

SCCARA-GRAM



Santa Clara County Amateur Radio Association

Volume 35, Number 6

June 2019



Field Day

SCCARA will participate in Field Day 2019 from our club station at the San Jose Red Cross (see the map below). Save the date: Saturday and Sunday June 22 and 23. Everyone is invited, visitors are welcome.

We'll have a HF CW/Digital station, a HF Phone station, and a GOTA station. We *may* have a 2 m FM simplex station. The CW/Digital station will most likely be our regular club station in the radio room, off of room 15 (the "Santa Clara" room, that's where our board meetings are held). The GOTA station will probably be set up on the patio just outside the break room.

The club will provide a BBQ lunch mid-day Saturday. Dinner Saturday night will be both club provided and potluck. All other meals will be potluck or bring your own. There is a refrigerator and stove in the break room, and we'll have a charcoal BBQ on the patio on Saturday. If you put anything in the refrigerator, label it "SCCARA" for potluck or your name if it's just for you.

There could be an issue with the Red Cross front door being locked during the weekend. We'll monitor our 2 m repeater or you can go around to the back patio, there should be someone out there with the GOTA station. The main entrance is on the North side of the building facing Plumeria, the patio is on the South side.

The hours we will be active is undecided as of this writing. Field Day itself runs from 1800 UTC (11 AM PDT) Saturday through 2100 UTC (2 PM PDT) Sunday.

See <http://www.arrl.org/field-day> for lots of details about the Field Day contest.

The details of our Field Day activity should be finalized by the general meeting on Monday, June 10. Join us then!

ARRL News

From *The ARRL Letter*, May 2, 2019

Science and Technology: An Ultra-Small Transmitter for VLF

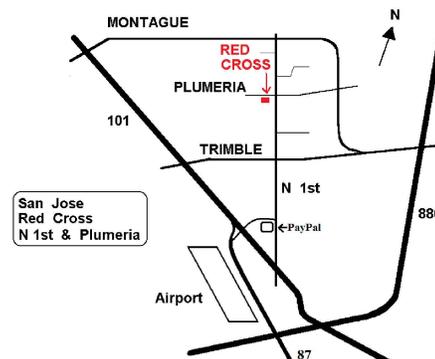
A study, "A high Q piezoelectric resonator as a portable VLF transmitter," by Stanford University SLAC National Accelerator Laboratory researcher Mark A. Kemp et al., in the April 12, 2019, edition of *Nature Communications* describes using a small rod of lithium niobate and taking advantage of the material's piezoelectric

Calendar

- 6/8 Electronic Flea Market
- 6/10 SCCARA General Meeting
- 6/17 SCCARA Board Meeting--(San Jose Red Cross, 7:30p, all are welcome)
- 6/22-23 Field Day – We'll be at San Jose Red Cross

General Meeting

- Day: Monday, June 10, 2019
- Time: 7:30 PM
- Place: Kaiser Santa Clara, Hospital B-06
- Featuring: SCCARA's Field Day event



The **SCCARA-GRAM** is published monthly by the **SANTA CLARA COUNTY AMATEUR RADIO ASSOCIATION**, PO Box 106, San Jose CA 95103-0106.

SCCARA was formed in 1921 and became a non-profit corporation in 1947. SCCARA is an affiliate of the American Radio Relay League (ARRL). The club station is W6UW.

Permission to reprint articles is hereby granted, provided the source is properly credited.

The deadline for articles is the **last Monday of the month.**

Web page: www.qsl.net/sccara

club email: w6uw@arrl.net or w6uw@sbcglobal.net

BOARD OF DIRECTORS

(officers are also directors)

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SCCARA REPEATERS

SCCARA owns and operates two repeaters under the call W6UU:
2 meter: 146.985 - PL 114.8
70 cm: 442.425 + PL 107.2

Phone auto-dial and auto-patch is available. The two meter repeater is located at Eagle Rock near Alum Rock Park in the foothills of east San Jose. The 70 cm repeater is located at the Regional Medical Center (formerly Alexian), east of downtown San Jose, north of 280 and 101.

