

PAARAgraphs



The Official Newsletter of the

Palo Alto Amateur Radio Association, Inc.Celebrating 82 years as an *active* amateur radio club—*Since 1937*

Making Waves at UCSC: From Ham Radio to SlugSats

Sarah Mitchell, NF2S
Natalie King, KO2V

Synopsis:

Sarah Mitchell, NF2S, and Natalie King, KO2V, are the President and Vice President of the UCSC Amateur Radio Club, W6SLG. They are currently co-leading the SlugSat micro-satellite project within the school's electrical engineering senior capstone course. During their time serving as club leadership, Sarah and Natalie have led an initiative to revitalize the UCSC radio club. Through accessible projects, equipment fundraising, field trips, and on-campus licensing exam sessions, the two undergraduates have successfully increased both UCSC ARC membership and the club's reach within the engineering department.

Sarah and Natalie have taken their interest in amateur radio outside of the club, by designing a satellite for the ham community in a project called SlugSat. SlugSat is a fully student run, designed, and built CubeSat project for HF amateur radio communications and do particle physics research. While most CubeSats are designed to operate on the UHF/VHF frequencies, SlugSat's main payload is to use an HF linear transponder to operate with a 21.4 MHz uplink and 29.4 MHz downlink. The challenge of building a full satellite from the ground up has been an incredible learning experience for all students involved and they are all excited for an opportunity to see their work go to space.

Sarah Mitchell, NF2S, Club President

Sarah Mitchell is a senior in electrical engineering and mathematics at UC Santa Cruz. After graduating, She will continue pursuing her interest in satellites and space robotics at Space Systems/Loral (SSL) over the summer before moving on to a masters focusing in

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Upcoming Events

April 5	PAARA General Meeting, 7:00 PM Cubberly Community Center, Room H-6, 4000 Middlefield Rd, Palo Alto
May 3	
June 7	
April 17	Board Meeting, 7:00 PM Everyone welcome! Location: Marty, W6NEV, QTH
May 15	
June 19	



President's Corner

April 2019

Spring is here and that means we are starting contest season again. The propagation is actually not that bad to start the season. The weather is getting a little better too, but it wasn't great for the March Flea Market. Don't forget that Visalia is this month too.



Spring contest season has already started with numerous state QSO Parties and things like the Russian DX Contest, but it really opens with the CQ WW WPX Contest, SSB. As I write, it starts in about 24 hours and carries through the final weekend of March. This is a great contest for DX trolling. I don't mean the unpleasant internet style of trolling, but instead going through the bands and looking for fun DX to work. Multipliers in WPX are given for unique callsign prefixes that you work, so there should be stations on from rare and interesting locations with their own prefixes. Those sta-

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Lightweight HF Mobile

Henry Strickland W6REK
 November 2018

It's not too hard to have a decent HF station in your car, so I'll describe what works for me. My setup is lightweight and (mostly) not permanently installed, so it works for my rental cars back in region 4 as well.

I use an ICOM IC-7100 as my portable 100W HF rig. (It also does 6m, 2m, and 70cm, so with this one radio you can check in to the 9am and insomniac nets, as well.) It has a heavier main unit (the Body) and a lighter control panel (the Head) connected by a long cable. Many hams think the large size and prismatic shape of the head precludes installation in their vehicle, but I find the head fits nicely in the trough right by the

Strick Shift of my Honda Civic. The head has a large touchscreen and two rows of buttons, so many settings that are buried deep within menus on other mobile rigs are easier on this one, which helps when you're driving. The head contains a speaker (which I wish were a touch louder) and a plug for the handheld mic.

I place the heavier body in a plastic bin on the floor of the back seat, along with an LDG IT-100 Automatic Antenna Tuner, which can be activated by a button on the control head of the IC-7100. The plastic bin protects the components from dirt and debris.

