

PAARAgraphs



The Official Newsletter of the

Palo Alto Amateur Radio Association, Inc.
Celebrating 85 years as an *active* amateur radio club—*Since 1937*

Pico-Ballooning and Ham Radio

Brian Basura, N6CVO

I will be discussing what Pico-Ballooning is and how it differs from other types of High Altitude Balloons (HAB's). I will also go over the basics of a complete balloon as launched as well as a number of common options. I will then talk about Ham Radio and the key role it plays in this hobby. Finally I'll finish up discussing our recent launches from QuartzFest in AZ.

I'm an Extra Class operator, Assistant DEC for ARES High Desert (LAX Section), VP of the Acton Agua-Dulce ARC and I work as a Hydro-electric Powerplant Technician. I also manage two Winlink Gateways and I am trustee for two local repeaters.

**This meeting will be a
Hybrid Meeting
Zoom and In Person**

Time: April 1, 2022 07:00 PM Pacific Time
Please check <https://www.paara.org> for
Zoom Details

President's Corner

April 2022

In case you haven't heard; the Electronics Flea Market will hold its first event in 2 years on April 9th at the Sunnyvale Public Library. The event will be hosted by the West Valley Amateur Radio Association. Directions to the new venue can be found here:



Upcoming Events

April 1*** May 6 June 3	PAARA General Meeting, 7:00 PM In-Person and Zoom Meeting ### Zoom & IRL Meeting
April 20 May 18 June 15	Board Meeting, 7:00 PM. Everyone welcome! Zoom Meeting, eMail President for details!
April 9	Electronic Flea Market

<http://www.electronicfleamarket.com/directions>.

The event will have the same format as before: Covid meaning there will be donuts, soft drinks, and coffee. Space cost and size have changed some so check out the website if you intend on selling.

PAARA is hosting the May 14th event. We need lots of members to help throughout the entire 5 AM~12 PM event. This is PAARA's major fund-raising event! This is your opportunity to help raise funds for your club and maybe even pick up a new treasure. You don't need to be there the entire time but some activities like selling food need overlapping schedules so they are staffed the entire time. Here's a shortlist of activities that need coverage:

- Costco run for drinks & supplies
- P/U trailer and generator from Doug's Friday and load stuff from ASVARO's locker & return after the event (tow vehicle is needed)
- P/U EFM stuff from their storage locker, Friday evening & Sat AM transport to site, return the stuff to the storage locker, assist the trailer driver to load & unload the trailer
- Early AM & later gatekeepers x4 about 3:30AM / 2 about 6AM
- Coffee urns & water, make 1st pot early Sat. AM & bring it to the site before 5 AM
- 4:30 AM food tent setup x3

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(President — Continued from page 1)

- Donuts, order & P/U Saturday 5 AM
- Food sales x4, all-day
- Kick venders out & Cleanup x2

Please email me at thielem@pacbell.net if you're interested in assisting on this important club event. Also note, the new EFM location is in a residential area. We need to be mindful of that and keep our noise down to a bare minimum before 8 AM. We could lose the permit if residents complain to the city.

If you recall last month's column, I attended Quartzfest and hung around AZ until the Yuma Hamvention. I managed to make some additional contacts despite some days and or nights of rather high winds which blew the base of my Bravo 7K over one night. If you haven't been to the Yuma Hamvention, it's an event that runs from Friday through Saturday at the local fairgrounds. Camping is permitted on the grounds from Thursday through Sunday at noon. This year they allowed campers to assemble in the parking lot between the grounds and the airport.

The Yuma airport is a little unusual as there is a Marine airbase there along with the International Airport. As it turns out, the parking lot is at the end of the main runway used by the Marine Core Air Station, which means LOTS of jets and other planes flying at times rather loudly overhead. When Joanne, K6YL, Randy, Joanne's BF, and myself arrived early on Wednesday, the flight pattern had the

planes landing over us. Let me tell you, an F35 landing in a vertical mode with the exhaust nozzle aiming down is REALLY LOUD! I measured them in the 110 to 115 dB range, A-weighted, at about 75' overhead. Thank goodness, there was a warning as the plane approached before it got very loud.



By 3 PM on Thursday we were set up and "camping" on the fairground's lawn. We all wandered around chatting with others who'd set up near us. Numerous people also attended Quartzfest thus turning into a bit of a reunion. The show doesn't open until noon on Friday. Before that, we could wander through the "garage sale" (like a flea market but they can't call it that due to selling restrictions) area as some of the sellers had set up their goods.

