



Propagator

The Monthly Newsletter of the South Orange County Amateur Radio Association

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General Meeting

NPM Center
August 21,
2023 7:00 PM
Norman P. Murray
Center
23492 Veterans
Way, Mission Viejo,
CA 92692

President's Message

This month I'd like to stray from my usual format, and devote this message to recognizing the unquestionably hardest working member of SOARA, YOUR Repeater Director; Brian Roode, NJ6N.

Brian is one of those behind the scenes guys, who keeps a low profile at SOARA meetings, but is always happy to field questions and provide technical advice, not only about repeaters, but about many aspects of amateur radio. He has helped numerous numbers of SOARA members with technical issues.

What isn't immediately obvious, and that which I'd like to share with you, is the tremendous amount of time Brian devotes to upgrading and maintaining SOARA's repeater system. Most of Brian's long hours and efforts are invisible to our members and repeater users. We've recently been upgrading our Temple Hill site with not only newer radios, but with a "Club Deluxe" repeater controller. Ham repeaters aren't simply 2 radios hooked together, one receiving and the other re-transmitting our signals. In addition to that and all the ancillary equipment like power supplies, back up batteries, cabling, duplexers, coax and antennas, a major part of the repeater system, it's the Controller(s) which enable all the repeaters and link radios to other sites, internet connections, etc., and scheduling, to work together.

As it turns out, Ham repeater controllers are often very limited production, sometimes being manufactured by individual hams, in their garages, or very small shops. They are custom in nature, and unlike commercial repeater controllers, Hams like lots of functions and widgets. The above applies to our new Club Deluxe repeater: there is almost no documentation, the internal programming, often in complicated strings, is unusual and homegrown, and even sometimes replacement components are difficult to source. Such is the nature of the beast.

Our new Club Deluxe, while potentially extremely versatile, fits into the mold of all the above. Documentation has been sparse at best, customer support very limited, leaving Brian to try to figure most things out, trial and error. In addition, long strings of code are necessary to make the controller fit into and play well with our various makes and models of repeater and link radios. The challenge: these code strings have to be sent, on air, one by one, to the new controller by the old "Mary had a Little Lamb" DTMF tones! To say that this has been a time consuming nightmare for Brian, is an understatement!

To conclude: the next time you key up on a net, with the repeaters linked between sites, or check in on echolink, think of and say a THANK YOU to Brian, NJ6N who spends countless hours making it all happen.

THANKS Brian, and 73!

Ray, AE6H

General Membership Meeting
Monday, August 21 @ 7:00 pm.
Norman P. Murray Center

SOARA Members,

Join us for our membership meeting Monday, August 21st at 7pm at the Norman P. Murray Center.

Our guest speaker will be our own Kriss Larsen KR6ISS. Kriss will be presenting on the whole radio spectrum; What's there, why is it there, who is there, places out in the middle of nowhere that he's been to, and some fun tidbits and facts you may (or may not) know about. Kriss is a wealth of knowledge and it will be an interesting presentation.

Coffee and Snacks will be served as usual.

This is taking place of what would be a Tech Fair August as we had very low response to that event plan.

Erik Wresch W6INE,
SOARA Vice-President

Note: Ham Radio Examinations will take place prior to the General Meeting and also at the Murray Center. Testing session starts at 6pm and is \$15/session.

Pre-registration is not required and you don't need to be a SOARA member to take the test. Please contact our Education Director, Steve Kuver, if you have questions about testing at k6uvr@soara.org

SOARA Membership Report

We're currently at 214 active members.

We're pleased to welcome one new member this month:

Connor Finnigan, KO6AIA

If you need a new badge or a copy of the repeater manual, send me an email at membership@soara.org.

73, Greg, N6PM
SOARA Membership Director

SOARA Annual Picnic

The annual SOARA fall picnic will be held this year on Sunday, September 17th from 11:30am - 3pm at Laguna Niguel Regional Park, Shelter #3 (see map below, circled in red). Come join us for some fun and food!

The club will provide hamburgers, hot dogs, all the fixings, and bottled water. Side dishes, salads and deserts are pot-luck. Bring your favorite dish and enough to share with others! Food will be served around 12:30pm.

It wouldn't be an amateur radio picnic without some radio fun so feel free to bring your "park rig" or any other radios and get on the air. I will set up a short walking T-hunt as well so bring your t-hunting gear!

There are benches in the shelter, so bring a comfy chair if you prefer.

Please RSVP to me, joe@perrigoue.com with the number in your party that will be attending. We are expecting a big crowd this year, I need you to please make an extra effort send an RSVP so we can get an accurate count. The picnic is open to all members and immediate family as well as prospective members.

