

# SCCARA-GRAM



## Santa Clara County Amateur Radio Association

Volume 48, Number 9

September 2023



## Club Station

Our club station at the Red Cross will be open on September 30 for general operating, from 10 AM to 5 PM. We will continue to work on our Worked All States award from ARRL.



73, Don Village K6PBQ

## ARRL News

From *The ARRL Letter*, August 03, 2023

### ARRL Files Comments Against “Seriously Flawed” Shortwave Rules Petition

ARRL, as part of its mission to protect Amateur Radio, has filed [comments against](#) a proposal that would introduce high-power digital communications to the shortwave spectrum that in many instances is immediately adjacent to the Amateur HF bands. ([http://www.arrl.org/files/file/FCC Documents/ARRL Opposition FCC RM-11953 08\\_2023.pdf](http://www.arrl.org/files/file/FCC Documents/ARRL Opposition FCC RM-11953 08_2023.pdf))

The “Shortwave Modernization Coalition” (SMC), which represents certain high-frequency stock trading interests, filed [the petition](#) with the Federal Communications Commission (FCC). (Previous coverage can be found on ARRL News.) ARRL responded on behalf of its members and the 760,000 licensees of the Amateur Radio Service in the US. (<https://www.fcc.gov/ecfs/document/1042840187330/1>)

The ARRL Laboratory performed a detailed technical analysis over several months to determine if the proposed rules would affect operations on the bands allocated to Radio Amateurs that are inter-mixed with the Part 90 bands in the spectrum in question.

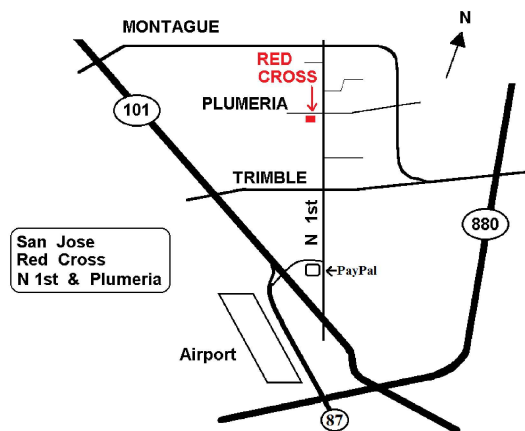
ARRL's analysis determined that if the proposed rules are adopted, the new operations inevitably will cause significant harmful interference to many users of adjacent and nearby spectrum, including Amateur Radio licensees. Ed Hare, W1RFL, a 37-year veteran of the ARRL Lab and internationally recognized expert on radio frequency interference, was the principal investigator on the

## Calendar

- 9/10 Electronics Flea Market
- 9/11 SCCARA General Meeting
- 9/18 SCCARA Board Meeting: On our 2 m repeater after the net at 7:30 PM)
- 9/30 Club Station open, 10 AM - 5 PM

## General Meeting

- Day: Monday, September 11
- Time: 7:30 PM
- Place: San Jose Red Cross, meeting room 3
- Featuring: {to be announced}



study. Hare concluded the petition should not be granted. “This petition seeks to put 50 kHz wide, 20,000-watt signals immediately next to seven different amateur bands with weaker protections against interference than required in other services,” said Hare.

In its formal opposition, ARRL stated, “That destructive interference would result if operations commenced using anything close to the proposed maximum levels.”

ARRL's filed comments highlight flawed analysis and incomplete data submitted by the petitioners. It noted the petitioners “...significantly understate the harmful interference that is not just

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](http://www.qsl.net/sccara)

club email: [w6uw@arrl.net](mailto:w6uw@arrl.net) or [w6uw@sbcglobal.net](mailto:w6uw@sbcglobal.net)

#### BOARD OF DIRECTORS

(officers are also directors)

