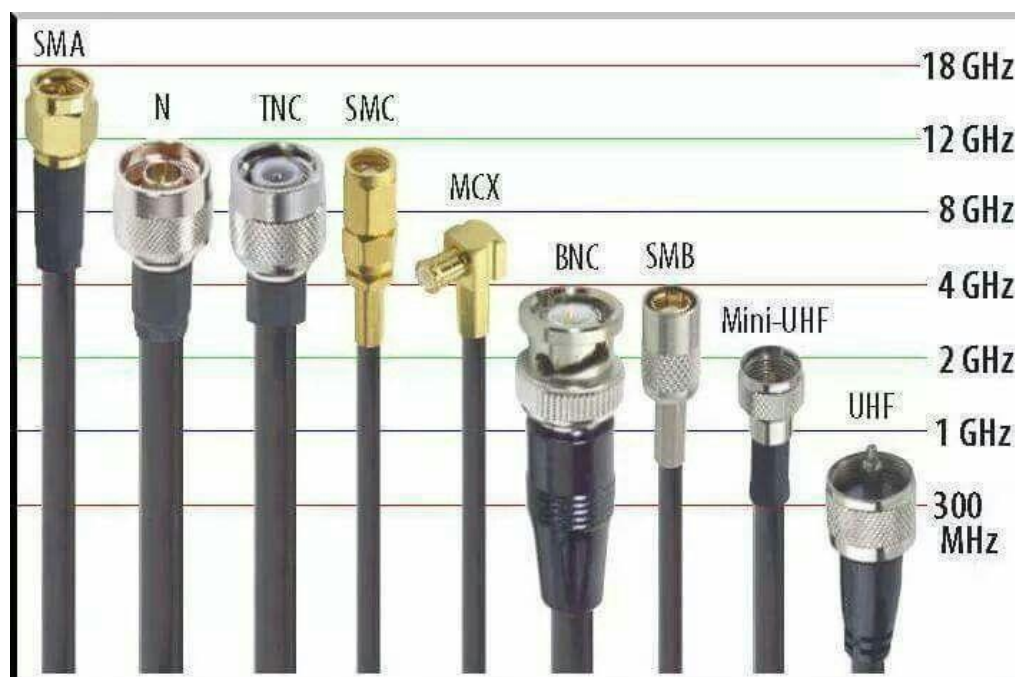
As we move into a new year, we all hope that 2021 lets us put 2020 in the rear view mirror and see great things happen to get our lives back to normal. In saying that, we have had a lot of time to think about our great hobby and maybe have questions. Troy K4JDA does a Fantastic Job on the Monday Night Net to highlight questions that you may have and get answers.

What I want to do in this column that Chuck K4CGA has asked me to do is hit on some explanation of things that I have expertise in. During the first half of 2021, I will try, and in plain language, to show how a Repeater works and all aspects to 146.955/443.475.

I will also explain in depth the WB4QOJ BPQ32 Network Switch that has the DX Cluster Node for DX Spotting and how it supports our Silver Comet Contest Group. Then I will attempt (this is a big one) to explain the VAST world of SDR Software Defined Radio. Hardware/Software and what you can do with an SDR standalone receiver.

That's a big list and should get us through half a year. Of course after seeing the Newsletter, if you have any questions PLEASE ASK. We have a lot of talented mentors in our club, so please take advantage of all that expertise.

## **Know Your Connectors!**



# **VHF/UHF BAND CHARACTERISTICS**

## **VHF \* 50-54 MHz (6 Meters)**

Also known as “The Magic Band”. Good ground wave coverage up to several hundred miles on SSB. Able to obtain 1200 miles or more on openings such as Sporadic-E, F2 layer skip, meteor scatter, aurora, inversions and some EME (Earth Moon Earth). Operators have worked the world with fairly modest stations. You might even find some FM repeater activity.