I'm looking for volunteers to help setup & cook. If you can help please let me know.

Looking forward to seeing you all!

Laguna Niguel Regional Park

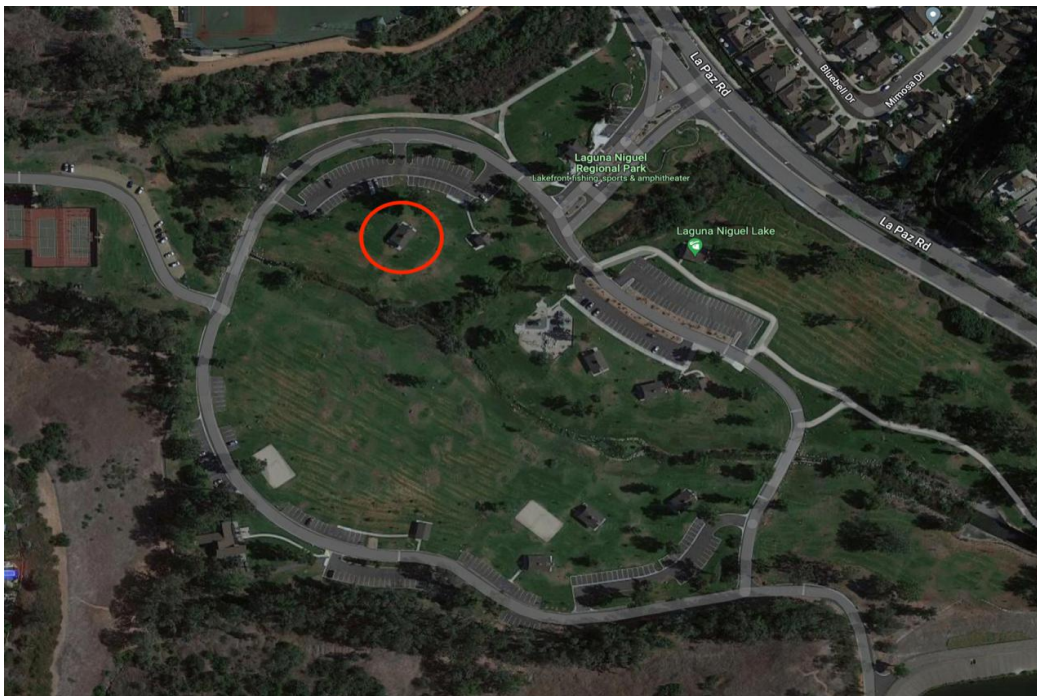
28241 La Paz Rd, Laguna Niguel, CA 92677

Shelter #3 (see map, circled in red)

11am-3pm

Parking is \$5, free to OC Parks members

Joe Perrigoue K7KCE - Activities Coordinator



THE GREAT SOLAR STORM OF MARCH 1940

This story is shocking. On March 24, 1940, a solar storm hit Earth so hard it made copper wires in the United States crackle with 800 volts of electricity. A New York Times headline declared that a "sunspot tornado" had arrived, playing havoc with any signal that had to travel through metal wires.

"For a few hours it completely disrupted all long-distance communication," wrote astronomer Seth B. Nicholson in a recap of the event for the Astronomical Society of the Pacific. Radio announcers seemed to be "talking a language no one could understand."



The New York Times reported that more than a million telephone and teletype messages had been garbled. "Veteran electrical engineers unhesitatingly pronounced it the worst thing of its kind within their memory."

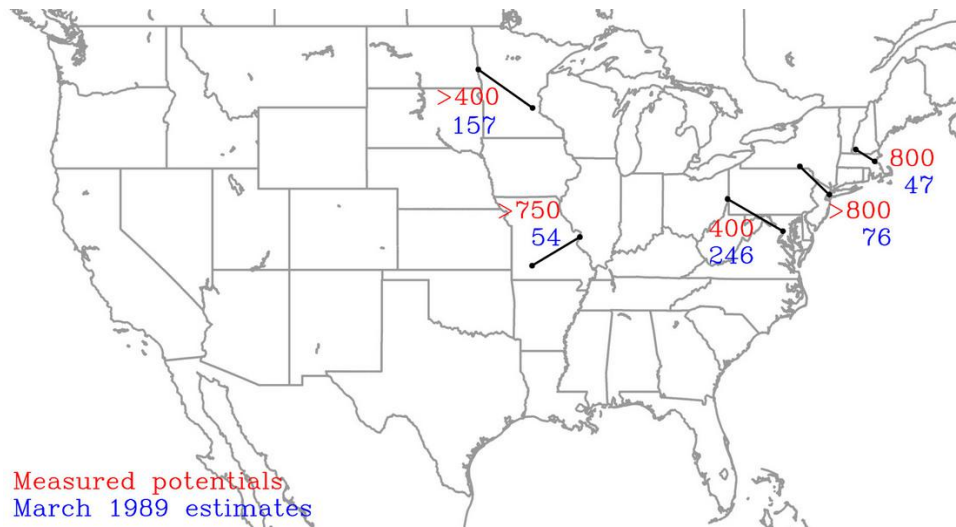
So why have you never heard of this storm? Even in 1940 it was fairly quickly forgotten. World War II was underway in Europe, and the USA was on the verge of joining. People had other things on their minds.

