W6OTX W6ARA PAARA NEWSLETTER K6OTA K6YQT
VOLUME 74, NUMBER 9, September 2023

PAARAgraphs

The Official Newsletter of the
Palo Alto Amateur Radio Association, Inc.
The Friendliest Club Around
Celebrating 86 years as an *active* amateur radio club—*Since 1937*
http://www.paara.org/

Conversation With a Ham Cartoonist
JEFF K1NSS CONFIDENTIAL

Too Old Man to change, Jeff K1NSS has been drawing and hamming on and off and on since he was a pup. Jeff Murray is K9YA Telegraph eZine staff cartoonist and creator of webcomic www.dashtoons.com. Now retired from freelance ham graphics, he designed almost 300 custom QSLs, including logo and promos for the VK0EK Heard Island DXpedition. He continues to flog his Art For Shacks merch at www.jeffk1nss.com.

This meeting will be a
Hybrid Meeting
Zoom and In Person

Time: September 8, 2023 07:00 PM Pacific Time
Please check https://www.paara.org for Zoom Details

President's Corner

September 2023

Please remember that the September meeting is on the 8th and not the 1st as that's Labor Day weekend. It doesn't seem like it should be the unofficial end of summer already. I hope everyone enjoyed some summer activities beyond those hosted by PAARA.

I understand that those who attended the Hiller Aviation Museum field trip fully enjoyed the experience. I hear there was quite the turnout. I planned on attending but a major home project got in the way of my participation. Hopefully, you'll be at the September meeting to share your observations and experiences with those who couldn't attend. See the report on the field trip in this issue.

Our next to the last event of the year is another PAARA in the Park on September 30th at Memorial Park in Cupertino. I hope everyone marked their calendars for another great day of socializing, BBQ food, getting on the air, and learning about ham radio. Darryl, KI6LDM, has put together a Fox hunt with a 2M Yagi tape measure antenna build project for hunting the fox. Make sure to contact Darryl if you wish to build an antenna and learn how to hunt "foxes". We'll have an extra HT or 2 there along with an antenna for anyone wishing to participate who doesn't have the equipment to hunt for the fox wherever it is hidden in the park. As in the past, we'll have 2 HF stations and antennas set up for hams or interested parties to use to make contacts. There will be coaches available to assist where needed. Feel free to bring your own radio and use one of the antennas or bring that antenna you've been itching to make a few contacts with. See our website for more information.

September is also the start of elections. Clark, KK6ISP, accepted my appointment to serve as election chair again this year. He is accepting nominations from anyone who wishes to run for a position on the board. Joel's board position is the only one not up for election as he'll be in the 2nd year of his 2-year term. Feel free to talk with Clark or anyone on the board if you have any questions about being on the board. Nominations remain open until the end of the November 3rd club meeting. Elections will be held during the December 1st club meeting. You must

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Upcoming Events

Sept 8*** Oct 6 Nov 3	PAARA General Meeting, 7:00 PM *** Zoom and In Person Meeting
Sept 20 Oct 18 Nov 15	Board Meeting, 7:00 PM. Everyone welcome! Zoom Meeting, eMail President for detailsl

Pacificon 2024 Needs You!

Pacificon is the premier West Coast ham radio convention. Each October, Amateurs gather for all of the things we love like vendors, technology demonstrations, youth activities, license classes, special event stations, Wouff Hong, the swap meet, breakfast with Gordo, the Saturday Banquet, the ARRL Forum, the Antenna Forum, world-class talks, a chance to be with old friends and new, and more. Pacificon is also the ARRL Pacific Division Convention, which means it's near and dear to me as your Division Director.

All of this could go away. That's why I need your help. The Mount Diablo Amateur Radio Club (MDARC) has been the sponsor of this event for many years, and will continue to be the main sponsoring club. They have provided the leaders that make things happen from within their membership. The current Pacificon leadership has worked extraordinarily hard for many years to bring us the excellent experience we have all had. These amazing volunteers have, however, indicated that it's time for them to retire. Starting next year, they are ready to pass this leadership torch on to others in the ham radio community, inside or outside MDARC, who can continue to bring this event to us and grow it into the future.