President	Gregg Lane KF6FNA	408-393-5607
	e-mail: <a href="mailto:kf6fna@comcast.net">kf6fna@comcast.net</a>	
Vice President	John Parks, W6JPP	
	e-mail: <a href="mailto:w6jpp@arrl.net">w6jpp@arrl.net</a>	
Secretary	(vacant)	
	e-mail:	
Treasurer	Ned Tufekcic AC6YY	408-690-7250
	<a href="mailto:t94nt@hotmail.com">t94nt@hotmail.com</a>	
Station Trustee	Don Village, K6PBQ	408-263-2789
	e-mail: <a href="mailto:donvillage7@yahoo.com">donvillage7@yahoo.com</a>	
Director	Wally Britten, KA6YMD	408-891-1105
	e-mail: <a href="mailto:ka6ymd@arrl.net">ka6ymd@arrl.net</a>	
Director	Truman Lindsey N6TRU	408-896-1878
	e-mail: <a href="mailto:n6truhamradio@gmail.com">n6truhamradio@gmail.com</a>	
Director	Lou Steirer, WA6QYS	408-241-7999
	e-mail: <a href="mailto:wa6qys@aol.com">wa6qys@aol.com</a>	
Director	Doug Owens N6DPO	408-568-9870
	e-mail: <a href="mailto:doug@n6dpo.com">doug@n6dpo.com</a>	
Director	(vacant)	
	e-mail:	

#### COMMITTEES

Editor	Gary Mitchell, WB6YRU	408-269-2924
	e-mail: <a href="mailto:wb6yru@ix.netcom.com">wb6yru@ix.netcom.com</a>	
Repeater	Wally Britten, KA6YMD	408-891-1105
	e-mail: <a href="mailto:ka6ymd@arrl.net">ka6ymd@arrl.net</a>	
NØARY BBS	Gary Mitchell, WB6YRU	408-269-2924
	e-mail: <a href="mailto:wb6yru@ix.netcom.com">wb6yru@ix.netcom.com</a>	
Webmaster	Wally Britten, KA6YMD	408-891-1105
	e-mail: <a href="mailto:ka6ymd@arrl.net">ka6ymd@arrl.net</a>	

#### 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.

#### NØARY PACKET BBS

SCCARA hosts the packet BBS NØARY (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](http://ncpa.n0ary.org).

#### AMATEUR LICENSE TESTING

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

likely, but certain, if the rules proposed by SMC are adopted as proposed. It is noteworthy that SMC's proposed rules would provide less protection than the much-lower power amateur radio transmitters are required to provide Part 90 receivers." ARRL's opposition also noted that there was no reported tests conducted with Amateur or other affected stations, but referenced a spectrum capture in the Comments filed with the Dayton Group that showed actual interference into the Amateur 20-meter band from one of the High Frequency Trading experimental stations.

Part 90 HF rules currently authorize a maximum signal bandwidth equal to a voice communications channel, at up to 1000 W peak envelope power (PEP). The petition seeks multiplication of signal width, greater transmitted power, and weaker rules that protect users of adjacent spectrum. ARRL's comments expose the likely fallout:

"Incredibly, notwithstanding the significant increase in potential interference that would result from using digital schemes with 50 kHz bandwidths and 20,000 watts of power, SMC also proposes to substantially lessen the protections required to protect adjacent and neighboring licensees. SMC proposes [out-of-band emissions] limits that offer less protection than the existing Part 90 limits and would actually permit no attenuation (0 dB) at the edge of adjacent allocations, many of which are bands allocated to and heavily used in the Amateur Radio Service. Consistent with lessening protections while increasing the potential for harmful interference, SMC also proposes a lower limit for spurious emissions. SMC would reduce the existing protection of -73 dB for the applicable 1000-watt power limit to just -50 dB protection for their proposed 20,000-watt limit. Due to the much wider 50 kHz proposed bandwidth, the resulting interference would penetrate deep into the adjacent Amateur bands."

The proposal has been assigned FCC Docket No. RM-11953. While the period for commenting on the petition has now closed, replies to comments in the record may now be submitted.