I have a medium-size MFJ 2m/70cm antenna on a magnetic mount in the center of the roof of the



Fig 1. Radio Head near Stick Shift

car. On the trunk I have a powerful triple-magnet mount with an adapter for MFJ's line of Hamtennas (TM) (what most hams call Ham Sticks, but that's another company's trademark). In my trunk I keep a collection of 75m, 40m, 30m, 20m, & 10m single-band long (around 8') Hamtennas plus short (around 4') Hamtennas for

40m, 20m, and 6m. At freeway speeds, the huge triple magnet will hold a long antenna and a normal single magnet mount will hold a short antenna. The single magnet is not hard to pop off, but the triple magnet is more permanent. My car's clearance is about 12'6" with the long antennas, which is fine for most roads and filling stations, but not parking garages. Using \$20 single-band antennas lets me forget it's on the car and break the antenna in a garage or driveway without losing much money.

The biggest snag is power. I paid a Loud Car Audio shop to professionally install DC power cables directly from the car battery, with a 30A fuse on each cable, coming through the firewall to my dashboard. (They routinely install 300A power for Loud Cars, so my 30A cable was pea-



Fig. 2—Radio Body and Tuner in Plastic Tub



Fig. 3 - Ham Stick

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and there, so it's a chance to see how far you can cast the net. Get out there and give it a try.

PAARA sponsored the March Electronics Flea Market at Fry's in Sunnyvale on March 9th. I can't say it was a smashing success, but I can say that we did quite well considering the weather. As we came into that weekend, the weather reports looked more and more grim. The Flea Market goes on rain or shine, though, so we were prepared for the worst. It was certainly cold early in the morning. I was very happy for a nice warm coat that I bought recently for going back east in January. The gatekeepers were there before I arrived at around 4:30 AM. And of course the vendors were there too. We were set up and running the food concession by 5:30, serving hot coffee and donuts to all comers. Vendors trickled in and the parking lot slowly filled. I guess that we were about 65%-70% full at the peak. The rain finally arrived at around 11, so we started wrapping things up a little after that. Fortunately it stopped for a while so that we could clean up the parking lot without getting too wet. We were packed and out of there by around 12:30. I stayed to kick out the stragglers and make sure no garbage was left. I left Fry's at about 1:15, much earlier than usual. We haven't done the accounting yet, but I think we did okay, particularly now that the fees for the market are so much lower than the were before. A huge thanks to everyone on the PAARA team for making it a success, despite everything. Many people remarked to me about how well organized and helpful everyone from PAARA is. It's all because of you. A sincere thank you to each and every one of you.

The International DX Convention in Visalia is coming up on April 12-14. Don't miss it! It's the premiere gathering of DXers from around the world. There is a great raffle and great people will be there. I will be there again this year and I hope to see you there too. Until then 73 ES CU AT IDXC IN VISALIA FOR GUD DX DE K6WX

Field Day 2019

Field Day (FD) is coming very soon. This year, Field Day is June 22-23. If you're not familiar with what field day is, please see the ARRL website at <http://www.arrl.org/field-day>. Our operating location is at Bedwell Bayfront Park, Menlo Park, at the bay end of Marsh Road. Signs will guide you to the operating site once you're in the park. FD operating begins Saturday, June 22 at 11 AM and continues until Sunday, June 23, 10:59:59 AM.

PAARA puts on a big effort for FD. We are arguably the biggest effort in the bay area. It takes a fair number of people to pull this off. This year, we will again be operating 4A. This means there will be four HF stations operating at one time using emergency power. We will also have a Get On The Air (GOTA) HF station for those who have never worked HF before. There are plans to have a VHF/UHF/Satellite Station too.