## **VHF \* 144-148 MHz (2 Meters)**

The most popular VHF band. Generally shorter ground wave distances of around 200 miles can be expected on this band with a modest SSB or CW signal. Good mobile FM band with lots of local FM or Digital communications on repeaters. Coverage distance is dependent on power output, antenna design and topography. Some repeaters are linked together for even greater coverage. There is also lots of satellite activity, EME and terrestrial DX for hams doing weak signal work (QRP). You can expect many of the same kinds of openings on 2 meters as you will experience on 6 meters.

## **VHF \* 220-225 MHz ( 1 ¼ Meters)**

The 220 MHz band is a portion of the VHF radio spectrum internationally allocated for amateur radio use on a primary basis in ITU Region 2. It comprises frequencies from 220 MHz to 225 MHz in the United States and Canada. The license privileges of U.S. amateur radio operators include the use of frequencies within this band, which is primarily used for local communications. There are not as many repeaters or as much activity as 2 meters and there is no satellite activity. This band is not available in many countries other than the United States.

## **UHF \* 420-450 MHz (70 cm)**

The most popular UHF band. SSB and CW ground wave coverage is quite limited compared to 2 meters due to the high RF absorption factor. This is a popular alternative to the 2 meter band for FM or Digital mobile and repeater operation (440-450 MHz). Coverage distance is dependent on power output, antenna design and topography. Some repeaters are linked together with 2 meter repeaters for even greater coverage. Satellite, EME, Fast Scan TV and Terrestrial DXing are also popular on this band in the 420-440 MHz range.

## **UHF \* 902 – 928 MHz (33 cm)**

Not much activity on this band so far due to a lack of suitable equipment manufactured specifically for amateur use. Most equipment is converted commercial equipment. Coverage distance is dependent on power output, antenna design and topography. Also this is a shared band with other services. Mainly for use with repeaters.

# **VHF/UHF BAND CHARACTERISTICS** (continued)

## **UHF \* 1200-1300 MHz (23 cm)**

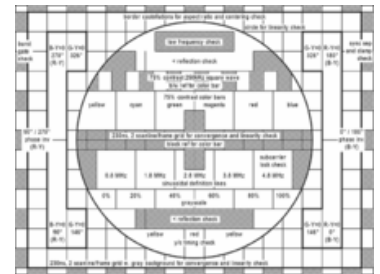
1.2 GHz is a HUGE band with lots of room for experimenters. EME and satellite are popular up here and in some parts of the US there are very active FM repeaters. Antennas are VERY small! Not a lot of terrestrial DXing but during contests there is some activity. Antennas for small signal work are quite impressive with lots of elements on short booms. Dishes are practical on this band.

For more information: [https://en.wikipedia.org/wiki/Amateur\\_radio\\_frequency\\_allocations](https://en.wikipedia.org/wiki/Amateur_radio_frequency_allocations)

## **What Is The Difference Between SSTV And ATV?**

**Slow Scan television (SSTV)** is a picture transmission method used mainly by amateur radio operators, to transmit and receive still pictures via radio in monochrome or color.

A literal term for SSTV is narrowband television. Analog broadcast television requires at least 6 MHz wide channels, because it transmits 25 or 30 picture frames per second, but SSTV usually only takes up to a maximum of 3 kHz of bandwidth. It is a much slower method of still picture transmission, usually taking from about eight seconds to a couple of minutes, depending on the mode used, to transmit one image frame.



Since SSTV systems operate on voice frequencies, amateur radio operators use it on HF, VHF and UHF radio.

**Amateur Television (ATV) or Fast-Scan TV (FSTV)**, is the transmission of broadcast quality video and audio over the wide range of frequencies of radio waves allocated for amateur radio (Ham) use. ATV operation requires the ability to use a 6 MHz wide channel, so ATV operation is confined to **UHF** and up. ATV is used for non-commercial experimentation, pleasure, and public service events. Ham TV stations were on the air in many cities before commercial television stations came on the air.