Fortunately, the wind turned around thus turning around the flight path of the jets. Generally, they weren't as loud taking off as they were when landing. Though consistently, the wingman, 2nd plane to take off, was much louder than the 1st as they were trying to catch up to the lead plane.

One of the landings late Thursday afternoon was very welcome.

Kristen, K6WX, got her airplane back from its annual inspection just in time to fly to Yuma. With big smiles, we got together on Friday morning. It was great to see her at one of her favorite Hamventions. Besides being there for fun, she gave a couple of wonderful presentations and as the ARRL's Pacific Division Director had a few meetings.



When at Quartzfest, I was challenged by the Northern Arizona DX club which hosted the DX competition to wear my winning hat during the Yuma show. I met the challenge of having it on throughout the entire event. Of note, the weather was wonderful during the entire event so I never needed the fan in the hat. The hat led to some fun comments as well as starting many enjoyable conversations. I even met a couple of past winners thanks to my hat. Though it was a little hard on the head after being on all day, it was worth it!

Pink, K7ILA, drove her tent trailer down for the show. Though we saw her at Quartzfest, it was wonderful to see her again and spend a bit more time visiting. She's been rather busy with all of her various activities. She committed to coming for Field Day assuming we can conduct the event.



Randy, Joanna's, K6YL, BF, was under the gun to take his technician's test. He studied himself silly preparing for the test. To his credit, he was asking LOTS of questions both related to the test content as well as amateur radio in general. I received a joyous text from Joanna on Saturday that Randy had passed his test. He now has the call sign KI6TUH. Now he's studying for the General test.

On Saturday, I was walking around through the ven-

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(President — Continued from page 2)

dors when a couple passed me. She said to him “it’s not going to mean an antenna on my house, is it?” He replies “it might.....”. I couldn’t help but stop and quietly laugh! I think he has his work cut out for him.

Yes, it’s true! Yuma has one of the best “Buzzard Dinners” around. It isn’t buzzard but BBQ’d pulled pork or chicken with all the fixings. It’s something that one shouldn’t miss if at all possible. At the end of the dinner, they have the largest raffle prize giveaway ever! There were no less than 16 major radios, 7 VHF/UHF, and 9 HF radios with the big grand prize being a Yeasu FTDX-101MP! Unfortunately, none of team PAARA won one of the wonderful rigs.

All told, everyone had a wonderful time during the Yuma Hamvention. It was much different being able to camp at the site of the Hamvention and mill around with others at day’s end. Yuma is smaller, more casual, and spread out than Pacificon but none the less enjoyable.

Once Yuma was over, it was time for the return trip. I did take it slow and had one stop in Redlands to have upgraded anti-sway bars and shocks installed on my Motorhome. Fortunately, the shop where I had the work done also has a small RV park where I was able to spend the night as the work wasn’t completed until rather late in the day. Unfortunately, spending that night in the park cost me an additional day as weather moved in during the night. Snow fell on the mountain passes closing them leaving me stuck in the LA basin. As the passes didn’t open until mid-afternoon and there were LOTS of vehicles stuck in the backup, I opted to spend another night there and leave early the next morning. The next day after 9 hours of driving and 36 days away from home, I returned. Though weary, I had a big smile on my face.

Where are your stories? I’m sure others of you have enjoyed experiences like I’ve written about in the last two issues. Or, have equally interesting adventures involving ham radio. I need something from you for the next issue(s) as I have nothing! Please submit your stories by the Friday after a board meeting. Thanks go to Andy, KR6DD, for getting his story in this issue completed just under the wire.

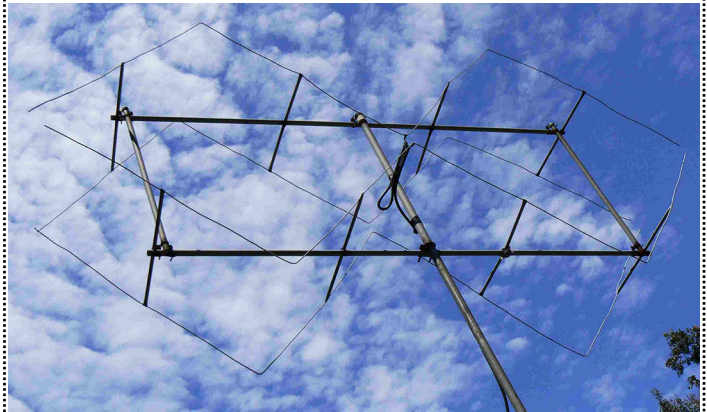
73, Jim K6SV

Get on the air to keep the airwaves alive!