All this means we will be erecting HF beams on 6 towers and a couple 40 and 80 meter wire antennas at the operating site. I think you can see why we need a number of volunteers to set up for Field Day. We begin setting up towers and antennas on Thursday, June 20, 5 PM, then continue Friday, June 21 at 9 AM and work until all is ready. There are antenna parties before FD where we assemble the antennas, put them up on a tower, and verify they are tuned and working properly. As with all PAARA activities, **FOOD WILL BE PROVIDED!**

PAARA's planning meetings will begin shortly. The meetings are held at Marty's (W6NEV) house in Sunnyvale. Because we have done this many times, the meetings, attended by the Core FD team, are usually short. Visitors are welcome but space is limited.

We hope to see you at the antenna parties and at field day. It is great fun!

Marty, W6NEV

 mcwayne2@comcast.net
 408-234-8023

Mar 26, 2019, Board Meeting Minutes

The meeting was held at Marty's QTH, commencing at 7:20 PM on March 26, 2019. In attendance were Kristen McIntyre, K6WX (Pres), Marty Wayne, W6NEV (VP), Jim Thielemann, K6SV (Secretary/Membership), Darryl Presley, KI6LDM (Dir), Larry Rebarchik, N6DB (Dir), Joel Wilhite, KD6W (Dir & Technical Coordinator). A quorum was present.

Note: the original date for the meeting was March 21. Due to schedule conflicts, the meeting was moved to the 26th.

Kristen, (K6WX), opened the meeting by mentioning that Jim Rice, K6AK, will be retiring as Raffle Master at the end of this year. Jim has been doing an outstanding job over the last 16 years or so. As such, the board is looking for a volunteer to step into this important position. Please talk with a board member or Jim about the position.

Vice President's Report: Marty, W6NEV, said the speaker next month will be Sarah Mitchell, NF2S and Natalie King, KO2V who will present a talk entitled "Making Waves at UCSC: From Ham Radio to SlugSats". He did mention having two speakers lined up for May and June but is still looking for more to round out the year. There was a short conversation regarding being able to have a presenter present via videoconference. Before attempting that, the board will look into how much bandwidth is available in our meeting room.

Secretary's report: Jim, K6SV, reported that the 77 non-renewing 2018 members have been cut from the roster. The current membership stands at 141. Likely a small percentage of them will renew after receiving a postcard in place of PAARAgaphs. There was a short discussion about the large number of non-renewing members and why they weren't renewing. There doesn't seem to be any obvious reason outside of the normal churn of a club's membership. As Ron, W6AZ, wasn't able to attend, Jim mentioned, thanks to Walt, K6WGY, we received checks from 3 major PAARAgaphs advertisers last month.

Under Old Business,

Marty, W6NEV, reminded the board that a new champion is still needed for the special event station at Pacificon this year. He mentioned that it's not that hard but does take a dedicated individual to put it together. Though Pacificon seems like a long time from now, MDARC is already in the planning stages for 2019 and PAARA needs to start participating in the planning. Please contact Marty or any board member if you're interested in this important role.

Marty also reported that he's working on the next field trip which is being targeted for late Q3 to early Q4. Stay tuned for developments.

The board had a general conversation regarding Gerry, N6NV, and the "PAARA stuff" that Gerry has stored at the farm. Rebar indicated he'd get in touch with Gerry to help him inventory the towers and other items that are at the farm and eliminate anything that's not of value. There was a discussion on what to do next but the board needs to know how much stuff is up for relocation before considering the next steps.

The other items on the agenda that haven't been worked on very much or weren't as critical will be topics for next month.

Under New Business:

Kristen, K6WX, asked for input from the Electronic Flea Market (EFM) which PAARA hosted last month. Though the turnout of vendors and buyers was lower than in the summer months, and though the event was cut short by about an hour due to rain, thanks to the reduced cost of hosting the event at Fry's, it looks like we are just into the black. We'll not know the final numbers until Ron, W6AZ, can get the final costs and income captured. The board also discussed the recent email received from ASVARO regarding the June EFM not having a sponsor due to the dropping out of a club. After some discussion, the board voted to let ASVARO know that PAARA is willing to step in and host the June EFM if ASVARO can't find another sponsoring club.

