

# PAARAgraphs



The Official Newsletter of the

**Palo Alto Amateur Radio Association, Inc.**

Celebrating 82 years as an *active* amateur radio club—Since 1937



## The Camp Fire - Phones, Fires and Failures

Alan Thompson - W6WN

### One of the big lessons of the Camp and other fires is:

People must find more resilient solution to help ensure our communities get timely, life-saving information about fast-moving disasters like the Camp Fire, especially in light of our collective over-reliance on cell phones and the Internet for everything - technologies that, in turn, depend on a trillion dollars of vulnerable infrastructure not to fail.

Here's an outline of the Presentation:

- Time Line detailing the sequence of events that unfolded on November 8, the first day of the fire
- Catastrophic points of failure that impacted emergency communications, alerts, and evacuations
- Our Team's role in restoring damaged cell phone services, and day-lighting the vulnerabilities that caused us to be there in the first place
- Suggestions for actions we can all take right now to help save lives in our own, local communities
- The role that "Community Radio" might play in this effort (this part is only an introduction to a separate presentation)

### Bio

Alan first became a Ham at age 11. At the time, he was the 2nd youngest Ham Radio Operator in the US. He let his license lapse, and just came back on air in 2017. Alan is the Owner and Field Engineer for El Dorado Networks in El Dorado County, and is responsible for installing satellite TV and Internet systems in the Western

*(Camp Fire — Continued on page 4)*

## Upcoming Events

June 7 July 12 Aug 2	PAARA General Meeting, 7:00 PM Cubberly Community Center, Room H-6, 4000 Middlefield Rd, Palo Alto
June 12 July 17 Aug 21	Board Meeting, 7:00 PM Everyone welcome! Location: Marty, W6NEV, QTH 

## President's Corner

June 2019

It's June already and that means two things (at least): the summer solstice and ARRL Field Day. I also just came back from Dayton Hamvention. It was another great experience with hams from all over the world. And we have our second Flea Market coming up.



With the summer solstice - the longest day of the year - coming on June 21st, right at the beginning of Field Day, we should see maximal ionospheric illumination. That's both good and bad. It's good in the sense that refraction can be maximized, allowing the higher bands to have a better chance of being open. But it also energizes the absorptive layers, like the D Layer, that attenuate signals. This is particularly true on the lower bands. Some bands are affected in both ways. In mid-summer we often see that 20 meters is kind of dead in the middle of the day, but that it is good late into the night. Even 15 meters can come to life early in

*(President — Continued on page 4)*

## FIELD DAY 2019

The Field Day operator signup sheet is now active using Google Sheets. The link to the signup is <http://www.tinyurl.com/FieldDaySchedule>.

## The Boy Scouts Radio Merit Badge

Ric Hulett, N6AJS

### Requirements (excerpts from the Radio merit badge requirements, 1965):

4. ... Build from individually purchased parts or from a kit at least one piece of radio equipment, using a vacuum tube, transistor or diode (including selenium, germanium, or silicon rectifiers). Demonstrate the equipment for the counselor to show that it works correctly and to show that the wiring is safe, correctly soldered, and reasonably neat.
5. Demonstrate your ability to send and receive the Morse code by ear for at least 1 minute at a rate of at least five words (25 letters per minute) without any errors.

Today, the requirements for the Radio merit badge are much simpler than in 1965. A scout can fulfill the requirements and earn the badge in a single day – The Pacific Sky council sponsors an annual ‘STEM Merit Badge Midway’ in December, at the Ralston Middle School in Belmont.

This year, Andrew, N6JLJ, and I were the counselors for 20 scouts who showed up at 8:30 in uniform (mostly), and with ‘blue cards’ in hand. Here are some of the current requirements, and highlights of our day:

#### **1.b. Discuss the phonetic alphabet and how it is used to communicate clearly**

In unison, we all recited, “Alpha, Bravo, Charlie...”. Then the scouts spelled their names in phonetics.

#### **2.a. Sketch a diagram showing how radio waves travel locally and around the world.**

I started the propagation discussion with a question: “If radio waves travel in a straight line, how can I communicate with stations around the world?”