4NC2 Software Model of a 16-Element Broadside Array

Andrew Korsak, KR6DD

I was donated a crazy looking 2m antenna by a ham who retired and left SRI in Menlo Park back around the late 60’s or early 70’s and moved to the east coast. Here is a picture of it.

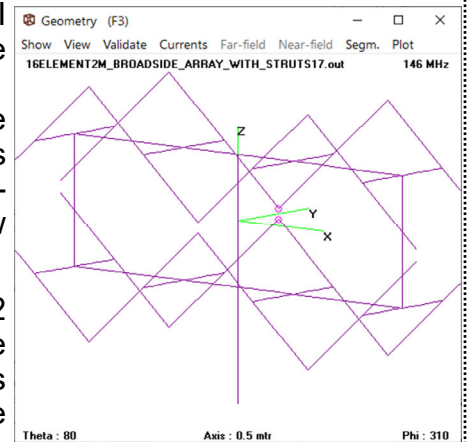


I gave this antenna to a ham in the north bay shortly after downsizing from my Emerald Hills home (just outside Redwood City limits in San Mateo county) to a 1br apartment in Mountain View in Aug 2016 where no antennas were allowed. One day recently I got the idea of simulating it using 4nec2 free download antenna modeling software I had used for modifying the March 2021 QST cover page “flag antenna” design (see my article about that:

<https://paara.org/newsletter/2022/graph0122.pdf>)

I recall that this antenna had great gain and a smooth roll off of signal received as it was rotated, without any deep nulls as one gets with a long Yagi, so I guessed at the dimensions looking at the picture. Here is a 4nec2 implementation view of its structure:

Running 4nec2 on this array the pattern looks nothing like what I ex-

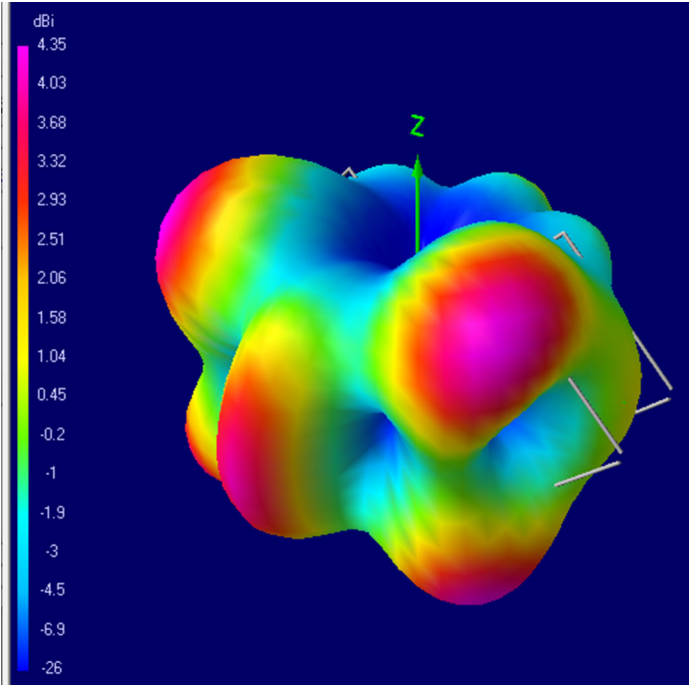


pected! I spent the last weeks playing around with parameters like element length, spacing

(Simulation — Continued on page 4)

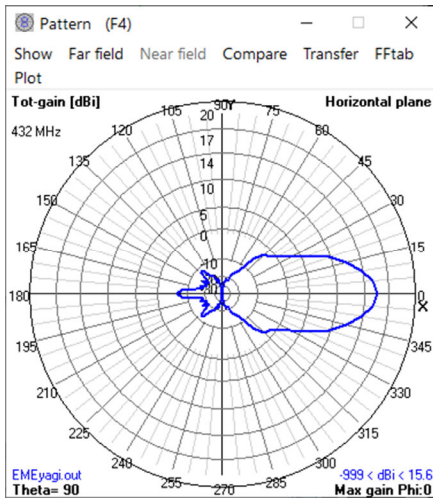
(Simulation — Continued from page 3)

between the two 8 element M-over-W shaped arrays, and small changes to the ratio of radiator to reflector size (or was it a director?). The 3D “jelly bean” pictures for various trial parameters looked absolutely horrible!