Kristen also mentioned receiving an email from

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Wallace Porter, K6URO, who was very active in PAARA and isn't doing very well, He wishes to donate the equipment from his station to PAARA. Marty, W6NEV will be reaching out to Wally to arrange for the deactivation of his station. The board had a short discussion about the possible disposition of the equipment.

Marty, W6NEV, asked about his purchase of one of the club antennas that are no longer being used for Field Day. After a short discussion, the board voted to sell the antenna to Marty for \$150.

Joel, KD6W, mentioned that the company he works for is having to move. As they'll be moving to a smaller building, there is a lot of great EFM items that can be salvaged and put up for sale. Once the timeline is a bit clearer, Joel will be asking for assistance in gathering the goodies and getting them to the EFM to sell.

Darryl, KI6LDM, mentioned Field Day and reading the rules for this year. Of mention was the lack of information regarding reporting bonus

points to the ARRL and the ability to send ZIP files which facilitates sending larger files. PAARA has always sent paper reports to the league as the file size is too large to email. Jim, K6SV, mentioned that as a result of information gathered by Kristen, K6WX, when she visited league HQ, this year's report will be stripped down to the bones and only provide the required information so it could be emailed.

Jim also mentioned having gone through the reports from the last 5 years and redacting personal information out of them so they could be added to the members only area of our web site. Getting the reports on the PAARA site is still a work in progress.

The board meeting was adjourned at 8:52 PM.

Jim Thielemann, K6SV
 Secretary/membership

Please welcome

New members: Fernel Andong, KM6UYM

New family member: Jeanette Dilley, KM6ZPY



March Winners, Left to Right

- 1st Ben, W6FDU, Arrow, dual-band hand held yagi antenna
- 3rd Walt, K6WGY, Daiwa 2-position coax switch
- 4th Walt, K6WGY, Multi-meter
- 2nd Karen, KK6NGA standing in for Frank, AF0XX, portable microscope
- 6th Bob K6RWY , 2 Midland FRS radios with batteries and charger
- 5th Merritt, KG6TNO, ARRL Handbook

The PAARA 4/5/19 Raffle Prizes

- 1st Portable LCD Digital Microscope 1-600X with Super Battery (Thanks Mikko, AB6RF)
- 2nd Baofeng UV-5R HT (Thanks Kristen, K6WX)
- 3rd Shaxon Rechargeable Pivoting Driver
- 4th Two Midland FRS Radios
- 5th KC 43 Piece Screwdriver Set
- 6th Tooland 5 Piece Pliers Set
- 7th ARRL Repeater Directory 2019
- 8th iWork Screwdriver with 20 Piece Driver Set

Palo Alto Amateur Radio Association, Inc.

PO Box 911 Menlo Park, CA 94026

Officers

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Director ('18-'19)	Walt Gyger, K6WGY walt@tradewindsaviation.com	408-921-5901
Director ('19)	Larry Rebarchik N6DB n6db@arrl.net	650 465-8210
Director ('19)	Darryl Presley, K16LDM k16ldm@arrl.net	650 255-2454

Appointed Positions

Membership	Vic Black, AB6SO ab6so@smrn.com	650-366 0636
Database	Jim Thielemann, K6SV thielem@pacbell.net	408-839-6815
Chaplain	Rick Melrose K6RDM K6RDM@yahoo.com	408-341-9070
Public Affairs	<i>Position Vacant</i>	
Station Trustee W6OTX, K6YQT, W6ARA....	Gerry Tucker, N6NV	
Station Trustee K6OTA ...	Ron Chester, W6AZ	
Property Manager	Gerry Tucker, N6NV	
Asst. to the Treasurer....	Bob Korte, KD6KYT bob@rgktechsales.com	408 396 4745
Badge Coordinator	Doug Teter, KG6LWE dteter@wvci.com	650-367-6200
Historian Position	<i>Position Vacant</i>	
Raffle Coordinator	Jim Rice, K6AK	650-851-2274
Field Day Coordinator ...	Doug Teter, KG6LWE	650-367-6200
ASVARO Rep.....	Clark Martin, KK6ISP kk6isp@comcast.net	
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Photographer.....	<i>Position Vacant</i>	