Hundreds of licensed Radio Amateurs filed comments in the Docket, expressing overwhelming opposition to the proposal. Those interested may read ARRL's full comments and the results of the technical analysis, which are included in the filing. "If granted as written, this would be devastating to Amateur operation for many tens of kHz into our bands," said Hare.

ARRL will continue to advocate for its members and the Amateur Radio Service in this proceeding.

Read ARRL's Opposition and the ARRL Lab's technical analysis [here](http://www.arrl.org/files/file/FCC%20Documents/ARRL%20Opposition%20FCC%20RM-11953%2008_2023.pdf).  
([http://www.arrl.org/files/file/FCC Documents/ARRL Opposition FCC RM-11953 08\\_2023.pdf](http://www.arrl.org/files/file/FCC Documents/ARRL Opposition FCC RM-11953 08_2023.pdf))

---

From *The ARRL Letter*, August 10, 2023

## **IARU Approves two Digipeating Amateur Satellites**

The International Amateur Radio Union (IARU) has coordinated two European digipeating satellites that are scheduled to launch in fall 2023. At the Technical University of Kosice in Slovakia, satellite Veronika, a 1U CubeSat, is scheduled for launch on a Falcon 9 launcher on the Transporter 9 mission in October 2023.

The satellite will be equipped with a 24/7 digipeater on two different bands, as well as experimental slow-scan digital video (SSDV) transmissions. There is an education and outreach mission planned to involve Slovak grammar and high schools, and to transmit special CW and AX.25 messages on several special

occasions. The satellite will be equipped with a novel Attitude Determination and Control System (ADCS) subsystem, including electromagnetic actuators and a global navigation satellite system (GNSS) receiver. This will also help to identify the satellite during the first days and weeks of orbit.

The satellite will communicate using Spacemanic's well-known Murgas transceivers (BDSat-1, BDSat-2, Planetum-1). Altogether, Veronika will provide: AX.25 telemetry, a CW beacon, a digipeater, AX.25 and CW messages on special occasions for community engagement, experimental SSDV transmissions, [SatNOGS](#) integration, a decoder, and a dashboard. A downlink on 436.680 MHz has been coordinated, and it will use 9k6 G3RUH AX.25 and a CW beacon. A SpaceX launch on the Transporter 9 mission will send the satellite to a 500/600-kilometer polar orbit. (<https://satnogs.org/>)

The Romanian Federation of Amateur Radio (FRR) is preparing the ROM-3 for launch in October or November 2023. ROM-3 is a 50 x 50 x 100-millimeter picoSAT with three missions and objectives. Its primary mission is to act as a digital amateur radio repeater. Its secondary mission is to transmit low-resolution SSDV images in a Gaussian frequency shift keying (GFSK) mode. The tertiary mission is to transmit a CW beacon that will help amateur radio operators detect the presence of the satellite and measure basic properties of the signals, such as its strength, fading due to spinning, and Doppler to measure speed. A downlink on 436.235 MHz has been coordinated for 20 WPM on CW, 500 (bps) GFSK telemetry, and 5 (kBps) GFSK SSDV. A SpaceX launch will send ROM-3 into a 500-kilometer polar orbit.

---

From *The ARRL Letter*, August 17, 2023

## Amateur Radio Operator Contacts Spacecraft

The headlines are sensational, although a bit exaggerated: "Ham Radio 'hacks' NASA Satellite". While the phrase is eye-catching for social media, the truth is just as exciting. Amateur radio astronomer Scott Tilley, VE7TIL, has made contact with [NASA's STEREO-A spacecraft](#), which passed Earth for the first time in 17 years. (<https://www.nasa.gov/feature/goddard/2023/sun/after-seventeen-years-a-spacecraft-makes-its-first-visit-home>)

The STEREO-A (Solar TERrestrial Relations Observatory) spacecraft was launched on October 25, 2006, from Cape Canaveral, Florida, with its twin sister ship, STEREO-B. Both spacecraft were on a mission to circle behind the and send images back to Earth so scientists could make 3D models of solar activity. In 2014, STEREO-B failed and was not heard from again.