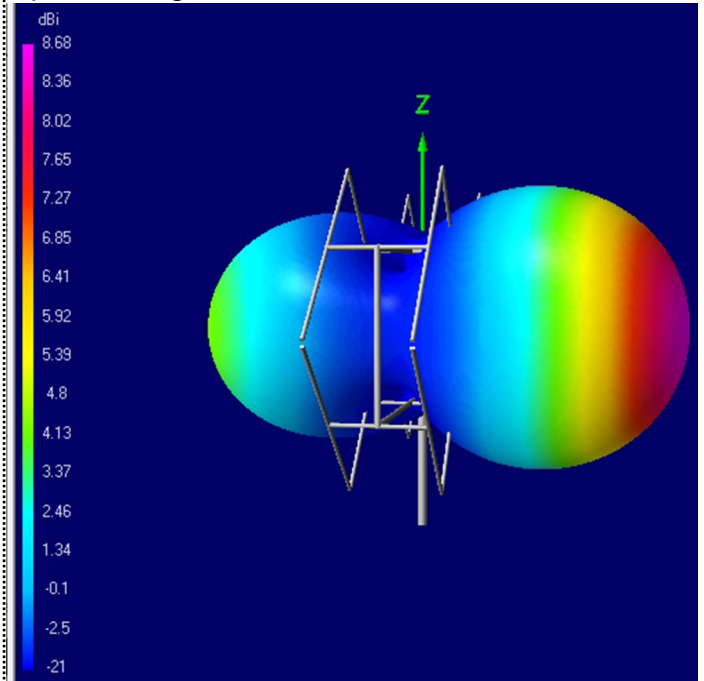


Oh well, maybe it had insulators at some of the junctions, and I was not going to waste any more time experimenting to see if one can arrive at a model having a nice “jelly bean” pattern like this for a VHF Yagi example that comes with the 4nec2 free download:

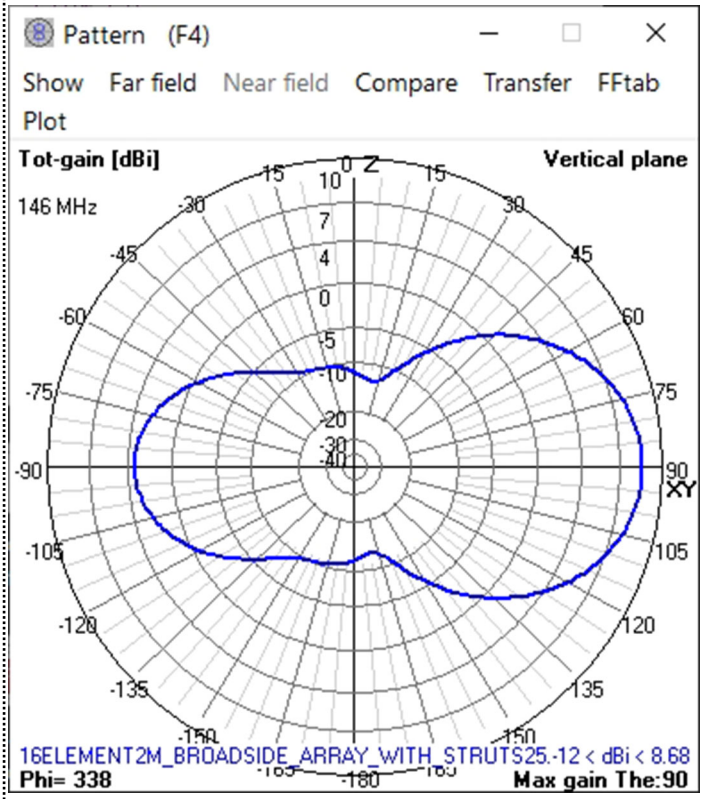
Well, I contacted Steve K6OIK for help, his being an expert in antenna design, modeling, and simulation. He has given numerous talks at Pacifcon, FARS, and PAARA on this subject and others like transmission line and antenna equivalent models. Steve pointed out my errors in wrong implementation of feed line and connections – 4nec2 software has a limited content help .rtf file and its normal type of html help file does not work under Windows10. Here



is a greatly improved pattern I got once I connected properly to the feed points and ran the optimizer again:



And the Polar Plot becomes:



3/16/22 Board Meeting Minutes

Attending: President Jim Thielemann K6SV, Vice President Rob Fenn KC6TYD, Secretary Ric Hulett N6AJS, Treasurer Bob Korte KD6KYT, Directors Doug Teter KG6LWE, Darryl Presley KI6LDM, Joel Wilhite KD6W. Clark Martin KK6ISP also attended. The meeting was called to order at 8:10. A quorum was present.