This is where you come in. In this Year of the Volunteers, I want to encourage you to reach one rung higher and consider taking on one of the leadership roles that need to be filled to continue bringing Pacificon to you. If you are at all curious about what we need, please contact me and I will be happy to fill you in and put you in contact with the right people. This is an urgent need, as planning for Pacificon 2024 starts in just a few months.

Amateur Radio conventions are disappearing across the US. We don't want Pacificon to be one of those. Help MDARC and me keep this event healthy for years to come. You can contact me at k6wx@arrl.org.

Kristen McIntyre
K6WX
ARRL Pacific Division Director

Identifying and Reducing Background Noise with KERMIT

Ben Glick, KN6UBF

RF Background noise has been a huge problem for my HF station lately. That's in part because I live in just about the worst possible environment for an HF station (a first floor apartment with a landlord that's not into the concept of an outdoor antenna), and in part because my corner of Palo Alto just seems to have a high RF noise floor. Because of that, I had been looking for a way to at least identify the noise, and hopefully a way to actually fix or avoid it since this spring.

Given my situation, I was overjoyed to see that the June PAARA meeting's guest speaker was going to help me do just that! I greatly enjoyed Jeff's (W4DD) talk about RF background identification and minimization, and was incredibly excited to try it out for myself. I did some searching based on the notes I took at the meeting and Jeff's QRZ page, but unfortunately wasn't able to find a way to download or use his RFI-mapper software. However, his talk was so good that I knew his approach well enough to try and replicate it. I decided that since it's such a useful program, and the project felt right up my alley given my day job as an operating systems engineer, I would try it out as a learning experience.

For those who couldn't make the meeting, Jeff's talk was all about isolating RF noise that plagues HF stations in populated areas. He specifically focused on two approaches: a "wide band" option for identifying large areas with high RF background, and a "narrow band" approach to isolate specific noise sources (such as malfunctioning power equipment). The "wide band" approach involves traversing an area while continuously sampling the RF noise floor. The data is then post-processed and overlaid on a street map. This approach is good at finding wideband noise, and can be used for noise in a specific frequency range as well, by choosing an antenna that receives well on only the band you care about. The "narrow band" approach is conceptually more simple- it's a 137MHz yagi which you connect to your HT through a step attenuator. This lets you identify a single source of RF noise, as well as its strength. I replicated

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both, but spent most of my time working on the "wide band" mapping method.

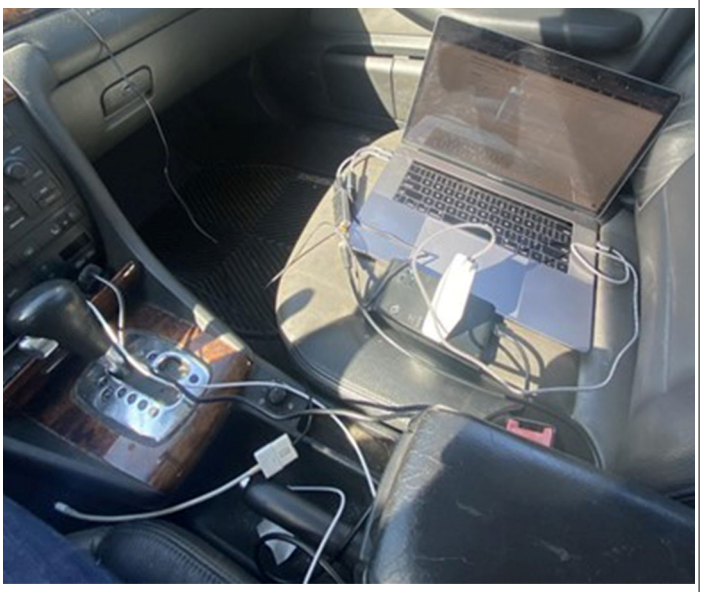
I named my project the Known Electromagnetic Radiation Mapping and Identification Toolkit (KERMIT). KERMIT has two functions, as of today:

- Collect live data on current signal strength
- Process collected data into an interactive strength map

The hardware for KERMIT was not expensive. I didn't yet have a mag-mount antenna on my car, so that was an extra expense, but beside that, I spent a total of under $30. I used:

- A laptop I had lying around
- A USB GPS receiver for $20 (because my laptop has no onboard GPS)
- An RTL-SDR v3 which I already had (can be found for $30)
- A couple of adapters for the SMA port on the RTL-SDR ($10 or so)

When plugged together in the passenger seat of my car, it looks like this:



On the software side, the work took a couple of weekends. I wrote the code in Python, and attempted to make it relatively easy to follow. Essentially, it tunes the RTL-SDR to a specific frequency (I recommend using 137.00 MHz as a starting point since 2m ham antennas receive it well and it's not commonly used for intentional transmissions), and continuously takes samples of what it receives. KERMIT performs a fast fourier transform (FFT) to calculate the signal strength of whatever it's receiving (In our case, the noise floor). It also collects its current GPS location, with 1m precision, a measure of GPS error, and the current time. This data is logged to a configurable file location. Every tenth sample, the program states the current signal strength out loud. This is for two reasons: so that the user knows where they should spend more time (samples are taken at a constant rate, so slowing down means taking more samples in a similar place), and for test transmissions. I tested the system by making transmissions on 146.520 with my HT and when the computer said "S9 plus 20 db" I knew KERMIT was working.

The RTLSDR provides a way to directly read the bytes of the signal sampled. From there, it's easy to take an FFT and extract the signal strength. However, not everyone has an RTLSDR, and I would like to provide the ability to record samples via line-in from any radio at some point in the future. The way I plan to do this is by creating a mapping from (AM) audio signal strength to RF signal strength, and provide a function in my code to let other people create similar mappings for their antenna and radio setups. This has two main limitations: it only works for AM, and those mappings are only as good as the control over the calibration transmissions. The AM limitation isn't too big a deal because the kinds of interference this project is meant to find tend to be both extremely wide-band and with a strong amplitude. That means it doesn't really matter what frequency you are tuned to (other than the ability to isolate from other intentional emissions) or what mode you are receiving in.

After collecting some data, KERMIT will post-process it into an interactive map. It reads all the recorded signal strengths, and plots them on an interactive and zoomable street map. It takes the average of any signals that happen to be within 2 meters of each other, to avoid false hot-spots. This is useful for situations like being stuck at a red light, where many samples are taken in the exact same location. Without this

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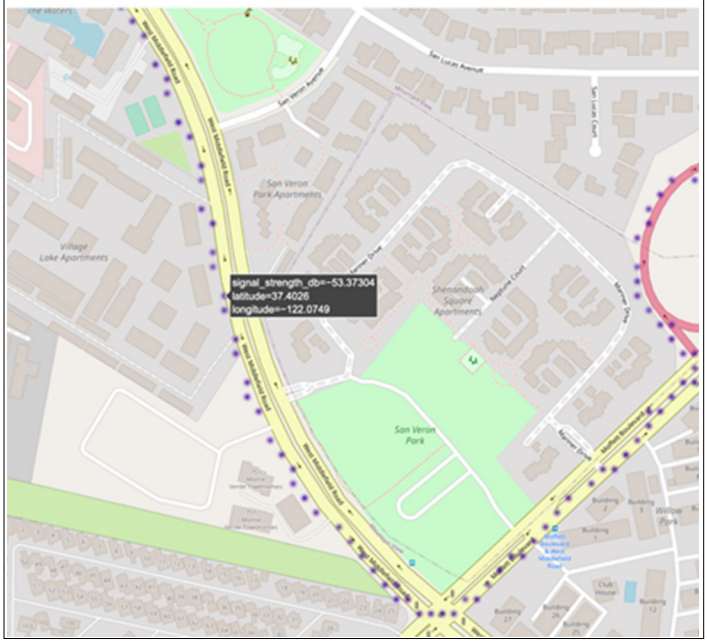
(KERMIT — Continued from page 3)

deduplication, each place the collection continues with motion stopped would result in a bright spot on the map. Since I didn't know of any places with genuine malfunctioning equipment, I tuned KERMIT to the N6NFI repeater during a 9am talk net and drove around, to see if the mapping was working properly. These were the results:

You can see a conversation happening while driving northwest on El Camino Real, across the bottom of the image. The small brighter spots are check-ins. The longer ones are a person saying a couple of sentences uninterrupted. Of course, the end goal of this project is not to record where I was while someone is talking on N6NFI, but this provided me proof that I was actually recording something. To get a sense of the level of detail recorded through this method, here is a zoomed-in example where each individual sample is visible:



Users can mouse-over the samples and the signal strength and lat/lng location show up in a tooltip. These interactive maps work just like google maps, and can pan/zoom easily. The error and timestamp are recorded in the map as well but don't show up in the tooltip by default.