SCCARA NETS

On our two meter repeater: Mondays at 7:30 PM, (not the second Monday--our meeting night). Coordinator: Don Village, K6PBQ. On ten meters, 28.385 MHz USB, Thursdays at 8:00 PM. Net control: Wally Britten, KA6YMD. Visitors welcome.

N0ARY PACKET BBS

SCCARA hosts the packet BBS N0ARY (connect to n0ary-1). User ports: 145.09 MHz at 1200 baud, 433.37 MHz at 9600 baud, and telnet sun.n0ary.org (login "bbs"). Sysop: Gary Mitchell, WB6YRU. For general packet info, see the NCPA web site ncpa.n0ary.org.

AMATEUR LICENSE TESTING

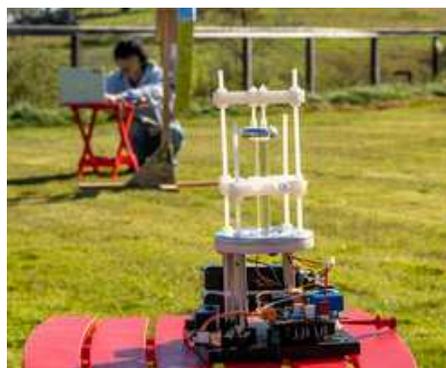
ARRL/VEC Silicon Valley VE group:
Morris Jones, AD6ZH: 408-507-4698

properties to convert an imposed voltage to a mechanical effect, which in turn radiates an electromagnetic current.
(<https://www.nature.com/articles/s41467-019-09680-2>)

The National Accelerator Lab describes the research in an article, "SLAC develops novel compact antenna for communicating where radios fail," which said a new type of pocket-sized devices "could be used in portable transmitters for rescue missions and other challenging applications demanding high mobility" where conventional radios don't work, such as under water, through the ground, and over very long distances through air. "The device emits VLF radiation with wavelengths of tens to hundreds of miles. These waves travel long distances beyond the horizon and can penetrate environments that would block radio waves with shorter wavelengths."

<https://www6.slac.stanford.edu/news/2019-04-12-slac-develops-novel-compact-antenna-communicating-where-radios-fail.aspx>

"Our device is also hundreds of times more efficient and can transmit data faster than previous devices of comparable size," Kemp, the project's principal investigator. "Its performance pushes the limits of what's technologically possible and puts portable VLF applications, like sending short text messages in challenging situations, within reach."



A new compact VLF transmitter, developed and tested at SLAC, consists of a 4-inch-long piezoelectric crystal (clear rod at center) that generates VLF radiation. [Photo courtesy of Dawn Harmer/SLAC National Accelerator Laboratory]

The paper by Kemp et al points to the fact that large size and high loss render conventional transmitter techniques inadequate. "We show that a strain-based, piezoelectric transmitter can overcome many of the fundamental limitations of conventional electrically small antennas (ESA)," the paper's abstract reads. "These transmitters can resonate in a very small footprint while exhibiting low losses."

Taking a deeper dive: "Traditionally, a disadvantage of passive high-Q antennas was low bandwidth. Utilizing piezoelectricity as the radiating element allows us to dynamically shift the transmitter resonant frequency. Therefore, high total Q (low loss) no longer constrains the system bandwidth. These are our fundamental advancements: Achieving an exceptionally high system Q with no external impedance matching network and an effective fractional bandwidth beyond the passive Bode-Fano limit. Although demonstrated at VLF, this concept straightforwardly scales to other frequency bands."