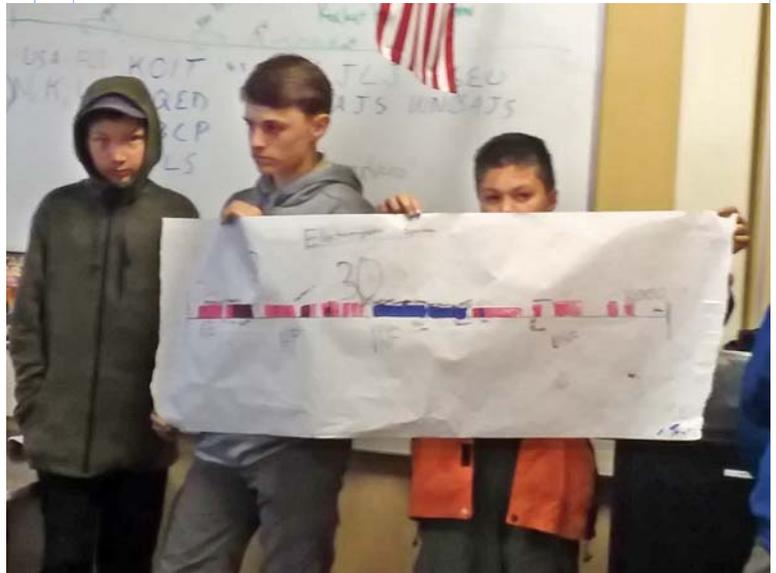
One scout answered, “Satellites?”

#### **b. Explain how the broadcast radio stations WWV and WWVH can be used to help determine what you will hear when you listen to a shortwave radio**

Time for an activity. The scout patrols each took a portable shortwave receiver outside, and checked for WWV on 2.5, 5, 10, 15 and 20 MHz. Sunspots being what they are, there was only a signal audible at 10 MHz. But, we heard both the man’s voice (WWV) and the woman’s voice (WWVH) – Colorado and Hawaii.

#### **3.a. Draw a chart of the electromagnetic spectrum covering 300 kHz to 3,000 MHz.**

- b. Label the MF, HF, VHF, UHF, and microwave portions of the spectrum on your diagram.**
- c. Locate on your chart at least eight radio services such as AM and FM commercial broadcast, citizens band (CB), television, amateur radio (at least four amateur radio bands), and public service (police and fire).**



Another activity. Scouts are much more engaged by ‘doing something’ than by listening to a talk.

We also covered a number of radio-related topics: NOAA weather broadcasts, modulation, electrical safety, and careers in radio. It made for a crowded schedule.

(Merit Badge — Continued from page 2)

**7. Visit a radio installation (an amateur radio station, broadcast station, or public communications center, for example) approved in advance by your counselor. Discuss what types of equipment you saw in use, how it was used, what types of licenses are required to operate and maintain the equipment, and the purpose of the station.**

In the classroom, I set up my FT-450, with power supply, microphone, CW paddle, and a sampling of QSL cards from around the world. Outside, my Buddipole brought in some signals – although we didn't make any contacts this year.

Scouts particularly enjoy sending dits and dahs with the paddle.

#### **9.d. Amateur Radio Direction Finding**

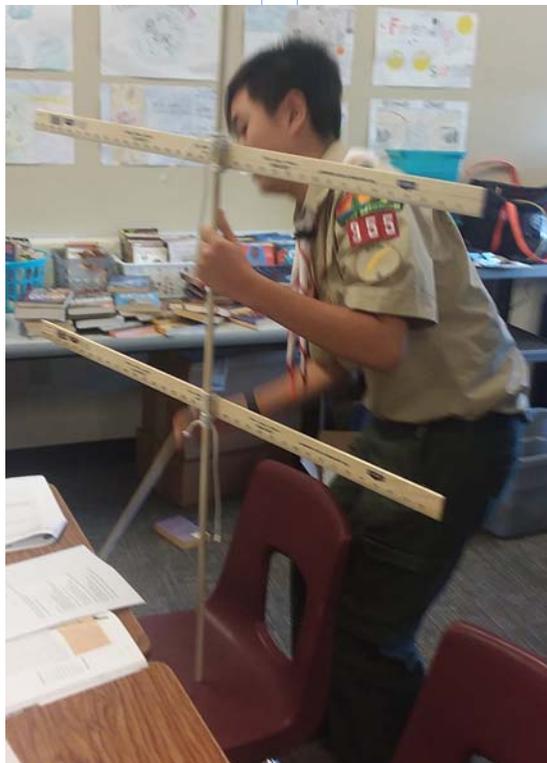
**Build a simple directional antenna for either of the two frequencies used in ARDF.**

I worked for some time to adapt a directional antenna that the scouts could build in the short time allowed. My version this year is the "yardstick Yagi". A simple design for a 2 meter, 3-element Yagi appeared in QST, April 1993. It gave me the basic dimensions.