Various transmission standards are used. These include **NTSC** in North America and Japan, and **PAL** or **SECAM** elsewhere. ATV is an extension of amateur radio. It is also called HAM TV or Fast-Scan TV (FSTV), as opposed to Slow-Scan television (SSTV).

For more information: [https://en.wikipedia.org/wiki/Amateur\\_television](https://en.wikipedia.org/wiki/Amateur_television)



## **Interesting Links to visit!**

**Airspy Black Friday 2020 #announcements**

<https://airspy.com/purchase>

**New release of MULTIPSK (4.44)**

[http://f6cte.free.fr/index\\_anglais.htm](http://f6cte.free.fr/index_anglais.htm)

**New! fldigi 4.1.16.02**

<http://www.w1hkj.com/alpha/fldigi>

**ARRL Clubs - SILVER COMET AMATEUR RADIO SOCIETY, INC.**

<http://www.arrl.org/Groups/view/silver-comet-amateur-radio-society-inc>

**Silver Comet ARS YouTube Channel**

[https://www.youtube.com/channel/UCaL7UG0gkRJxV7lnTj\\_P3IQ/videos](https://www.youtube.com/channel/UCaL7UG0gkRJxV7lnTj_P3IQ/videos)

**Silver Comet ARS Website**

<http://www.silvercometars.com/index.php>

**Silver Comet ARS – ARRL Clubs**

<http://www.arrl.org/Groups/view/silver-comet-amateur-radio-society-inc/type:club>

**Silvercometars@groups.io|HOME**

<https://groups.io/g/silvercometars>

**Decoding Digital RF transmissions from across the spectrum**

<http://www.kd0cq.com/2013/07/sorcerer-decoder-download/>

**New way to surf the internet – Browser guide**

<https://www.browserguides.net/brave-or-chrome/?>



**Christmas Ham**



## **Breakfast @.....**

Join us on the 146.955 repeater and on "ZOOM" on Thursdays @ 8:30am. In person gatherings are cancelled until further notice due to Covid-19 safety concerns! For "ZOOM" information, check the SCARS Groups.IO calendar.

Bring your own coffee and doughnuts or biscuits and gravy. No sharing allowed.