In the future, I would like to crowdsource the collection of this data. I plan to create a website to host all of the data points collected by anyone, and provide a new function in KERMIT to upload user-collected data points to that website. That way, not only is the benefit of being able to see this map shared, but also it's possible to cover more area by spreading the work across many people.

The source code, installation instructions, and examples for KERMIT are available at https://github.com/benhg/kermit. KERMIT is pretty flexible and provides configurable options for all sorts of things, like the signal annunciation frequency, sample rate, and tuned frequency. I welcome any feedback, suggestions, contributions, or users.

Hiller Aviation Museum Tour

Rob Fenn, KC6TYD

On Saturday, August 19, 2023, twenty four PAARA members and guests met at the Hiller Aviation Museum at the San Carlos Airport. We were privileged to have Eric Anderson, our volunteer docent to start the morning off. Eric led us to a few planes that started the birth of aviation. There were quite a few displays highlighting many historical landmarks that took place right here in the Bay Area. Eric spent some time explaining some of the flight control inputs of a helicopter. What made this interesting is one of our participants sat in the helicopter to make each control input as Eric talked about them. There were a few simulators where you can land a 747, fly a helicopter, and learn the effects of thrust. The museum is jam packed full of original, restored, and replicated aircraft. I'd highly suggest you consider visiting the museum if you haven't been there. By 12:30 about 15 of us had migrated to the other side of the airport for lunch at the Sky Kitchen. This is a small café with large portions of good food.

If anyone has ideas for future club field trips, please let me know. Email me at kc6tyd@gmail.com.



Pictures from the Hiller-Aviation Museum Tour

(President — Continued from page 1)

be a current member of PAARA in order to vote and be present in person at the meeting. No online voting is being provided.

Let us not forget that October 20 ~ 22, a short 1.5 months away, is Pacificon and the PAARA special event station. You can register for the event at https://www.pacificon.org/. Mikko, AB6RF, really needs help putting the station together, assisting operators with the operation of the radios, watching the station overnight, and decommissioning the station on Saturday/Sunday. Please reach out to Mikko to lend your hand in setting up or operating the station. Setting up and staffing the station is a very important addition to Pacificon and is greatly appreciated by MDARC, the sponsoring club of Pacificon.

Speaking of Pacificon, MDARC is in a desperate search for volunteers to staff 4 critical chair positions. Pacificon 2024 is in jeopardy of being canceled if these positions aren't filled in September 2023. MDARC has to let the hotel know at the end of September if they need to cancel the 2024 event! See Kristen's story in this issue.

I look forward to seeing a room full of smiling faces at the September 8th meeting. It will be an IRL and Zoom meeting.

73, Jim K6SV

Get on the air to keep the airwaves alive!

August 2023 Board Meeting Minutes

NOTE TO MEMBERS: The September PAARA meeting will be held on Friday, September 8, due to the Labor Day holiday. Mark your calendars.

The meeting was called to order at 7:05 pm. Present were President Jim Thielemann K6SV, Vice President Rob Fenn KC6TYD, Secretary Ric Hulett N6AJS, Treasurer Margaret Cooper K6WEK, Directors Doug Teter KG6LWE, Walt Gyger K6WGY, and Darryl Presley KI6LDM. Also present was Christopher Hoover AI6KG. A quorum was present.

President's Report

This week, we have learned much about the Hawaii wildfires: There were massive failures of communications, including some disruption of ham radio communications. We all need to be prepared for emergencies, even when travelling. Have a portable AM radio, a "Go Kit", with emergency supplies. Keep your batteries charged.