To keep the construction cheap and simple, I used yardsticks for the element supports. The instructions were to lash the element supports to a 1X2" boom, and tape wires to the yardsticks.

This was when I discovered that the scouts are not familiar with lashing. We spent many minutes while the boys worked out the details. Finally, we used duct tape to secure the elements!

Next year's design will bolt together.



#### **4. Participate in a simple fox hunt using your antenna along with a provided receiver.**

This was the fun part. The scout patrols attached a handheld to their yardstick Yagis and headed out to the field behind the school. Andy, KR6DD, had kindly lent me his 'fox' transmitter. To keep the signal level down (the field is pretty small) I put the fox inside a Pringles can wrapped in aluminum foil. About an inch of antenna poking out the top gave plenty of signal.



The scouts were able to take an approximate bearing to the hidden transmitter, then we walked a few dozen yards to a different vantage. After three directional checks, the boys knew which way to head to find the fox. And, an aluminum-wrapped potato chip can isn't that hard to find!

#### **Badges earned!**

We signed off the merit badge cards for the scouts at the end of the afternoon. As the scouts signed out, I checked with a few of them to see how they liked the class. One of the scouts said, "This is great! How can I get a ham license?"

I felt at that minute that my day had been very well spent.

*(President — Continued from page 1)*

the morning and work until early evening, depending upon the UV output of the sun. Of course, you never know. In addition to the length of the day, the activity on the solar surface plays a very big role in determining propagation. Let's hope that we get that kind of favorable propagation for Field Day.

Speaking of Field Day, we only have about 4 short weeks left before the premier operating event for North America. That is, of course, ARRL Field Day, or FD. It is our chance to shine as Amateur Radio ambassadors to our communities. Clubs and individuals around the continent will be showing the public how we can get on the air and communicate when all else fails. PAARA will be participating in the usual way by erecting our towers and Yagis. We will have our A (up the hill) and B (down the hill) stations that alternate 15-40 meters with 20-80 meters, SSB and CW. This year we will try to do some FT8 digital on the 15-40 meter SSB station, most likely at night. It will be a first for us so there may be some debugging around inter-station interference. We will see. We are always looking for operators, so be sure to contact the FD coordinators, KG6LWE or W6NEV, or any of the station captains (N6DB, N6AJS, W6NEV, K6WX) if you want to operate. We will be happy to put you in front of a radio. In particular we are always looking for CW ops. If you want to help out with setup or teardown, we also need your help. Just let us know.

Dayton Hamvention in Xenia was not to be missed this year. There was a dizzying array of equipment on display, including the new Elecraft K4. I got a chance to chat with Wayne a bit and see the radio up close. It looks impressive. I particularly like that it has modern I/O like USB, ethernet, and HDMI. Apparently there's a Linux machine inside, so that explains the easy support of things like multiple screens and remote control. There were other things to be seen too, and interesting talks. I attended some of the legal forums where I learned a few things about Amateur Radio case law. It was fascinating. And of course, I spent time with my fellow IOOK Vice Presidents, partaking in all of the traditions that go with Hamvention. If you

haven't been to Hamvention before, or haven't been in a while, I urge you to check it out. You won't be disappointed. One final note - as I write this I was informed of the destruction of much of HARA Arena by tornadoes in Dayton. It seems like our ham friends were alright, but there was significant destruction in some areas.

PAARA will be hosting the ASVARO Electronics Flea Market on June 8th. That's right after the next PAARA meeting. We still need some help, so please volunteer if you can. Just let me know by email and I'll put you on the list. CU AT PAARA AND THE EFM DE K6WX

*(Camp Fire — Continued from page 1)*

US and Mexico. Projects include work for Facebook, Intelsat, Merrill Lynch/Bank of America and, most recently, he was part of a Disaster Recovery Team that helped restore cell phone service after the Camp Fire. Alan will cover communications failures during the Camp Fire, and offer suggestions on how communities can mitigate similar disasters here. Alan has been in the satellite communications business for 35 years, ever since the "BUD (Big Ugly Dish) Days" in 1983.