**Come Join Us!**

**Thursday Mornings  
We Gather Around 8:30 +/-  
Until the last one leaves!  
Even on the Repeater or ZOOM!**



**Not Before**



**Coffee**

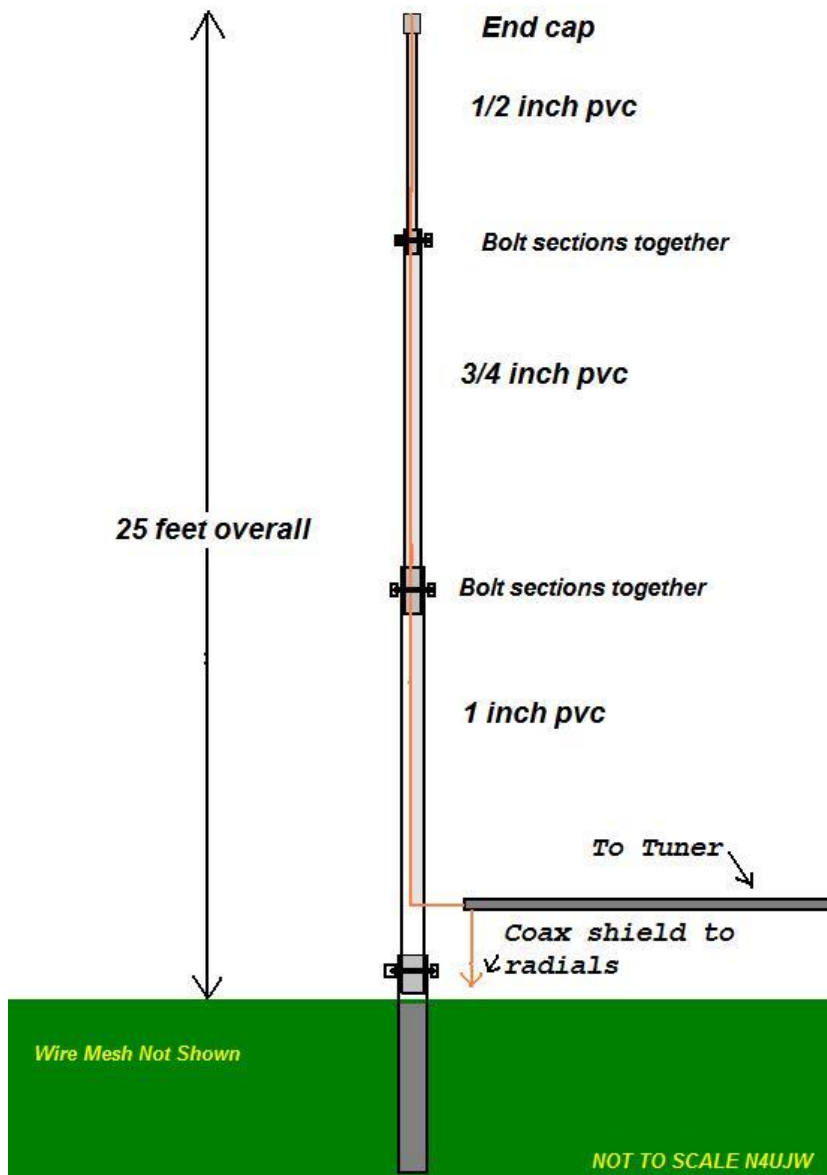
## **Upcoming Special Events**

Please look for K4ELI's weekly email notices regarding contest and special events on the SCARS Group.io reflector or visit the ARRL website at:

[http://www.arrl.org/special\\_events/search/page:2/Date.start:2016-09-14/Date.end:2016-12-31/model:Event](http://www.arrl.org/special_events/search/page:2/Date.start:2016-09-14/Date.end:2016-12-31/model:Event)

# Home Brew Corner!

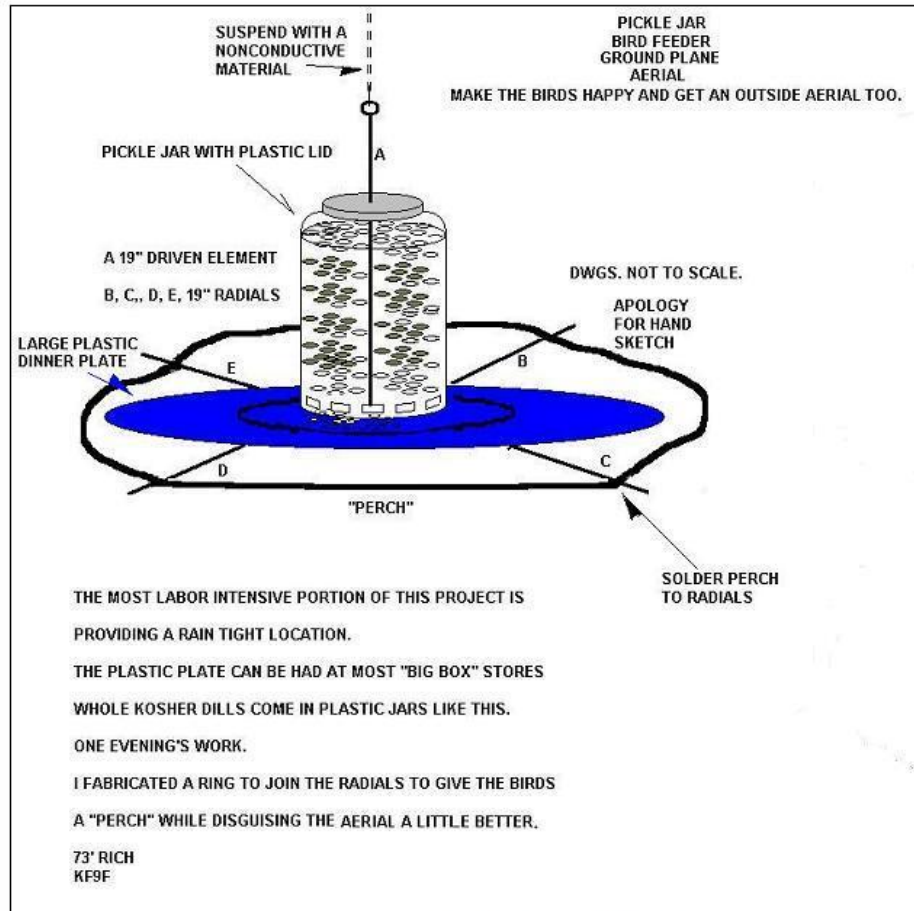
A \$6.87 25 Foot 5 Band Vertical by N5VEG  
HF FOR A HAMBURGER AND FRIES