VE Exams

Redwood City Main Library, Community Conference Room, 4th Saturday 10:30 am each month and De Anza Park, Sunnyvale, 2nd Saturday 10:30 am each month except November and December. See website for details and exceptions: <http://amateur-radio.org> or Contact Al, WB6IMX@att.net

Electronics Flea Market

Sponsorship by A.S.V.A.R.O. — Association of Silicon Valley Amateur Radio Organizations
 Second Saturday of month, March-September, 6am-12 noon
 Contact: <http://www.electronicfleamarket.com/>

PAARA — Palo Alto Amateur Radio Association

Meets 1st Friday 7:00pm each month at Room H-6, Cubberley Community Center; Net 145.230 - PL 100Hz Mondays at 8:30. See our website at <http://www.paara.org> for more information or contact: Joel Wilhite KD6W, KD6W@ARRL.NET, 650-325-8239

FARS — Foothills Amateur Radio Society

Meets 4th Friday each month at 7:30pm
 Contact: <http://www.fars.k6ya.org>

NCDXC — Northern California DX Club

Meets 3rd Thursday 7:30pm each month,
 Repeater for member info 147.360, Thursday 8:00PM
 Contact: <http://ncdxc.org> or Mike Gavin W6WZ, (650) 851 8699

QCWA Chapter 11

Northern California Quarter Century Wireless Association

Meets third Wednesday monthly at Harry's Hofbrau in Redwood City @ 11:30 AM.
 Guests are welcome. Saturday morning net on 146.850 MHz, PL 114.8

50 MHz & Up Group

Meets 1st Thursday each month at 7pm in the Texas Instruments Building E conference room in Santa Clara.
 Contact: <http://50MhzandUp.org>

SPECS

Southern Peninsula Emergency Communication System

Meets each Monday 8:00pm on Net 145.27, 440.80 MHz
 Contact: <http://specsnet.org> or Tom Cascone, KF6LWZ, 650-688-0441

SCARES

South County Amateur Radio Emergency Service

Meets 3rd Thursday 7:30pm each month, Belmont EOC, Belmont City Hall, One Twin Pines Lane, Belmont CA 94002. Net is on 146.445 [PL 114.8] & 444.50 (PL-100) 7:30 Monday evenings. Contact: President Gary D. Aden, K6GDA 650-743-1265 (D), 650- 595-5590 (N)
 Web: <http://k6mpn.org> E-mail: pres@k6mpn.org

SCCARA

Santa Clara County Amateur Radio Association

Operates W6UU & W6UU/R, repeater 146.985-pl
 Nets: 2m, 7:30pm Mon; 70cm, 10M (28.385) 8PM Thur.
 Meets 2nd Mon each month @ 7:30 PM.
 ARRL/VEC license testing contact 408-507-4698

SVECS — Silicon Valley Emergency Communications

Operates AA6BT repeater (146.115 MHz+)
 contact: <http://www.svecs.net> or Lou Stierer WA6QYS 408 241 7999

TEARS — The Elmer Amateur Radio Society

Dedicated to operational training, knowledge building & FCC exam testing.
 KV6R repeater under construction.
 Contact: AA6T@ARRL.NET
 Most members are Extra Class or VE's. See QRZ dot com/kv6r for class info