### **May 15, 2019, Board Meeting Minutes**

The meeting was held at Marty's QTH, commencing at 7:14 PM on May 15, 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), Walter Gyger K6WGY(Dir). A quorum was present.

Kristen, (K6WX), opened the meeting starting with a discussion on how to get more members to participate in the "on the air" segment of the meetings where members report on any ham related activities or contacts they made. Though there is a large number of General and Amateur Extra license holders in the club, few seem to be active or are not interested in sharing any contacts they recently made. Part of the point of this segment is to get newer hams interested in upgrading thus joining in on the fun. Regardless of where or with whom the contact was made, you never know who might be interested in learning

*(Minutes — Continued on page 5)*

*(Minutes — Continued from page 4)*

that you made contact with someone close or far away, from your QTH or portable. Thus, all members are encouraged to share whatever ham related activities or contacts they recently made with others.

Vice President's Report: Marty, W6NEV, indicated that Alan Thompson, W6WN, will be at the June meeting to talk about the emergency response effort of Ham's during the Camp Fire. Marty also mentioned having speakers for the rest of the year except for October. Reach out to Marty if you have any suggestions for an October speaker or anyone else who would be of interest to the membership.

Secretary's report: Jim, K6SV, reported that the membership has increased from last month by 16, due to renewals and 3 new members. The membership now stands at 178.

#### **Under Old Business,**

Marty, W6NEV, reported that the next field trip will be to the SS Jeremiah O'Brien Liberty Ship on September 21st. Participants will provide their own transportation to Pier 45 in SF, carpooling is encouraged. The tour will start at 10 AM with lunch provided on the ship by Boudin Bakery. Look for pricing to be announced shortly. As the USS Pampanito is at the same pier as the Jeremiah O'Brien, those interested can also tour the sub for an entrance fee of \$10 for Youth 5~13, \$20 for Adult 14~61 or \$15 for seniors 62+.

Marty, W6NEV, showed the board some artwork for the commemorative plaque he received from the plaque manufacture. The board approved the artwork for which the funds were approved at the last meeting. Stay tuned for its unveiling later this year.

The board had a short discussion regarding finding a new Raffle coordinator. No one has stepped up yet. Please let a board member know if you have any questions about the volunteer opportunity or wish to take this important position on.

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.

Marty, W6NEV, reported the sale of 18 Field Day shirts with a few more expected before the sales closed 2-days after the meeting. Jim, K6SV, also reported on the success of the 1st antenna party at Doug's, KG6LWE. Two antennas were assembled and tested. A third was rebuilt due to an issue last year. Once repaired, it was also tested. All three are ready for FD 2019. A second antenna party is planned for May 25th. PAARA Members are reminded to go to [www.tinyurl.com/FieldDaySchedule](http://www.tinyurl.com/FieldDaySchedule) and sign up for a Field Day operating timeslot.

#### **Under New Business:**

Kristen, K6WX, reminded the board that PAARA will again be hosting another Electronics Flea Market (EFM). We will be hosting the June 8th (the day after the next PAARA meeting) EFM at Fry's in Sunnyvale. Reports from the May EFM were very positive with all vendor slots being sold. Kristen will be sending emails out to gather the volunteers needed to host the event. Please let Kristen know by email if you're interested in assisting.

Jim, K6SV, mentioned the date for the next board meeting was the day before Field Day set up begins. After a short discussion, the date of the June board meeting is moved up 1 week to June 12th. He also mentioned PAARAgaphs is usually published the week before a club meeting. As the July meeting is moved to July 12th due to the Fourth of July being the day before the 1st Friday in July, this puts the publication of the July issue when both Bob, K6RWY, and Jim are on vacation. After another short discussion, the board agreed to publish the next issue as though the July meeting was on the 5th and put a large reminder on the font that the July meeting will be on the 12th to remind members of the different date.

The board meeting was adjourned at 8:47 PM.