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(Minutes — Continued from page 5)
The 2018 Camp Fire is also example of how wildfire can arrive very quickly, with no warning.

Secretary's Report

Our membership rolls stand at 157 members. 64 percent of our members hold an Amateur Extra class license, 28% are General class, 17% are Technician class. And 5 of our members hold the Advanced class license!

Several members have requested to receive the PAARAgraphs electronically rather than as a paper copy. If you would prefer the PDF each month, contact the secretary at N6AJS@arrl.net

Treasurer's Report

The club bank accounts have been updated to list Margaret K6WEK as our treasurer. Signatories are Jim Thielemann, Doug Teter, and Margaret Cooper.

A check was sent to PIP for the July PAARAgraphs. Checks have been prepared to Rob Fenn and Ric Hulett for club expenses.

Our accountant completed updating the books and paid the small tax due.

VP / Program Chair Report

We have a unique speaker for next month's meeting. Jeff Murray, K1NSS is a ham radio cartoonist. He is an artist, and for many years has penned a series of ham-related cartoons, some including Dash! The Dog-faced Ham. He has a unique view of Ham Radio. We'll see how his humorous drawings reach the club members and ham radio people.

Also, we will try to get an ARES representative to give a quick update on the Maui wildfire event.

December: At recent club meetings, we have had about 25 in attendance. This might be a problem for our traditional December 'Dream to Reality' raffle. This also depends on clearing our status with the State government.

Old Business

Ground resistance testing at KG6LWE site ran into some difficulties, and isn't complete yet.

Members, please write an article for PAARAgraphs. When you have an interesting Ham experience, write it up and submit to K6SV, the editor.

Going month to month hoping for a story isn't enjoyable, PLEASE put pen to paper and get some turned in. We do have a story for September, thanks to Ben, but have nothing for October!

Education Committee:

PAARA in the Park will be an educational venue. We will build Tape Measure Yagi antennas for 2 meters, and will have a 'Fox Hunt' at the park. KN6VAC's mother will invite some young folks to attend.

PAARA-owned gear sales: We have received $123 from sales in the last two months. Rob will provide some manufacturer's information for some of the sale items.

PAARAgraphs advertising: Walt, K6WGY has sent requests to our advertisers. (There are five). Checks will go to the PAARA mailbox.

900 MHz repeater: The repeater is working with the new switch. We still need to schedule a work party to clean up debris at the site.

Web updates: Back issues of PAARAgraphs have been posted to the PAARA.org website. We have an update to the membership roster ready to post online in the members-only area.

The secretary will update references and links in PAARAgraphs. Due by end of August.

PAARA flyer: Rob KC6TYD will draft a New Ham flyer with information on PAARA and the free 1-year membership for new hams: We can give it to the Volunteer Examiners to hand out to new hams.

PAARA invitation postcards are ready to mail out to new hams for May, June, and July.

Doug and Jim hauled two more truckloads from Jerry's ranch. This should be almost complete.

Status on Field Trip to Hiller Air Museum: We have about 23 registered attendees. Members pay a discounted ticket price at the gift shop. We'll go to the Sky Kitchen for lunch after the tour.

Pacificon: Pacificon is 2 months away on October 20th ~22nd . We have requested the use of W1AW/6, but no confirmation yet. We plan to have 4 radios as in past years.

As mentioned at the last meeting and in an email to the board, Pacificon is in desperate need of 4 key volunteers in order to host the 2024 Pacificon. They include the registration chair, hotel liaison, presenter chair, and vendor chair. If you know anyone that might be interested, let them know to contact MDARC or Kristen, K6WX.

PAARA in the Park: The next PAARA in the Park event is September 30. We reviewed preparations. The board voted to collect $25 (in advance) or $30 (day of the event) to cover material costs for the antenna project. Members can pay by cash, check, or request a paypal invoice from N6AJS (N6AJS@arrl.net).

New Business:

Election: September is the start of the election season. Clark has agreed to be the election chair. Members who would like to run for a board position should e-mail Clark KK6ISP at KK6IP@comcast.net to express your interest.

PAARA K-3: The voice recorder for the K3 — not available through Elecraft, they still are not able to manufacture. Memory chip is obsolete. There is an app with a voice recorder. Moved and approved to allow Christopher to buy a used voice recorder with club funds.