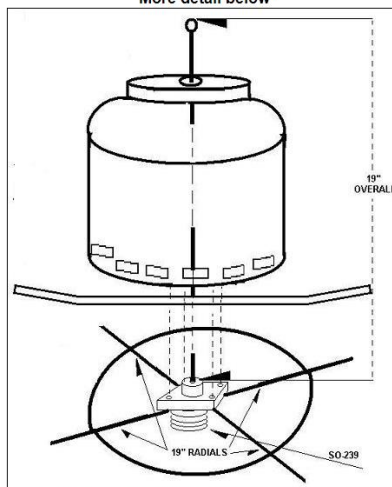
For constructions details, go to: <http://www.hamuniverse.com/n5vegvertical.html>

# Bird Feeder Stealth 2m Antenna

Got some hungry birds that don't mind a bit of rf in their diet?  
Then build this simple and easy bird feeder from a pickle jar  
for 2 meter stealth operation outdoors!



Tune as needed for lowest SWR  
More detail below



For more  
construction  
information:  
<http://www.hamuniverse.com/2meterstealthbirdfeeder.html>

Designed by KF9F

When you are done, fill with your favorite bird seed and....

Don't forget to eat all of the pickles first!

You may not want any pickles for a while but the birds and your neighbors will love you for it!

Editor's note:

Use only all plastic jar and lid...no metal!

Rectangular slots at bottom of jar for seed delivery to the birds.

Keep a fresh supply for them at all times.



# Contest & Special Events

2020 ARRL Contest Dates (2021 calendar not yet published)

<b>January 2020</b> 1 <a href="#">Straight Key Night</a> 4 <a href="#">Kids Day</a> 4-5 <a href="#">RTTY Roundup</a> 18-20 <a href="#">January VHF</a>	<b>February 2020</b> 10-14 <a href="#">School Club Roundup</a> 15-16 <a href="#">International DX – CW</a>
<b>March 2020</b> 7-8 <a href="#">International DX- Phone</a>	<b>April 2020</b> 19 <a href="#">Rookie Roundup – Phone</a>
<b>June 2020</b> 13-15 <a href="#">June VHF</a> 20 <a href="#">Kids Day</a> 27-28 <a href="#">Field Day</a>	<b>July 2020</b> 11-12 <a href="#">IARU HF World Championship</a>
<b>August 2020</b> 1-2 <a href="#">222 MHz and Up Distance Contest</a> 15-16 <a href="#">10 GHz &amp; Up – Round 1</a> 16 <a href="#">Rookie Roundup – RTTY</a>	<b>September 2020</b> 12-14 <a href="#">September VHF</a> 19-20 <a href="#">10 GHz &amp; Up - Round 2</a> 12-13 <a href="#">EME - 2.3 GHz &amp; Up</a>
<b>October 2020</b> 19-23 <a href="#">School Club Roundup</a> 10-11 <a href="#">EME - 50 to 1296 MHz</a> -	<b>November 2020</b> 7-9 <a href="#">Nov. Sweepstakes – CW</a> 21-23 <a href="#">Nov. Sweepstakes – Phone</a> 28-29 <a href="#">EME - 50 to 1296 MHz</a>
<b>December 2020</b> 4-6 <a href="#">160 Meter</a> 12-13 <a href="#">10 Meter</a> 20 <a href="#">Rookie Roundup-CW</a>	