Modern researchers, however, are paying attention. A team led by Jeffrey Love of the USGS Geomagnetism Program just published a new study of the event in the research journal Space Weather. Their work confirms that it was no ordinary solar storm.

"It was unusually violent," says Love. "There were very rapid changes in Earth's magnetic field, and this induced big voltages in long metal wires."

Love and colleagues learned about the voltages from old engineering reports. In 1940, the United States was cross-crossed by copper wires hundreds to thousands of miles long. They were not for power distribution; electrical systems were still mostly regional.

Instead the wires were used for communications such as telephone calls and telegrams. When the "sunspot tornado" hit Earth, electricity began to move through the system. Technicians jotted down some of the voltages they saw--and the numbers were incredible.



Above: Solar storm voltages in March 1940 (red) vs. the Quebec Blackout of March 1989 (blue)

"Records show 400 V in Minnesota, 750 V in Missouri, and more than 800 V in Massachusetts," says Love. "These are 10 times greater than long-wire voltages recorded during the Great Quebec Blackout in March 1989."

What caused the high voltages? Love's team examined old magnetogram records from the date of the storm and found evidence that two coronal mass ejections CMEs hit Earth only 1.82 hours apart. The double blow rattled Earth's magnetic field in a complicated way most single CMEs do not.

"This could be a harbinger of things to come," says Love. Modern studies show that as many as 5 CMEs leave the sun every day during Solar Maximum. With Solar Cycle 25 underway and intensifying, a double hit could definitely happen again.

A similar storm today might not significantly impact communications; we live in the wireless age of cell phones. Electricity is another matter. Modern power systems depend on long wires to shuttle electricity across the country. A repeat of 1940 could interfere with their operations. Love notes that the 1940 voltages exceed NERC power-grid industry benchmarks for 100-year storms. As a result, some modern power grids might not be ready to handle the shock of another 1940 event.

Read Love's original research here: here: <https://spaceweather.com/>

This article was posted to the SEC-EmComm.groups.io Online Group by Barry Porter KB1PA

Submitted to the Propagator via Charley WA6RUZ and Ray AE6H

SOARA - Statement of Cash Income & Expenses
October 1, 2022 Through July 31, 2023

SOARA - Statement of Cash Income & Expenses October 1, 2022 Through July 31, 2023,			
Ten Months Ended:	July 31 <u>2023</u>	July 31 <u>2022</u>	Increase (Decrease)
Cash Income:			
Memberships	10,564	7,878	2,686
Other	<u>8,327</u>	<u>2,133</u>	<u>6,194</u>
Total Cash Income	<u>18,890</u>	<u>10,011</u>	<u>8,879</u>
Cash Expenses:			
Repeaters including site rental, utilities & insurance	13,941	6,363	7,578
Member Activities	3,626	3,162	464
Other expenses	<u>964</u>	<u>1,183</u>	<u>(219)</u>
Total Cash Expenses	<u>18,532</u>	<u>10,708</u>	<u>7,824</u>
Cash Net Income	359	(697)	1,056
Beginning Cash-October 1	<u>25,860</u>	<u>27,741</u>	<u>(1,881)</u>
Ending Cash - June 30	26,218	27,044	(825)
Note: If any member has questions about the financials, please contact the Treasurer or any Board member.			

Ron Mosher - K0PGE
SOARA Treasurer

SOARA Elmer Saturdays

Last month's Elmer Saturday the seventeen attendees were: Ed WA6ED, Ray K6NOV, Charlie KC6FZY, Bill KG6IAR, Bill KM6FOY, Ray AE6H, Tom KK6UMB, Brian NJ6N, Greg N6PM, Greg WE4BY, Claude W6CAG, Anthony KN6HEC, Ravi KN6SIP, Bob N5KZV, George N6SNX, Allan KN6KOR, Jim KI6LOM.