We decided to send the club newsletter electronically to all the board members.

We discussed keeping scanned, electronic copies of all paper files.

The meeting was adjourned at 8:50 pm

Respectfully submitted,

Ric Hulett N6AJS
PAARA Secretary

Palo Alto Amateur Radio Association, Inc.

PO Box 911 Menlo Park, CA 94026

Officers

President	Jim Thielemann, K6SV thielem@pacbell.net	408-839-6815
Vice President	Rob Fenn, KC6TYD kc6tyd@gmail.com	650-888-9060
Secretary	Ric Hulett, N6AJS n6ajs@arrl.net	408-332-4593
Treasurer	Margaret Cooper, K6WEK k6wek@arrl.net	

Directors

Director ('23-'24)	Joel Wilhite. KD6W kd6w@arrl.net	408-839-5948
Director ('22-'23)	Walt Gyger, K6WGY walt@tradewindsaviation.com	408-921-5901
Director ('23)	Doug Teter, KG6LWE dteter@wcwi.com	650-743-7892
Director ('23)	Darryl Presley, KI6LDM ki6ldm@arrl.net	650 255-2454

Appointed Positions

Membership	Ric Hulett, N6AJS N6AJS@arrl.net	408-332-4593
Database	Ric Hulett, N6AJS N6AJS@arrl.net	408-332-4593
Station Trustee	W6OTX, W6ARA….Gerry Tucker, N6NV	
Station Trustee	K6YQT Doug Teter, KG6LWE	650-743-7892
Station Trustee	K6OTA Ron Chester, W6AZ	
Property Manager	Doug Teter, KG6LWE	
Badge Coordinator	Doug Teter, KG6LWE dteter@wcwi.com	650-743-7892
Historian Position	*Position Vacant*	
Raffle Coordinators	Rob Fenn, KC6TYD, Shrikumar, KA6Q shri.paara@enablery.org	rtyd@aol.com
Field Day Coordinator	Doug Teter, KG6LWE	650-743-7892
ASVARO Rep	Clark Martin, KK6ISP kk6isp@sonic.net	
Webmaster	Shrikumar, KA6Q webaron@gmail.com	
Technical Coordinator	Christopher, AI6KG ch@murgatroid.com	408-348-0304
QSL Manager	Marty Wayne, W6NEV	408-234-8023
Speaker Coordinator	Rob Fenn, kc6tyd	650-888-9060

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Ron Chester W6AZ — Joel Wilhite, KD6W
Jim Thielemann K6SV

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Member Profiles	*Position Vacant*	
Technical Tips	Ric Hulett, N6AJS	
Photographer	*Position Vacant*	

VE Exams

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

Electronics Flea Market (ESM)

Sponsorship: **A**ssociation of **S**ilicon **V**alley **A**mateur **R**adio **O**rganizations (ASVARO)
The Electronics Flea Market is seeking a new location. Until that is resolved, the EFM is on hold. Website: http://www.electronicsfleamarket.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 website at http://www.paara.org. For more information. contact: Joel Wilhite KD6W, KD6W@ARRL.NET, 650-325-8239

FARS — Foothills Amateur Radio Society

Meets 4th Friday each month at 7:00pm at Covington School, Los Altos.
Website: http://www.fars.k6ya.org

NCDXC — Northern California DX Club

Meets 3rd Thursday 7:00pm each month,
Repeater for member info 147.360. Contact president@ncdxc.org, Website: http://ncdxc.org. YouTube content: "The Northern California DX Club Official Channel". Cohost of the International DX Convention.

The 50MHz & Up Group of Northern California

This organization specializes in vhf + wak signal and microwave activities. Meetings are held on the first Tuesday of each month. Time is usually 5pm for in person meetings, and 7pm for Zoom only meetings. In person meetings are held Sports Basement, 1177 Kern Ave, Sunnyvale.
Always check the website, http://50MhzandUp.org, for correct information. Zoom information is also there.