President's Report: Good news: The EFM (Electronic Flea Market) is happening! Bad news: The EFM is happening! The first market of 2022 will be held April 9. PAARA is sponsoring the second EFM on Saturday, May 14. This is a major source of income for PAARA. We need several club members to step up and assist with setup, selling spaces, food sales etc. Please contact Jim K6SV to volunteer.

Secretary's Report: Most club members have renewed for 2022. Those who have not renewed will not receive a newsletter in April. We welcomed Kieth Swaney K1OKS as our newest PAARA member.

Treasurer's Report: The club expenses have been as normal: We paid for newsletter printing, and the club's insurance. We have invoiced our advertisers for 2022, and most are current.

VP / Program Chair Report Guest speaker for April meeting is Brian Basura N6CVO. He will present on "Pico-Ballooning and Ham Radio".

Old Business

Members! We have an ongoing need for articles for PAARAgaphs! It's member content that makes our newsletter special. Please write up your ham activities or interests and submit to Jim K6SV. We are at the bottom of the barrel, so pitch in!

Education Committee, Rob KC6TYD: The March PAARAgaphs had a request for presenters or Elmers for ham Education topics. We need presenters to support this effort.

EFM update: The first Electronic Flea Market

for 2022 is on April 9, from 5:30 a.m. to Noon. There are quiet hours until 8:00 am. PAARA will sponsor the May 14 meeting. Cost to us is \$1,300 to host the event. We need PAARA members to attend the April 9th EFM, to scope out the operation and understand how PAARA should conduct the May meeting.

We had a discussion about how the new venue (Sunnyvale) will work out, as it is smaller than the Fry's lot.

PAARA repeater: Bob KD6KYT will check on payments for the repeater electricity bills.

Club-owned ham equipment: PAARA has acquired a significant amount of ham gear, mostly donated by families of SK members. Rob KC6TYD, Doug KG6LWE and Ric N6AJS have been building a catalog and setting prices. A few items will be retained for PAARA use, and the remainder will be offered for sale, first to PAARA members and later to the wider ham community. Shri KA6Q is developing a website to display the gear.

Jim Tiemstra's tower removal: Scheduled a club activity for March 19. This has been postponed due to the rain/wind on that day.

Field Day: We are waiting for word from the City of Menlo Park about whether we can get permits for Bedwell Bayfront Park.

April Club meeting: The board decided to hold an in-person PAARA meeting on April 1, with Zoom link available. We wish to move back to in-person meetings as long as the situation allows. The 'eyeball QSO' just can't be duplicated online.

New Business: The board discussed having an honorarium or token as a gift for our guest speakers. We could for instance furnish PAARA coffee cups or the like. Rob and Joel will investigate further

The meeting was adjourned at 8:53 pm.

Respectfully Submitted
Ric Hulett N6AJS
PAARA Secretary

Palo Alto Amateur Radio Association, Inc.

PO Box 911 Menlo Park, CA 94026

Officers

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	thielem@pacbell.net	
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	bob@rgktechsales.com	

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	kd6w@arrl.net	
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Director ('21).....	Doug Teter, KG6LWE	650-743-7892
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Director ('21).....	Darryl Presley, KI6LDM	650 255-2454
	ki6ldm@arrl.net	

Appointed Positions

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	energyconserved@sbcglobal.net	
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	K6RDM@yahoo.com	
Public Affairs	<i>Position Vacant</i>	
Station Trustee W6OTX, W6ARA....	Gerry Tucker, N6NV	
Station Trustee K6YQT..	Doug Teter, kg6lwe	650-743-7892
Station Trustee K6OTA...	Ron Chester, W6AZ	
Property Manager	Gerry Tucker, N6NV	
Badge Coordinator	Doug Teter, kg6lwe	650-743-7892
	dteter@wvci.com	
Historian Position	<i>Position Vacant</i>	
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	Shrikumar, KA6Q	
	shri.paara@enablery.org	
Field Day Coordinator ...	Doug Teter, kg6lwe	650-743-7892
ASVARO Rep.....	Clark Martin, KK6ISP	
	kk6isp@comcast.net	
Webmaster	John Miller K6MM	
	webaron@gmail.com	
Technical Coordinator ...	Joel Wilhite, KD6W	408-839-5948
	kd6w@arrl.net	
QSL Manager	Marty Wayne, W6NEV	408-234-8023
Speaker Coordinator	Rob Fenn, kc6tyd	650-888-9060