"I'm having fun with STEREO-A," Tilley reported to [Spaceweather.com](#). "The spacecraft is close to Earth this summer, and I can now receive its signal using a small 26-inch dish in my backyard." (<https://spaceweather.com/>)



Scott Tilley's, VE7TIL, dish antenna for receiving NASA STEREO-A spacecraft.

[Photo courtesy of Scott Tilley]

Tilley began hearing rumors that other radio operators were picking up signals from STEREO-A on 8443.580 MHz. He decided to check it out. "The central carrier is very loud, almost 30 dB above the noise," he said. "I also noticed data sidebands, which are unusual to see on such a distant object for my small antenna."

Tilley was able to decode and demodulate STEREO-A's signal using a special program written by Alan Antonie, F4LAU, known as [SatDump](#), and now, he is monitoring almost all of STEREO-A's science instruments, including its Extreme Ultraviolet Imager (EUVI), two coronagraphs (COR1 and COR2), the heliospheric imager (HI), and a solar radio burst receiver (S/WAVES). (<https://www.satdump.org/>)

STEREO-A's closest approach to Earth was scheduled to occur on August 17, 2023.

Amateur radio operators who would like to monitor STEREO-A can check out [Tilley's technical blog](#) for more information. (<https://skyriddles.wordpress.com/2023/07/03/stereo-a-comes-home/>)

[Thanks to Spaceweather.com and NASA for updated information in this story]

---

# Meeting Minutes

## General Meeting, Aug. 14, 2023



San Jose Red Cross, 2710 N. First St.

Meeting called to order by President Gregg Lane KF6FNA at 8:01 PM

### Attendance:

Gregg KF6FNA, Lou WA6QYS, Janet KF6PUQ, James KM6TVT, Ned AC6YY, John W6JPP, Gary WB6YRU, Don K6PBQ, Doug N6DPO, and Truman N6TRU.

### Announcements

President Gregg KF6FNA:

I appoint Truman N6TRU Secretary for SCCARA.

The SCCARAgram deadline is August 28th. Submitting articles sooner than August 28th is better.

The club station will not be open for the month of August 2023 as Don is on vacation in Colorado.

We still have our 10 meter net at 28.385 every Thursday at 7:30 pm. Kelly WB6AAJ is covering for Wally KA6YMD as Wally recovers from eye surgery.

The SCCARA 2 meter net still happens every Monday night at 7:30 pm, except on meeting nights. The Board Meeting is continuing to be held on the third Monday after the SCCARA 2 meter net.

SCCARA's picnic was fun and successful. Ned AC6YY, John W6JPP, and Ognian KN6BEZ set up portable stations at the park. John W6JPP got there bright and early to reserve a spot.

Furthermore, the recent antenna party was successful, although some antennas were mislabeled which caused incorrect tuning up. We're going to conduct an additional antenna party once the weather cools off.

We hope to have future presentations. A number of the presenters we've contacted want to use Zoom rather than come in-person. Also, Doug N6DPO has a Zoom account that we might use.

(Health & Welfare)

Gary WB6YRU's had hip replacement surgery. Recovery is going well.

Wally KA6YMD is still recovering from eye surgery and is hoping to attend the September SCCARA meeting after further recovery.

Vice President John Parks W6JPP: I've contacted a few people regarding presentations at future meetings. We're hoping to see presentations return soon.

Director Lou WA6QYS: I'm thankful for everyone from SCCARA who helped out with SVECS hosting the Electronics Flea Market for August 2023.

James KM6TVT:

I have a number of items I would like to give away or sell. I have some commercial Motorola radios to either donate to younger enthusiasts or sell, depending. As far as I know, I do not have programming softwares with the items. There will likely be effort needed in getting the radios operational and/or programmed.