Brian N6PM and others did some satellite voice in the parking lot. (Sorry didn't get a photo) Ray AE6H demoed HF and made contacts. Greg WE4BY demoed his backpack rig. Ed WA6ED, demoed receiving NOAA on a Raspberry Pi with a QFH antenna and a RTLSDR. I also demoed some connector boxes plus some of my latest changes. Maybe improvements too.



Ray AE6H demoing HF with Jim KI6LOM (left) with his Sigma vertical antenna



Ed WA6ED demos QFH Antenna to receive NOAA image signals.



Ed WA6ED demos GQRX and Gpredict demo, on a Raspberry Pi 4 laptop



Greg WE4BY demoing his HF backpack rig. Note large vertical antenna on backpack.

Next SOARA Elmer Saturday will be 8/26/2023 at Gilleran Park. The theme will be test equipment. Bring your test equipment demo! I'm thinking of some interesting NanoVNA or TinySA demos. These are both affordable instruments and perform quite well. There are lots of clones that may cut corners in the construction. I suggest R&L Electronics to start your research. WWW.RandL.com

73,

Ed, WA6ED

[SOARA Nets and Repeaters](#)

As many of you already know, SOARA has nets two nights a week and both Saturday and Sunday. There are also many other nets on our repeaters as well.

We have about seven or eight different net controls for over two dozen available positions every month, depending on whether the month has four or five turns available.

We are always looking for more Net Control operators so please apply if you want to join our select group.

In general our nets are friendly and easy going but there are some rules that we should follow, not many thank goodness.

- The FCC requires you to identify with your call sign within ten minutes of getting on the air and every ten minutes thereafter including when you finish the conversation.
- We (SOARA) as well as almost all organizations with repeaters ask you to identify yourself with your FCC issued I.D. when you first get on the air and then follow the FCC guidelines, including when signing off.
- Other than that we try to avoid controversial subjects that might displease or anger others.

Now to the fun part.

- First of all, all SOARA nets are directed nets and the Net Control is in charge.
- In a conversation with a friend recently we came up with some thoughts and ideas on how to run an amateur radio net and also how to respond to it.
- As Net Control you should try to let your guests do the talking. Guests please feel free to express yourselves.
- Prime them with a good general topic that they can expound on. Guests, if you have topical suggestions for the Net please address the Net Control operator with your thoughts.
- Net Controls, prepare yourself with some good leading questions ahead of time to ask when you need to get a response.
- If it is a small group let them do a round robin, being sure to remind them who is before and who follows. This will make it easier for you.
- Round robin is from Net Control to the first operator A, then to operator B, then to operator C, and so on until everyone has had a chance to express themselves.
- If one operator has a question for another operator, let the operators go directly one to another as necessary, this will save you time and effort.
- In general make sure that they are enjoying themselves.
- Never put anyone in a position where they might feel uncomfortable.
- As a special note for my Emergency Communications friends, this is for our casual SOARA nets, Emcom lives by a different set of rules.

Nota bene: been there and done that.

Heiko AD6OI

2023 SOARA Calendar

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
General Meeting 7:00 PM	30 Online	27	20	17	15	19	17	21	18	16	20	-
Program		-	-	-		Field Day Prep	-	-	-	-		-
FCC Ham Exam 6:00 PM		-	-	-	-	-	-	-	-	-	-	-
Education Classes 8:00 AM			-	-	-	-						-
SOARA Elmer Saturday 9:00 AM	28 WFD Gilleran	Mar 4 Murray Center	18 Murray Center	22 Murray Center	20 Gilleran Park	24 FD Gilleran	22 Gilleran Park	26 Gilleran Park	23 Murray Center	21 Murray Center	25 Murray Center	16 Murray Center
SOARA T-Hunt 1:00 pm	updates	updates	Updates	Updates	Updates	Updates	Updates	Updates	Updates	Updates	Updates	updates
Board Meeting	Feb 6	Mar 6	27	24	22	FD	24	28	25	23	27	-
Special Events	Quartz-fest 17-23	Palm Springs		Visalia DX	Dayton Ham-vention	SOARA Auction 10			SOARA Picnic 17	JOTA 16-18	SOARA Auction TBD	SOARA Holiday Party TBD
Major HF Contests		ARRL DX-CW 20-21	ARRL DX-SSB 6-7 CQWPX SSB 27-28		CQWPX CW 29-30	ARRL Field Day 23-25			CQWW RTTY	CQWW SSB	CQWW SSB	
Volunteer Events	OC Chili Run	Paws Fur Pink OC Chili Run	OC Chili Run Baker to Vegas	Dessert Storm Rally Ride for Rwanda	HD Trails LH Marathon	ARRL Field Day 23-25	MV Fire-works 4				Vision Quest OC Marathon	