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Member Profiles	<i>Position Vacant</i>	
Technical Tips	Vic Black, AB6SO	650-366 0636
	ab6so@smrn.com	
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

50 MHz & Up Group

Meets 1st Thursday each month at 7pm in the Summit Room at the Sunnyvale Sports Basement, 1177 Kern Ave, Sunnyvale

Contact: <http://50MhzandUp.org>

San Mateo Radio Club W6UQ.ORG

Meets, 3rd Friday, January through November

Tuesdays, [Directed] Net, 7pm, N6ZX 145.370Hz -600KHz PL107.2Hz

Contact: <http://W6UQ.org/calendar>

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

(Please send changes to PAARAgaphs editor)

EXCESS SOLUTIONS

ELECTRONIC SURPLUS MEGA-STORE!

We have completed our move, you should visit to see the new store!

- ✦ That's right...Excess Solutions in San Jose recently lost the lease on their old site as the property was sold. We have moved to new premises very nearby at the far end of S. Seventh St., just before Tully Rd. It's easy to find!
- ✦ Techs, Developers, Experimenters, Hobbyists and Creators will once again have access to the basic electronic parts, hardware and infrastructure that Silicon Valley was built upon!
- ✦ Support your local surplus store...there are few left, and you know how much this vital Silicon Valley resource is needed!

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 Desolder Equipment - Test Equipment

Excess Solutions

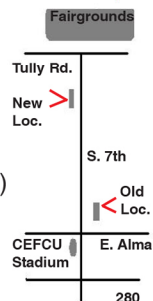
2070 S. Seventh St., Unit C
 San Jose, CA 95112

(Approx. 5 blocks down Seventh St. from old site!)

1-408-262-3900 --or-- visit us online!

Web: www.excesssolutions.com

eBay Stores: "excess-solutions"



Store Hours

Mon. - Thur. 8:00 - 6:00, Fri. 8:00 - 5:00, Sat. 10:00 - 3:00



This Ad space is available

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	John - W6JMK
3 rd	Ric - N6AJS
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, and lots o' fun! Give it a try.

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 Alto. 4000 Middlefield Road

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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
 Palo Alto Amateur Radio Association,
 P.O. Box 911, Menlo Park, CA 94026-0911

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ARV'S, WA6UUT (SK)
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HAM RADIO
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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
PAARAgaphs
 by the 3rd Wed to:
 rrvt@swde.com
 Text: .doc, .rtf,
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900 – 927.225 down 25 Mhz	On Line

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PAARAgaphs Ad Rates

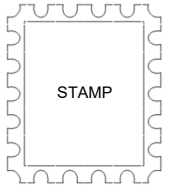
PAARAgaphs accepts paid advertisements from non-members. (short personal ads remain free for members in good standing). All ad rates listed are per issue.

- Not-for-profit ads by association members for ham-related items and wants. No cost for business card-size ads (additional space at \$2.50 per business card size per issue).
- 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 2022

Accept no substitutes. Produced and printed in California USA



Palo Alto Amateur Radio Association, Inc.
 PAARAgaphs Newsletter
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 • Hybrid SSB Configuration • Unparalleled 70 dB Max. Attenuation VC-Tune • New Generation Scope Display 30SSS • ABL (Active Band Indication) & MPVD (Multi-Purpose VFO Outer Dial) • PC Remote Control Software to Expand the Operating Range • Includes External Power With Matching Front Speaker



FT-891 | HF-50 MHz All Mode Mobile Transceiver
 Rugged construction in an ultra compact body • Stable 100 Watt Output with Efficient Dual Internal Fans • 32-Bit IF DSP Provides Effective and Optimized QRM Rejection • Large Dot Matrix LCD Display with Quick Spectrum Scope • USB Port Allows Connection to a PC with a Single Cable • CAT Control, PTT/RTTY Control



FTM-4000XD | 2W/40 Mobile
 • Color display-green, blue, orange, purple, gray • GPS/APRS • Packet 1200/9600 bit/sec • Spectrum scope • Bluetooth • MicroSD slot • 500 memory per band



FTDX10 | HF/50MHz 100 W SDR Transceiver
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 PHONE - Toll-free phone hours 9:30AM - 5:30PM
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FAX - All store locations
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