## ***Additional Contest Calendars***

<http://www.contestcalendar.com//index.html>

[http://www.cq-amateur-radio.com/cq\\_contests/cq\\_annual\\_contest\\_calendar/cq\\_annual\\_contest\\_calendar.html](http://www.cq-amateur-radio.com/cq_contests/cq_annual_contest_calendar/cq_annual_contest_calendar.html)

<http://ncjwecom/>

# **SCARS Amateur Radio Licensing Schedule.**

## **SCARS/BHBC Test Session (aka East)**

K4ELI and the VE Team will be testing at 7pm at Burnt Hickory Baptist Church,  
5145 Due West Road, Powder Springs, on the following dates.

**No walk-ins. Register or call ahead.** See sign at Front Desk for Room #.

### **2020/2021 Schedule**

**The Governor's directives in effect at that time will be adhered to.**

Dec 03 \* Jan 07 \* Feb 04 \* Mar 04 \* Apr 01 \* May 06 \* Jun 03  
Jul 01 \* Aug 05 \* Sep 02 \* Oct 07 \* Nov 04 \* Dec 02

For more information, contact Steve Walls, K4ELI: [swalls46@att.net](mailto:swalls46@att.net) (404)697-9840

**All classes of license exams will be available.**

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## **SCARS/Paulding CoC Test Session (aka West)**

W4TXA and the VE Team will be testing at 6:30pm on the following dates.

**Contact John W4TXA [w4txa.john@gmail.com](mailto:w4txa.john@gmail.com) for test session location and information.**

### **2020/2021 Schedule**

**The Governor's directives in effect at that time will be adhered to.**

Dec 08 \* Jan 12 \* Feb 09 \* Mar 09 \* Apr 13 \* May 11 \* Jun 08  
Jul 13 \* Aug 10 \* Sep 14 \* Oct 12 \* Nov 09 \* Dec 14

For more information, contact John Reynolds, W4TXA: [w4txa.john@gmail.com](mailto:w4txa.john@gmail.com)

**All classes of license exams will be available.**

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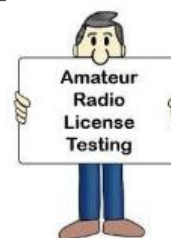
### **BRING:**

- Original and copy of existing license.
- Copy of FRN # if you have a GMRS license or some other license.
- \$15 cash----exact change
- Photo ID

