

W6OTX**W6ARA**PAARA NEWSLETTER
VOLUME 62, NUMBER 5, May 2012**K6OTA****K6YQT**

PAARAgraphs



The Official Newsletter of the

Palo Alto Amateur Radio Association, Inc.Celebrating 75 years as an *active* amateur radio club—*Since 1937*

California Near Space Project

Ron Meadows (K6RPT)**And****Don Ferguson (AI6RE)**

Ron Meadows (K6RPT) is the creator of the "California Near Space Project" and is the person who Leads, plans, and executes the balloon flights. He is assisted by his father Frank, his son Lee, and many other volunteers who assist with various parts of each balloon flight project. Ron and Don will talk about their experience and lessons learned from each flight leading up to, and including, the record breaking "Transcontinental, Transatlantic, International" balloon flight.

tronics Flea Market on April 14th. There is always a big effort that is put out by everyone involved, and we really appreciate all of the help. Without your help we would not be able to put on this important activity. While the Flea Market's role as a fund raiser has gone up and down over the years, the PAARA board has recently reaffirmed our belief that it is an important institution for the Amateur Radio community in the Bay Area. Attendance was down a bit for April, probably because of the stormy weather that preceded what turned out to be a cool, but quite pleasant Saturday for the event. There was a great selection of gear, and I picked up a few items for myself. I'm going to list the volunteers who helped out whom I wish to thank. If you don't see your name here, and you helped out, rest assured that I'm not intentionally forgetting you. It is merely and error on my part. Just let me know, and I will be sure to acknowledge you next month. Without further ado, let me thank Doug KG6LWE, Byron KG6UOB, Gerry N6NV, Mikey NE6RD, Seth KF6UZX, Rolf N6NFI, Don KE6CFX, Jim KI6KVV, Rob KI6INR, Carol W6GEM, Darryl KI6LDM, Doña KI6DAR, Clark KE6KXO, Tom KF6LWZ, Ron W6AZ, Marty W6NEV, Svend KF6EMB, Peter K6WEB, Dan KJ6SEE, and George N6NKT. Additional thanks go out to Mikel KN6QI and the rest of ASVARO.

President's Corner

May 2012

The PAARA sponsored ASVARO Flea Market is in the can, we're about to go to KSM / KPH, the Maker Faire is neigh, and it's almost time for Field Day. In the middle of all of this, we have our next big PAARA meeting on the 4th of May. It's a busy month for our club and for Amateur Radio.



First and foremost, I want to take a moment to thank everyone who helped out with the Elec-

As of this writing, we are just about a week away from our trip up to coast station KSM / KPH. By the time you read this, we may be

(Continued on page 2)

(Continued from page 1)

there or may even have completed the trip. All I can say is that I hope you'll be there. It's going to be a not-to-be-missed trip, and I plan to take lots of pictures that we can have for the PAARA archives. Perhaps I'll even take some video that we can show at the next meeting. If you miss the trip, I hope to fill you in at the beginning of next month.

Near the end of May, on the 19th and 20th, the Maker Faire will be coming to the Bay Area and the San Mateo County Event Center, and the Palo Alto Amateur Radio Association will be there. Mikey, NE6RD, is organizing a large group of participating Amateur Radio operators, and a booth with banners for our local clubs. We are making a new club banner to put on a great show for the event. PAARA members will be volunteering to man the booth, and some will be providing some of their Arduino based projects for demonstration. I will also be speaking there, so look for me on the schedule. The Maker Faire is always an interesting event where you can see incredible creativity on display. For more information go to <http://makerfaire.com>. I hope we'll see you there.

After the Maker Faire, Field Day 2012 will be right around the corner. We have a special pre-FD warmup PAARA meeting planned, and we still have some aluminum polishing to do. Doug, KG6LWE, our Field Day coordinator can always use some extra help, so please contact him to help out. There are plenty of other FD tasks to do if you're not into polishing aluminum. We just signed up Jake, K6MP, to be our bonus points captain, and David, K16ZHD, to be our network engineer, and I'm sure both of them could use your help. Please give them a hand, or at the very least, tell them thank you for stepping up to the job. Thanks guys.

73 ES CU AT PAARA DE K6WX.

May Raffle Prizes

1st — LDG Z-100 Plus Antenna Tuner



2nd — Alpha Delta Coax Switch



3rd — Watt / Volt Meter with Powerpole Connectors



4th — Two West Mountain COM Speakers

5th — Lite Flare / Operates 400 Hours with Two AA Batteries

6th — Two PL-259 Coax Connectors

7th — Bongo Ties / Cable Organizers

Palo Alto Amateur Radio Association, Inc.