From *The ARRL Letter*, May 9, 2019

Spectrum: FCC Adopts Order on Use of Bands above 24 GHz for Next-Gen Wireless

The FCC on April 12 adopted a Report and Order (GN Docket 14-177) aimed at making available millimeter wave (mmW) spectrum at or above 24 GHz for fifth-generation (5G) wireless, Internet of Things, and other advanced spectrum-based services, including satellite broadband services. The FCC first adopted

rules to allow Fixed-Satellite Service (FSS) Earth stations to be individually licensed to transmit in the 50.4 - 51.4 GHz band using criteria identical to those applicable in the 24.75 - 25.25 GHz band.

“This action will allow FSS operators to provide faster, more advanced services to their customers,” the FCC said in announcing the action.

The Commission also established a coordination process to accommodate the military’s potential need for additional sites in the upper 37 GHz band (37.6 - 38.6 GHz band) in limited circumstances, while protecting the interests of non-federal licensees in this band.

“The[se] steps are an integral step toward the auction of the Upper 37 GHz, 39 GHz, and 47 GHz spectrum bands slated to begin later this year,” the FCC said.

From *The ARRL Letter*, May 16, 2019

FCC is Not Reinstating a Vanity Call Sign Fee

An erroneous report this week suggested that the FCC planned to again impose an Amateur Radio vanity call sign application (regulatory) fee of \$70 for the 10-year term. This incorrect conclusion resulted from an incomplete reading of the May 7 FCC Notice of Proposed Rulemaking (NPRM) in the matter of the assessment and collection of regulatory fees for fiscal year 2019.

Although the Schedule of Regulatory Fees does show a \$7 annual fee for Amateur Radio vanity call signs, a boldface heading in that section of the NPRM states, “REGULATORY FEES. This section is no longer in effect as it has been amended by RAY BAUM’S Act of 2018...” Section 9(e)(2) of RAY BAUM’S Act gives the Commission discretion to exempt a party from paying regulatory fees when the FCC determines that the cost of collection exceeds the amount collected. A new section 9(e)(1) incorporated the Amateur Radio vanity fee exemption from FCC rules into the statute.

The NPRM makes clear in several other places that regulatory fees no longer apply to Amateur Radio licenses. The FCC eliminated the regulatory fee for Amateur Radio vanity call signs in 2015.

First Ham Satellite -- OSCAR 1 -- Joined AMSAT’s 50th Anniversary Celebration at Dayton

A working prototype of OSCAR 1, Amateur Radio’s first satellite, was on display at AMSAT’s Dayton Hamvention® booth. OSCAR 1 (Orbiting Satellite Carrying Amateur Radio) was launched into orbit in 1961, at the dawn of the Space Age. Built by a group of California-based radio amateurs for about \$60, OSCAR 1 was the first non-government satellite. It transmitted a simple “HI” in CW for nearly 20 days and was heard in 28 countries. W1AW Station Manager Joe Carcia, NJ1Q, recently had to troubleshoot a problem with ARRL’s OSCAR 1 in preparation for its Dayton appearance in a special “OSCAR Park” display commemorating AMSAT’s 50th anniversary. He said it was a “rather humbling” experience.

Only three OSCAR 1 satellites were made. One was launched into orbit, of course, while the Smithsonian Institution houses the other. “... it transmitted a chirpy ‘HI’ on 145.224 MHz,” Carcia said.

From *The ARRL Letter*, May 23, 2019

Magnetic Loop Antenna Designs Multiply

Magnetic loops have become popular as effective and compact antennas for traveling and stealth applications. An HF magnetic loop design by John Chappell, W3HX, was an honorable mention in the 2018 QST Antenna Design Competition. Chappell’s mag loop offers coverage on 80 - 20 meters, and he runs FT8 at 50 W. See his article on page 39 of the June 2019 issue of QST.