Vice President John Parks W6JPP: PAARA would be a good club to contact regarding Motorola radios. There are a number of individuals at PAARA who are familiar with setting up Motorola radios.

Editor Gary WB6YRU: (on KM6TVT's Motorola radios) If you want to send an article to the SCCARAgram regarding these radios, that might help get the word out.

We had a box labeled Manuals that we found in the archives. There's interesting documentation for items the club owned in the 1950s and 1960s. It appears we had a large Teletype machine in the 1950s, very interesting!

During Field Day, Ned AC6YY commented that we should sell some of our older radios while they are still worth something, and upgrade with modern radios. I agree, we definitely should look into that.

President Gregg KF6FNA: The older radios are good for voice and we have a specialized satellite radio too. I don't think we've used these radios to their full capacity. Regarding the radio with satellite capability, we would need additional equipment to get it set up (rotor, controller, antenna, etc.)

Trustee Don K6PBQ: I think we ought to use what we have before we upgrade the station with more new equipment. Even with the FT-991, most people do not show up to the club station opening on the last Saturday.

Editor Gary WB6YRU: We don't advertise our abilities sufficiently enough so maybe that's why attendance is low. SCCARA sponsors the N0ARY Packet BBS, but our club station can't work it. We also have two repeaters, but the club station can't work those either. It should have those capabilities at the very least. The Red Cross has Packet, but that's a dedicated emergency Packet station.

Additionally, we have a tri-band Comet CX-333 antenna we could set up.

President Gregg KF6FNA: We should consult with George N6NKT before setting that up. We want to avoid interference with the Red Cross' equipment. I'll talk with George N6NKT about this.

Editor Gary WB6YRU: Interference can be avoided through technical means. The BBS exists in the same room next to other radios on the hill with no problem. It can be done.

Treasurer Ned AC6YY: (Regarding modern equipment SCCARA owns) The FT-991 has an interesting Fusion mode. I played with Fusion when setting up the radio.

Vice President John W6JPP: We need to take inventory with the antenna trailer.

President Gregg KF6FNA: It seems we have a number of improvements we could work on. Satellite capability and packet capability would be nice. However, we should be tactful and respectful if and when setting this up due to the Red Cross' hosting our station free of charge.

Vice President John W6JPP: I've found an additional site for the antenna trailer, with conditions. Regarding the current site at the American Legion post, a number of homeless persons broke into the trailer, so it needs to be secured and inventoried ASAP. We urgently need to re-secure the trailer.

There was no speaker at the August 2023 meeting.

Meeting adjourned at 8:59 PM

Truman Lindsey N6TRU, Secretary

---

## Board Meeting, Aug. 21, 2023



Held verbally on our 2 m repeater W6UU/R

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

Attendance:

President Gregg Lane KF6FNA, Vice President John Parks W6JPP, Treasurer Ned Tufekcic AC6YY, Secretary Truman Lindsey N6TRU, Director Wally Britten KA6YMD, Director Doug Owens N6DPO, and Director Ben Shuford KK6CCU.

Excused Absences:

Director Lou Steirer WA6QYS and Don Village K6PBQ.

Visitors:

Editor Gary WB6YRU, Paul KK6HWN, and Ben N6VOA.

Announcements:

Gregg KF6FNA: SCCARA-GRAM is August 28, last Monday of the month.

The club station won't be open this month (August 2023), but it will be open again in September.

President's Report, Gregg KF6FNA: Nothing to report.

Vice President's Report, John W6JPP:

Pacificon will be in San Ramon, they're looking for volunteers (if you put in 4 hours, you'll get your entrance fee refunded).

Secretary's Report, Truman N6TRU:

Gregg KF6FNA:

The general meeting minutes were published in the SCCARA-GRAM, any corrections? (none heard)

Approved by acclamation.

The July 17 board meeting minutes were published in the SCCARA-GRAM, any corrections? (none heard)

Approved by acclamation.

Treasurer's report:

The total is \$11,991.74.