San Mateo Radio Club W6UQ.ORG

Meets, 3rd Friday, January through November.
Tuesdays & Thursdays, [Directed] Net, 7pm, N6ZX 145.370Hz, -600KHz, PL107.2Hz
Contact: SanMateoRadioClub@gmail.com, Website: http://W6UQ.org/calendar

SPECS

Southern Peninsula Emergency Communication System users Group

Meets each Monday 7:30pm and 8:00pm.
See: https://specsnet.org/monday-night-net for more info.
Contact: https://www.specsnet.org/contact or board@specsnet.org

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+)
Website: http://www.svecs.net or contact: Lou Stierer WA6QYS 408 241 7999

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:			UHF:		
52.58	(-500)	151.4 ctcss			
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.
Website: http://wvara.org, Contact: info@wvara.org

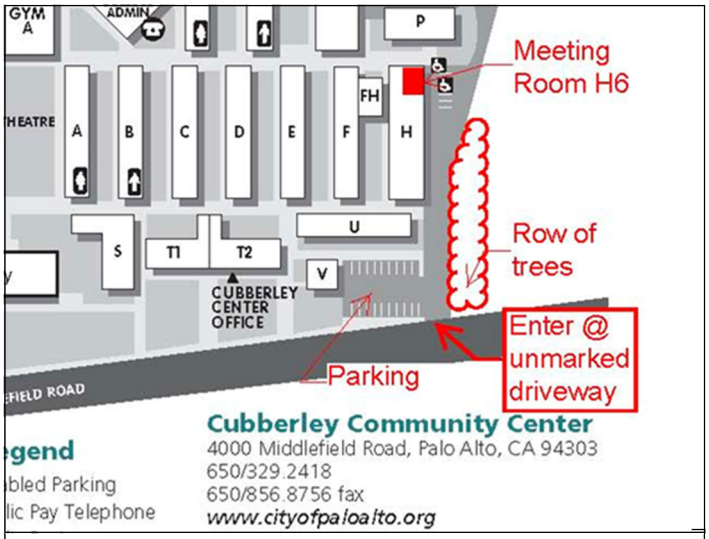
(**Please** send changes to PAARA*graphs* editor)

PAARA Weekly Radio Net

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

Week	Control Operator
1st	Doug - KG6LWE
2nd	Doug - KG6LWE
3rd	Ric - N6AJS
4th	Rob - KC6TYD
5th	Rob - KC6TYD

If you're interested in trying out at Net Control, Contact Doug, KG6LWE. It's good practice, and lots o' fun! Give it a try.



Meeting Location — Middlefield Road between San Antonio and Charleston in Palo Alto. 4000 Middlefield Road

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.

Membership in PAARA is $25.00 per calendar year, which includes one subscription to PAARAgraphs
$6 for each additional family member (no newsletter).
Make payment to the
Palo Alto Amateur Radio Association,
P.O. Box 911, Menlo Park, CA 94026-0911

ARV'S, WA6UUT (SK)
WEDNESDAY
HAM RADIO LUNCHEON
Our 16th year!
- Since May 2, 2007 –
BLACK BEAR DINER
Sunnyvale, California
415 East El Camino Real
(Just "North" of South Fair Oaks Avenue on El Camino Real)
11:30 AM ~ 3:00 PM
Website:www.blackbeardiner.com

Many food choices available from the breakfast, lunch or dinner menus. Ample parking is available. Walk in & "bear" left for our location in the restaurant!

NOT A CLUB, CLOSED GROUP OR CLIQUE; AMATEUR RADIO OPERATORS AND FRIENDLY PEOPLE ARE ENCOURAGED TO ATTEND!
Call in on the N6NFI Repeater, 145.230 MHz, PL® 100Hz

Submit items to **PAARA*graphs*** by the 3rd Wed to:
rrvt@swde.com
Text: .doc, .rtf, or .txt
Photos: jpg, png or tiff

Subscription Problems?
Contact Database Manager:
Ric Hulett, N6AJS
408-332-4593
energyconserved@sbcglobal.net

Have you discovered us?
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Anchor Electronics 2040 Walsh Ave, Santa Clara
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www.anchor-electronics.com

PowerFlare®

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www.powerflare.com

PAARA W6OTX Repeaters
Located near Alum Rock Park, San Jose

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PAARA*graphs* Newsletter
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