The magnetic loop for 40 and 20 meters designed by Richard Robbins, WA8RR. [Photo courtesy of DELARA News]

Richard Robbins, WA8RR, wanted to build one of his own for 40 (http://www.k8es.org/archives/2019_May/club%20news.htm) and 20 meters, he described his efforts in a recent edition of his club’s newsletter, DELARA News. An online (<http://www.66pacific.com/calculators/small-transmitting-loop-antenna-calculator.aspx>) calculator helped him come up with the basics, and he decided on a 10-foot circumference loop constructed from half-inch copper pipe that would handle 100 W. His prototype, constructed from a piece of pipe “hand bent into an approximate circle,” a Dayton Hamvention flea market capacitor, and a coax drive loop, would tune the two bands -- although, as expected, tuning was very sensitive and affected by body capacitance.



He worked up a reduction drive and remote motorized tuning, and was able to make several FT8 contacts, using his antenna analyzer to tune the loop. “The tuning would shift as I was transmitting,” Robbins recounted. “This is a result of a very high circulating current and heating of

the separate components.” Encouraged, he went for a higher-end design constructed around a 5 - 500 pf vacuum variable capacitor, the project’s most expensive component (these go for \$150 or more on eBay). “It is big and heavy,” Robbins said. He had a metal fabricator bend a new piece of thin-wall copper tubing into a more aesthetically pleasing circle.

“To drive the capacitor, I obtained a stepper motor and driver, an Arduino controller board, and a four-channel remote,” Robbins explained. “I used some sample programs to develop the code that would move the capacitor at different speeds depending on how long the remote was pressed. I added markings on the capacitor, so I could quickly move to different bands.”

-- Thanks to DELARA News

Meeting Minutes

General Meeting, May 13, 2019



Conference room B-06, Kaiser Hospital building
Lawrence Expressway and Homestead Rd, Santa Clara, CA.

Meeting called to order by President Gregg Lane KF6FNA at 7:39 PM

Customary self introductions.

Announcements

President Gregg KF6FNA:

The club station is open each month at the San Jose Red Cross.

Next month we'll do Field Day at the Red Cross.

June 8 will be the next electronic flea market.

Thanks to all those who helped SCCARA host the May electronic flea market.

We made \$3215 from the seller spots, \$631.60 gross at the food booth (less \$304 costs), and \$134 at our sales table. Comments were that we did a great job.

San Jose RACES will be using our repeater 10 AM to 2 PM this Saturday.

Our guest speaker Kerry Veenstra K3RRY gave an interesting presentation on the Burning Man annual event at the Black Rock desert. It's mainly an art/camping/music event. The works of art can be found in individual camp areas or the public area. There is an amateur component: APRS is available, there are VHF and UHF repeater (portable on a nearby mountain). The APRS nodes EMAIL and EMAIL-2 will take the first word as the email address and send the text as email. It is possible to receive emails to, but it's a bit tricky.

Meeting adjourned at 9:06 PM

Gary Mitchell WB6YRU, recording for the Secretary

Board Meeting, May 20, 2019



American Red Cross, N 1st & Plumeria, San Jose, CA

Meeting called to order by President Gregg Lane KF6FNA at 7:36 PM

Attendance:

President Gregg Lane KF6FNA; VP Ned Tufekcic AC6YY; Treasurer Goetz Brandt K6GKB; Station Trustee Don Village K6PBQ; Directors: Lou Steirer WA6QYS, Wally Britten KA6YMD,, Truman Lindsey N6TRU, Janet Motha KF6PUQ.

Excused absence: James Rustermier KI6ZSK; Secretary Barbara Britten KD6QEI.

Visitors: Editor Gary Mitchell WB6YRU, John Parks W6JPP

Announcements: None

President's Report, Gregg KF6FNA:

June meeting will be about Field Day

July meeting will be about parachute mobile by Rob KC6TYD.

Vice President's Report, Ned AC6YY : None

Secretary's Report,:

Gary WB6YRU: The previous board meeting minutes were published in the SCCARA-GRAM.

Motion by Don K6PBQ to approve the minutes as published, seconded by Wally KA6YMD.

Approved unanimously.