Standing Committees:

Editor's report, Gary WB6YRU: We've had a problem emailing out the newsletter on time. Wally is having eye issues and the club announce list is on his home computer. A different announce list is needed, something more than one of us has access to.

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

Repeater chairman's report, Wally KA6YMD: No issues with the repeater, still having an occasional interference issue with a pacific repeater, apparently there's a "dirty rig."

Webmaster's report, Wally KA6YMD: The club list is W6UU on Yahoo, we can work on sharing that list for upgrading the announce list.

Old Business:

Gregg KF6FNA: John W6JPP is with the American Legion and needs a antenna work party there.

John W6JPP: At the same time we should do an inventory on the antenna trailer.

Gregg KF6FNA: We'd have more access to speakers if we can use zoom. We need to work on setting that up at our meeting room at the Red Cross.

Doug N6DPO: I need to know what interface is needed with the club projector and then we can test everything out.

John W6JPP: I believe it's a regular USB connection.

Gregg KF6FNA: We will be working on the antennas at the Red Cross later, when the weather is cooler.

Gary WB6YRU: We'll want to use very good coax especially for VHF/UHF, hardline would be best.

John W6JPP: I've got some hardline, but it's 3/4 to 1" thick, that might be too much, it's probably for commercial use.

Discussion followed on the mechanics of installing coax cables and adding to the club station.

(no new business)

Meeting adjourned at 8:17 PM

Truman Lindsey N6TRU, Secretary and Editor Gary Mitchell WB6YRU

---

## Packet Pieces

**Downloaded from the BBS packet network:**

=====  
Date: 10 Apr 2011 07:41  
From: W1GMF@W1GMF  
To: HUMOR@USA  
Subject: Chicago Cab Driver  
-----

On a visit to Chicago, I was eager to visit a posh department store about a dozen blocks from our hotel. My husband obligingly hailed a cab.

"The lady wants to go to Neiman Marcus," he told the driver.

The cabby looked over his shoulder at us, "And does the gentleman want to go to the bank?"

---

## 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 for the above topics:**

K6GKB, Goetz Brandt, 408-259-7287

e-mail: [goetz@ix.netcom.com](mailto:goetz@ix.netcom.com)

NV6W, James D. Armstrong, Jr.,

evening & msg: 408-670-1680

W6JPP, John Parks

e-mail: [w6jpp@arrl.net](mailto:w6jpp@arrl.net)

K6PBQ, Don Village, 408-263-2789

e-mail: [donvillage7@yahoo.com](mailto:donvillage7@yahoo.com)

WA6QYS, Lou Steirer, 408-241-7999

e-mail: [wa6qys@arrl.net](mailto:wa6qys@arrl.net)

WB6YRU, Gary Mitchell, 408-269-2924

packet: home BBS N0ARY

e-mail: [wb6yru@ix.netcom.com](mailto:wb6yru@ix.netcom.com)

---

## Newsletter Notes

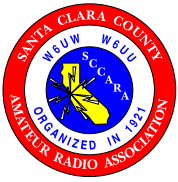
Just a reminder, any text that's underlined and in **blue** is a link. If you're reading this with most PDF readers, you should be able to click on them and it will open the link in your browser. For those reading this on paper, the links are also shown in parentheses.

For example, try clicking on this one, it should open the club web page: [www.qsl.net/sccara](http://www.qsl.net/sccara)

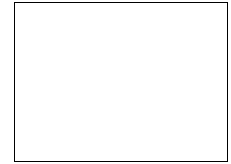


73, Gary WB6YRU, editor

---



**SCCARA**  
 Santa Clara County Amateur Radio Association  
 PO Box 106  
 SAN JOSE CA 95103-0106



**FIRST CLASS**

**ADDRESS SERVICE REQUESTED**

**SCCARA Membership Form for 2023**

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: \_\_\_\_\_

only 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% For 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 \$15 per year**

(Prorated, \$1.25 per month. That's \$13.75 if starting in February, \$12.50 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.