WVARA — West Valley Amateur Radio Association

W6PIY six-meter repeater on 52.58MHz. Normally, six-meters is linked with 147 and 223, while 441 and 1286 repeaters are linked.
 VHF: 52.58 (-500) 151.4 ctcss UHF:
 147.39 (+600) 151.4 ctcss 441.35 (+5.0) 88.5 ctcss
 223.96 (+1.6) 156.7 ctcss 1286.20 (-12m) 100.0 ctcss
 Meetings are 2nd Wednesday of every month except July, August and December.
 Contact: <http://wvara.org>, Bill Ashby N6FFC, 408-267-3118, president@wvara.org

American Red Cross, Santa Clara Valley Chapter

Contact: <http://santaciaravalley.redcross.org> or Scott Hensley KB6UOO, (408) 967 7924
shensley@Novell.com

(Please send changes to PAARAgaphs editor)



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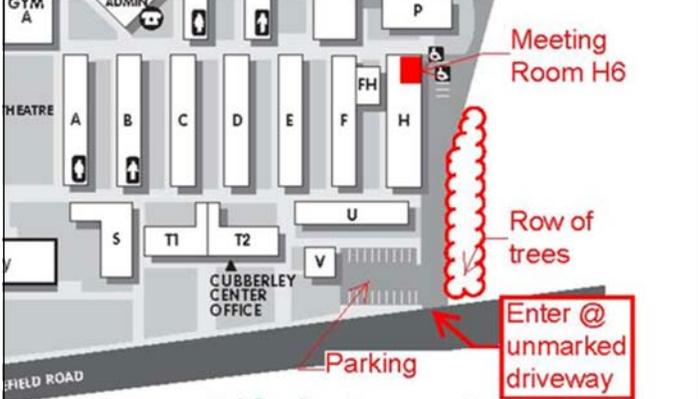
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PAARA Weekly Radio Net

Info and Swap Session
 every Monday evening at 8:30pm
 on the N6NFI 145.230 MHz repeater

Week	Control Operator
1 st	Joel KD6W
2 nd	Doug - KG6LWE
3 rd	Jack - W1VSL
4 th	Rob - KC6TYD
5 th	Rob - KC6TYD

If you're interested in trying out at Net Control,
 Contact Doug, KG6LWE. It's good practice,



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 4000 Middlefield Road, Palo Alto, CA 94303
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Palo Alto Amateur Radio Association
P.O. Box 911, Menlo Park
California 94026-0911

Club meetings are on the first Friday of each month,
 7:00pm at the Room H-6, Cubberley Community Center.

Radio NET & Swap Session every Monday evening, at
 8:30pm, on the 145.230 –600 MHz repeater, PL 100Hz.

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PAARA Badges

You can order a \$20 badge from the PAARA web site or at a meeting through Doug Teter, KG6LWE, and usually pick it up at the next meeting.




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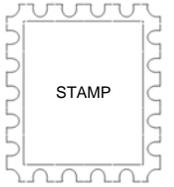
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- For Profit organizations and/or individuals: \$5-business card size, \$14.00-quarter page, \$25-half page, \$50 full page or back cover per issue. These fees may be reduced or waived in exchange for a valuable consideration that is given to the Association or its general membership. Such consideration must be in addition to any existing arrangements with the association. The PAARAgaphs editors reserve the right to reject any ad deemed to be not in the best interest of the Association. All fees payable in advance by the year with "scanner-ready" copy or text-only ads. **Give payment and copy to Walt Gyger, K6WGY.**

PAARAgaphs — April 2019

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 PAARAgaphs Newsletter
 P.O. Box 911
 Menlo Park, California 94026

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KENWOOD



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TM-D710G
2M/440 Dualband



TM-V71A
2M/440 Dualband



TM-281A
2 Mtr Mobile



TH-D74A
2M/220/440 HT

YAESU
The radio



FT-991A
HF/VHF/UHF Transceiver



FTDX1200
100W HF + 6M Transceiver



FT-450D
1100W HF + 6M Transceiver



FTN-400XD
2M/440 Mobile



FT-70DR
C4FM/FM 144/430 XCVR

5 Weeks to Ship!

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