Treasurer's Report, Gregg KF6FNA:

Checking = \$7194.94 Savings = \$500.07 Cash = \$5855.04
Total = \$13550.05

Flea market proceeds: \$3125.97 net

Food table: \$631.60; Seller fee: \$3215; Sales table: \$134.00

(Overhead: ASVARO fee: \$550; food costs: \$304.60)

Trustee's Report, Don K6PBQ:

Club station will be open this Saturday, May 25, 10 AM.

There's a CW contest on this weekend.

Club station will be open Saturday, June 29, 10 AM (weekend after Field Day).

Standing Committees

Repeater chairman's report, Wally KA6YMD: Nothing new to report.

Webmaster's report, Wally KA6YMD: Nothing new to report

Editor's report: Gary WB6YRU:

Nothing was in the May SCCARA-GRAM about Field Day because no info was received. The next edition (June) will be in production next week, need Field Day details very soon.

BBS Sysop's report: Gary WB6YRU: Nothing new to report.

Old Business:

Field Day - Goetz will lone equipment for the GOTA station.

Wally KA6YMD - safety officer, and GOTA station Captain (located on the patio)

Gregg KF6FNA - HF Phone station Captain

Don K6PBQ - CW/digital Captain (located in the radio room)

Gary WB6YRU - 2 m FM Captain. We may have a 2 m FM station, yet to be determined. If we do, we'll need our 2 m amplifier stored by Fred AE6QL, Gregg and Gary will ask Fred.

Gary WB6YRU will print info sheets and signs, guest sign-in sheet etc. Gregg will provide final info.

Don K6PBQ will take care of the BBQ, Saturday mid-day, Saturday night will be both club provided food and potluck.

All other meals will be potluck or bring your own.

John W6JPP: Anyone handing out food to the public, even for free, needs a food handler's certificate from the public health department. That doesn't include us and our guests.

CW/digital HF operators: Don K6PBQ, CW; Ned AC6YY, CW and digital; Lou WA6QYS - CW.

New Business:

George (Red Cross) wants the HF amplifier being stored at the club station removed, and not used at the Red Cross. Lou WA6QYS will store it.

Gregg KF6FNA: We could use a new laptop for a digital station. Lou WA6QYS: motion to purchase a new laptop, up to \$700. Don K6PBQ seconds

6 in favor, 1 opposed

Gregg KF6FNA: Our antenna trailer is being stored at the American Legion, John W6JPP is an official there. John: we need a Memorandum of Understanding. Gregg will work on that with John and get back to the board. Also we'll need to make sure the trailer is in good shape, especially for towing.

Don K6PBQ Motion for \$200 budget for lights, wiring, any other needs for fixing up the trailer. Ned AC6YY seconds.

Passed unanimously.

Gary WB6YRU: We also should have a MoU regarding our 2 m repeater at Goetz's place. We could lose our repeater if something happens to Goetz, we have lost equipment that way before. Goetz K6GKB won't having anything in writing. The consensus was that's OK just to have a place for our repeater currently.

Meeting adjourned at 8:47 p.m.

Gary Mitchell WB6YRU recording for the Secretary

Packet Pieces

Downloaded from the BBS packet network:

=====
Date: 4 Apr 2011 01:20
From: W1GMF@W1GMF
To: HUMOR@USA
Subject: Cheap Meat

A man walks into a butcher shop that has a sign in the window saying "Ground Sirloin: 29 cents per pound." The man says, "I'm having a cookout this weekend. I'd like 5 pounds of your ground sirloin, please."

The butcher shakes his head and says, "Sorry. I'm all out."

The man, disappointed goes down the street to another butcher shop and asks, "How much is your ground sirloin?" The butcher replies, "It's \$3.29 per pound."

"Three twenty nine!?" exclaimed the customer. "Just up the street he sells it for 29 cents!"

The butcher smiles calmly and asks, "Does he have any?"

"No. He's out of it right now."

"Well," says the butcher, "when I don't have any, I'll sell it for 19 cents per pound!"

=====
Date: 17 Jun 2010 03:04
From: W1GMF@W1GMF
To: HUMOR@USA
Subject: The Diary

Linda: "What's that you're reading?"