Dates subject to Change - Check the SOARA Web Site (<http://www.soara.org>) to verify locations and times or click on the live links in the table

SOARA Information

SOARA meets at the Norman P. Murray Center, 24932 Veterans Way, Mission Viejo, CA on the third Monday of every month at 7:00 PM. For the months of January and February the third Monday is a holiday and the meeting is held on the fourth Monday.



License Exams: Amateur License Exams are given prior to SOARA meetings, except June. Exams are at 6pm. Prior registration is not required and walk-in applicants are welcome. For June, exams are held at Field Day. For further information, email Sean Reigle, AJ6B, at aj6b@soara.org.

SOARA Library: SOARA has many amateur radio related books such as hand books, books about electrical theory, etc. available to lend out to club members. Contact Heiko Peschel ad6oi@soara.org for more info.

Web Site: SOARA maintains a web site with current club information. The URL is: <http://www.soara.org/>

Repeaters: The Laguna Beach, San Clemente, and Trabuco repeaters are open. The Santiago Peak repeaters are closed. For details or questions on the repeaters contact the repeater director, or repeater@soara.org.

2m	— 147.645 - (110.9)	Laguna Beach
2m	— 146.025 + (110.9)	San Clemente
2m	— 145.240 - (110.9)	Trabuco
D-STAR 2m	— 146.115 + (K6SOA C)	Laguna Beach
220	— 224.100 - (110.9)	Laguna Beach
220	— 224.640 - (pvt)	Santiago Peak. (C)
440	— 445.660 - (110.9)	Laguna Beach
D-STAR 440	— 445.705 - (K6SOA B)	Laguna Beach
440	— 447.180 - (pvt)	Santiago Peak. (C)
D-STAR 1.2G	1282.600 - (K6SOA A)	Laguna Beach

Nets:

- 40 meter HF (7.200 MHz +/- , Sundays @ 8 AM
- 10 meter HF (Technicians Welcome) (28.415 +/-) Sundays @ 9 AM
- General Membership Net - UHF/VHF (447.180, 147.645 & 224.640): Tuesdays @ 8 PM
- Astronomy - VHF 147.645: Wednesdays @ 7 PM
- D-STAR (146.115 C module): Wednesdays @ 8 PM
- Tech Net - 147.645, 224.640, 447.180: Saturdays @ 9 AM

- California Rescue Communications (Gordo Net) HF (7.250 MHz +/- for QRM): Weekdays @ 8:30AM
- MVRACES - 447.180: Tuesdays @ 7PM
- Tri-Cities RACES - 146.025: Wednesdays @ 8 PM
- LNACS - 147.645: Thursdays @ 7 PM
- OC Parks Fire Watch - 447.180: Thursdays @ 8 PM

SOARA OFFICERS

President: Ray Hutchinson, AE6H 949-322-8468
ae6h@soara.org

V.P.: Erik Wresch, W6INE 714-883-7694
w6ine@soara.org

Secretary: Charles Schultz, NY6I
ny6i@soara.org

Treasurer: Ron Mosher, K0PGE 949-363-0047
k0pge@soara.org

SOARA DIRECTORS

Repeater: Brian Roode, NJ6N 949-257-2749
nj6n@soara.org

Publications: Ray Frericks, K6NOV 949-682-9106
k6nov@soara.org

Membership: Greg De Hoogh 949-362-5529
n6pm@soara.org

Education: Steve Kuver, K6UVR 949-874-1972
k6uvr@soara.org

Technical: Tom Hobbs, AE6SH 949-887-6527
ae6sh@soara.org

Communications: Dale Tyler, W6EDT 949-360-1717
w6edt@soara.org

SOARA APPOINTMENTS

Past President: Tom Hobbs, AE6SH 949-830-8131
ae6sh@soara.org

Activities Coordinator: Joe Perrigoue, K7KCE
k7kce@soara.org

S. Saturdays: Ed Barnes, WA6ED 949-468-7706
wa6ed@soara.org

Raffle: Bill Colvin KM6FOY
km6foy@soara.org

Testing: Steve Kuver K6UVR
k6uvr@soara.org

Website: Open

Ambassador: Heiko Peschel, AD6OI
ad6oi@soara.org