Jim Thielemann, K6SV  
Secretary/membership

#### **Please welcome New members:**

Jim Hines	KE6RAB,
Mike Klemens	H6IMY,
Dave Conroy	KM6CPF (and VA3NIA)



## May Raffle Winners

Front to Back, Left to Right

- 1<sup>st</sup> Jim, K6SV (Congrats!), Baofeng Dual-band radio (Thanks Kristen for the donation!)
- 5<sup>th</sup> Joy, KM6IFL, 5 pc. plier set
- 7<sup>th</sup> Gerry, N6VN, (A day after his 80th birthday!), Pittsburg hex key set
- 2<sup>nd</sup> Truman, K6TRU, Ed Fong Tri-band antenna (Thanks Ed!)
- 4<sup>th</sup> John, KM6SKA, External 5.1 channel sound card
- 6<sup>th</sup> Frank AF0XX, Pittsburg screwdriver set
- 8<sup>th</sup> Ralph, KC6YDH, dead-blow hammer
- 3<sup>rd</sup> Herb, WY6G, External 5.1 channel sound card

## Palo Alto Amateur Radio Association, Inc.

PO Box 911 Menlo Park, CA 94026

### Officers

President .....	Kristen McIntyre, K6WX kristen@alum.mit.edu	510-703-4942
Vice President .....	Marty Wayne, W6NEV w6nev@arrl.net	408-234-8023
Secretary .....	Jim Thielemann, K6SV thielem@pacbell.net	408-839-6815
Treasurer .....	Ron Chester, W6AZ ron@taxhelp.com	408-243 2221

### Directors

Director ('18-'20) .....	Joel Wilhite, KD6W kd6w@arrl.net	408-839-5948
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@wawi.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	
Webmaster .....	John Miller K6MM webaron@gmail.com	
Technical Coordinator ...	Joel Wilhite, KD6W kd6w@arrl.net	408-839-5948
QSL Manager .....	Marty Wayne, W6NEV	408-234-8023
Speaker Coordinator .....	Marty Wayne, W6NEV	408-234-8023

### PAARAgaphs Staff

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	Ron Chester W6AZ	Vic Black AB6SO
	Joel Wilhite, KD6W	
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Member Profiles .....	Diana Lloyd, KK6YGM dianalloyd76@gmail.com	650-988-8882
Technical Tips .....	Vic Black, AB6SO ab6so@smrn.com	650-366 0636
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](mailto: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 1<sup>st</sup> 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](mailto:KD6W@ARRL.NET), 650-325-8239

## FARS — Foothills Amateur Radio Society

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

## NCDXC — Northern California DX Club

Meets 3<sup>rd</sup> 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 1<sup>st</sup> 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 3<sup>rd</sup> 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](mailto: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 2<sup>nd</sup> 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](mailto: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](mailto: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](mailto:shensley@Novell.com)

(Please send changes to [PAARAgaphs editor](mailto:PAARAgaphs editor))



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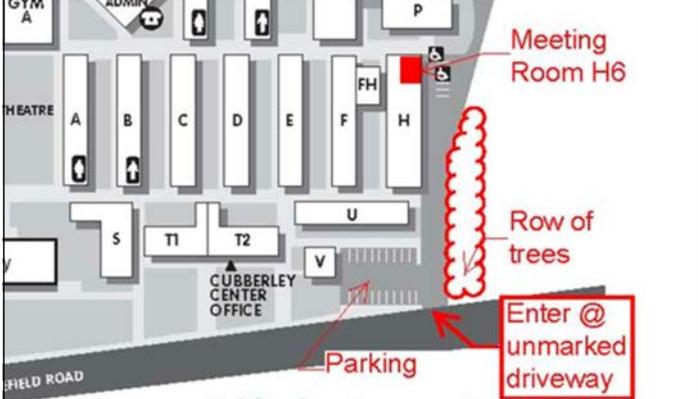
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## PAARA Weekly Radio Net

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

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

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



**Cubberley Community Center**  
 4000 Middlefield Road, Palo Alto, CA 94303  
 650/329.2418  
 650/856.8756 fax  
 www.cityofpaloalto.org

**Meeting Location — Middlefield Road  
 between San Antonio and Charleston in Palo  
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**Email: KARLDRESDEN@juno.com**

**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 PAARAgaphs  
 \$6 for each additional family member (no newsletter).  
 Make payment to the  
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**ARV'S, WA6UUT (SK)**  
**WEDNESDAY**  
**HAM RADIO**  
**LUNCHEON**  
 Our 11<sup>th</sup> year!  
 - Since May 2, 2007 -  
**BLACK BEAR DINER**  
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 Website: [www.blackbeardiner.com](http://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!

### 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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### PAARA W6OTX DMR Repeater Frequencies

144 – 144.9625 up 2.5 MHz	DMR—NOR CAL Brandmeister Network
440 – 444.475 up 5 MHz	DMR
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