Jill: "A diary."

Linda: What's in it?

Jill: "I can't tell you that. A diary is a highly personal and confidential affair, it has important secret dreams and secret yearnings. It's private. It's not meant to be shared lightly with other people. And besides, this diary belongs to Margaret."

Need Help?

Amateurs have a long history of helping each other. An experienced amateur who helps another is traditionally called an "Elmer." If you have a question or problem, you are encouraged to ask one of SCCARA's Elmers. Below is a list of topics and who to contact for each. If your topic isn't listed, ask one of the Elmers under the topic that comes closest and we'll ask around.

If you consider yourself to be reasonably competent in at least one area of amateur radio and would be willing help others, please fill out an Elmer form (available from the club secretary or on our web site).

Topics:

Antennas, feed-lines, tuners: **NV6W, W6JPP, K6PBQ**
CW (Morse code): **NV6W, K6PBQ**
DX (long distance, propagation): **NV6W**
EchoLink: **K6GKB**
Emergency operating, preparedness: **WA6QYS**
HF operating techniques: **NV6W, K6PBQ**
Homebrew projects, construction: **WB6YRU**
Legal, FCC rules: **WB6YRU**
License testing, new amateurs: **W6JPP**
Lightning protection, grounding: **WB6YRU**
Packet Network (BBS, forwarding): **WB6YRU**
SCCARA (club inner workings): **K6PBQ, WB6YRU, WA6QYS**
Station set-up, equipment: **K6PBQ, W6JPP**
TVI, RFI: **WB6YRU**

Contacts:

K6GKB, Goetz Brandt, 408-259-7287
e-mail: goetz@ix.netcom.com

NV6W, James D. Armstrong, Jr.,
evening & msg: 408-670-1680

W6JPP, John Parks
e-mail: w6jpp@arrl.net

K6PBQ, Don Village, 408-263-2789
e-mail: donvillage7@yahoo.com

WA6QYS, Lou Steirer, 408-241-7999
e-mail: wa6qys@arrl.net

WB6YRU, Gary Mitchell, 408-269-2924
packet: home BBS N0ARY
e-mail: wb6yru@ix.netcom.com

Newsletter Notes

Unfortunately there weren't many details available about our Field Day activity in time for this edition. There will be more info at the June general meeting. Please plan to attend.

Of particular note is the Red Cross doors automatically lock at night and on the weekends. We'll monitor our 2 m repeater (or you can use simplex on the output). And there will be someone out on the patio with the GOTA station most of the time, or in the break room (which has a glass door and big window facing the patio).

73, Gary WB6YRU, editor



SCCARA
 Santa Clara County Amateur Radio Association
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 SAN JOSE CA 95103-0106



FIRST CLASS

ADDRESS SERVICE REQUESTED

SCCARA Membership Form for 2019

If renewing and none of your info has changed, we only need your name and call

Name: _____ Call: _____ Class: _____

Address: _____ Licensed since (year): _____

City: _____ State: _____ Zip+4: _____

Telephone: _____ New Member Renewal I'm also an ARRL member

E-mail: _____

on ly for club communications and the SCCARA-GRAM newsletter (pdf)

Membership type and dues: **Individual, \$20** **Family, \$25** **Student, \$10 (under 18)**

Memberships start January 1 and expire December 31.

Family memberships (more than one member per household): please include the above info for each member, use separate forms.

New members:

Dues are prorated: dues x (11 - month) x 10% (Example: July would be \$20 x (11-7) x 0.1 = \$8)

If joining in November or December: normal dues for next year, the rest of this year is included free.

I want the paper newsletter delivered by U.S. Mail for an additional \$20 per year

(Prorated, \$1.67 per month. That's \$18.33 if starting in February, \$16.67 if starting in March, etc.)

\$ _____ **Total** enclosed

Give this completed form and payment to the Secretary or Treasurer at any meeting or mail to the club address.