**See the following web sites for more details:**

**SCARS** [http://www.silvercometars.com/about.php#TEST\\_SESSION](http://www.silvercometars.com/about.php#TEST_SESSION)

**ARRL** <http://www.arrl.org/licensing-education-training>



*Silver Comet Amateur Radio Society*  
2020 Calendar

**\*\* Don't forget our club breakfast every Thursday morning around 8:30am \*\***

	<i>July</i>	<i>August</i>	<i>September</i>	<i>October</i>	<i>November</i>	<i>December</i>
<b>Meeting 1st Tuesday Date/Time:</b>	<b>07-07-2020 7:30pm</b>	<b>08-04-2020 7pm</b>	<b>09-01-2020 7pm</b>	<b>10-06-2020 7pm</b>	<b>11-03-2020 7pm</b>	<b>12-01-2020 7pm</b>
<b>Meeting Location</b>	<b>"On The Air" 146.955– 77Hz &amp; "Zoom"</b>	<b>"On The Air" 146.955– 77Hz &amp; "Zoom"</b>	<b>"On The Air" 146.955– 77Hz &amp; "Zoom"</b>	<b>"On The Air" 146.955– 77Hz &amp; "Zoom"</b>	<b>"On The Air" 146.955– 77Hz &amp; "Zoom"</b>	<b>"On The Air" 146.955– 77Hz &amp; "Zoom"</b>
<b>Meeting Activity</b>						<b>Vertical &amp; Wire antennas (N4XL)</b>
<b>Additional Activities</b>	<b>Cancelled</b>	<b>Cancelled</b>	<b>Cancelled</b>	<b>Cancelled</b>	<b>Cancelled</b>	<b>Cancelled</b>
<b>Hamfest &amp; Conventions</b>	<b>Cancelled</b>	<b>Cancelled</b>	<b>Cancelled</b>	<b>Cancelled</b>	<b>Cancelled</b>	<b>Cancelled</b>
This calendar is "Subject to change". Submit change request to K4ELI Steve						
V2020.10						

*Silver Comet Amateur Radio Society*  
2021 Calendar

**\*\* Don't forget our club breakfast every Thursday morning around 8:30am \*\***

	<i>January</i>	<i>February</i>	<i>March</i>	<i>April</i>	<i>May</i>	<i>June</i>
<b>Meeting 1st Tuesday Date/Time:</b>	<b>01-05-2021 7pm</b>	<b>02-02-2021 7pm</b>	<b>03-02-2021 7pm</b>	<b>04-06-2021 7pm</b>	<b>05-04-2021 7pm</b>	<b>06-01-2021 7pm</b>
<b>Meeting Location</b>	<b>“On The Air” 146.955– 77Hz &amp; “Zoom”</b>	<b>“On The Air” 146.955– 77Hz &amp; “Zoom”</b>	<b>“On The Air” 146.955– 77Hz &amp; “Zoom”</b>	<b>“On The Air” 146.955– 77Hz &amp; “Zoom”</b>	<b>“On The Air” 146.955– 77Hz &amp; “Zoom”</b>	<b>“On The Air” 146.955– 77Hz &amp; “Zoom”</b>
<b>Meeting Activity</b>	<b>Contest Station (K3UR) Owner DX Engr.</b>	<b>Toroids &amp; Baluns (N4XL)</b>	<b>Which Ant. Is Best (K4ELI)</b>	<b>Weather (K4DMF)</b>	<b>SO2R Basics ((K4ELI)</b>	<b>Field Day Prep (FD Team)</b>
<b>Additional Activities</b>	TBD	TBD	TBD	GA QSOP	TBD	Field Day
<b>Hamfest &amp; Conventions</b>	<b>TBD</b> Lawrenceville TechFest	<b>TBD</b> Dalton, GA Orlando, FL (HamCation)	<b>TBD</b> Birmingham Ellijay, GA	<b>TBD</b> Mobile, AL Calhoun, GA	<b>TBD</b> Dayton, OH	<b>TBD</b> Atlanta, GA
This calendar is "Subject to change". Submit change request to K4ELI Steve						
V2021.00						

# W4RSC



Paulding County, GA - EM73 - ITU Zone: 8

Silver Comet Amateur Radio Society, Inc.  
PO Box 1873  
Hiram, GA 30141



[www.silvercometars.com](http://www.silvercometars.com)



STATION	Confirming QSO				Pse QSL <input type="checkbox"/> Tnx QSL <input type="checkbox"/>		
	DAY	MONTH	YEAR	UTC	MHz	RST	MODE

## SILVER COMET AMATEUR RADIO SOCIETY, INC.

CONTACT US:

Groups.io Request:

[SilvercometARS@groups.io](mailto:SilvercometARS@groups.io)

Repeater:

146.955 (-) (77hz)

Contact: Club President  
John Reynolds, W4TXA

Email:

[w4txa.john@gmail.com](mailto:w4txa.john@gmail.com)

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SILVERCOMET ARS, INC.  
PO BOX 1873  
HIRAM, GEORGIA 30141