PO Box 911 Menlo Park, CA 94026

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 kristen@alum.mit.edu
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 Public Affairs..... *Position Vacant*
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 bob@rgktechsales.com
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 HistorianPosition..... *Position Vacant*
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 ab6so@smrn.com
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 jdsinger@sbcglobal.net

Future PARRA Meeting Dates

June 1st, July 6th, Aug 3rd

VE Exams

3rd Saturday each month, 10:30AM, 145.23- PL=100Hz
 Redwood City Main Library, Community Conference Room
 1044 Middlefield Road, Redwood City, CA
 Contact: <http://amateur-radio.org> or 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-October, 6am-2pm
 Howard M. Krawetz, N6HM 650-856-9761
 Contact: <http://www.electronicfleamarket.com/>

PAARA — Palo Alto Amateur Radio Association

Meets 1st Friday 7:00pm each month at Menlo Park Rec. 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.k6va.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

NorCalQRP — Northern California QRP Club

Meets 1st Sunday each month
 Contact: <http://www.norcalqrp.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 City Hall, 2nd floor, 1 Twin Pines Lane,
 Belmont. 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, 442.425+ (pl 107.2) Thur.
 Meets 2nd Mon each month @ 7:30 PM.
 Contact: <http://www.qsl.net/sccara> or Clark Murphy KE6KXO 408-262-9334
 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: 441.35 (+5.0) 88.5 ctcss
 147.39 (+600) 151.4 ctcss 223.96 (+1.6) 156.7 ctcss 1286.20 (-12m) 100.0 ctcss
 Meetings are 3rd Wednesday of every month.
 Contact: <http://wvara.org>, Bill Ashby N6FFC, 408-267-3118, N6FFC@Juno.com, or
N6FFC@ARRL.NET

**American Red Cross,
 Santa Clara Valley Chapter**

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

(Please send changes to PAARAgaphs editor)

Geiger-Track

Geiger counter + APRS + Data-logging

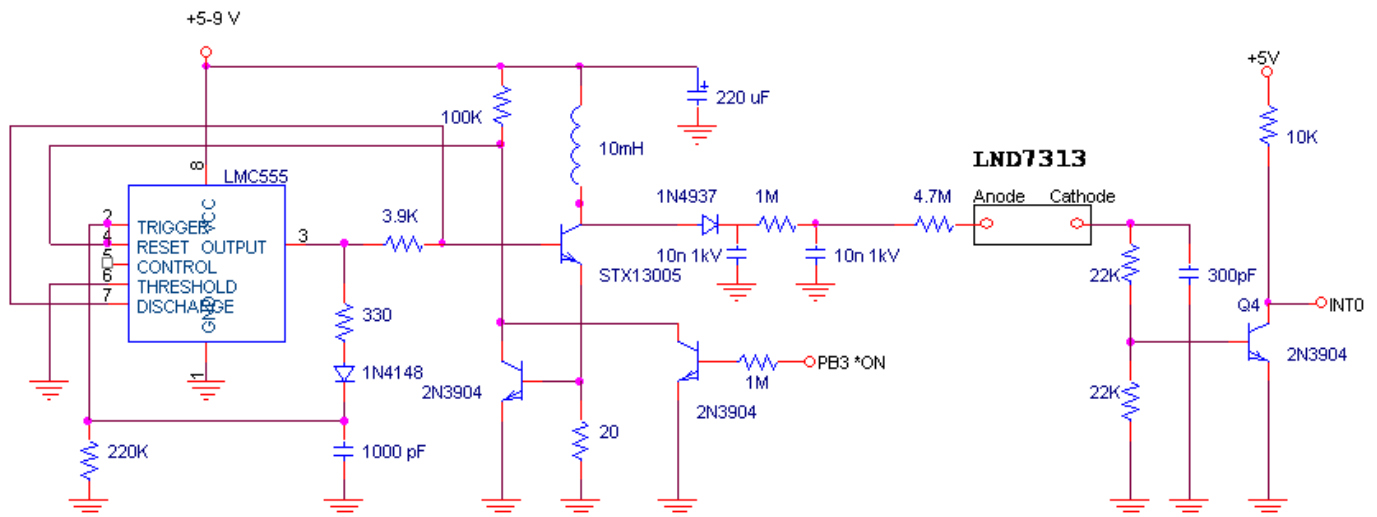
Nimit - K6XOX

Feature:-

- SBM-20 Tube Beta & Gamma
- GPS , Measuring value over APRS similar to WX Track
- Data-logging in CSV format via RS-232 level for PC.

Design:-

- *uP* ATmega328 Arduino Boot loader (Open Source under GPL)
- AX.25 library for APRS telemetry
- CMOS 555 for HV 400VDC circuit for TUBE SBM-20 - The quintessential Russian tube. Lower priced, and more sensitive to beta and gamma than most. *This is still my favorite all around beta gamma tube.*



HV schematic for GM-20 or LND-712 Tube

The original circuit for the HV section was published in Nuts & Volts, January 2004, by Tom Napier. (Many thanks to him.)

Introduction:-

The first idea came up after the unfortunate earthquake and tsunami struck Japan in March 2011 causes the nuclear radiation leakages in Fukushima and then people want to measure the levels of radiation in their location everyday and to be able to measure radiation levels and send out the position with radiation level value via APRS. We can put this system in many location install with solar-cell and monitor via <http://aprs.fi>

(Continued on page 5)

(Continued from page 4)

I would want to explain more on my project but I am not the physic engineer and I just read from the internet and see how it will work then I did capture the part of APRS and Geiger counter then combine them together, I can't believe that possible because after I read many article online and many project try to point to the modem chip MX614 which hard to find or costly \$9 per chip and my idea want to create with open source Arduino with ATMEGA328 which cost me \$3 per chip and do everything.

System block diagram:



For the block diagram,

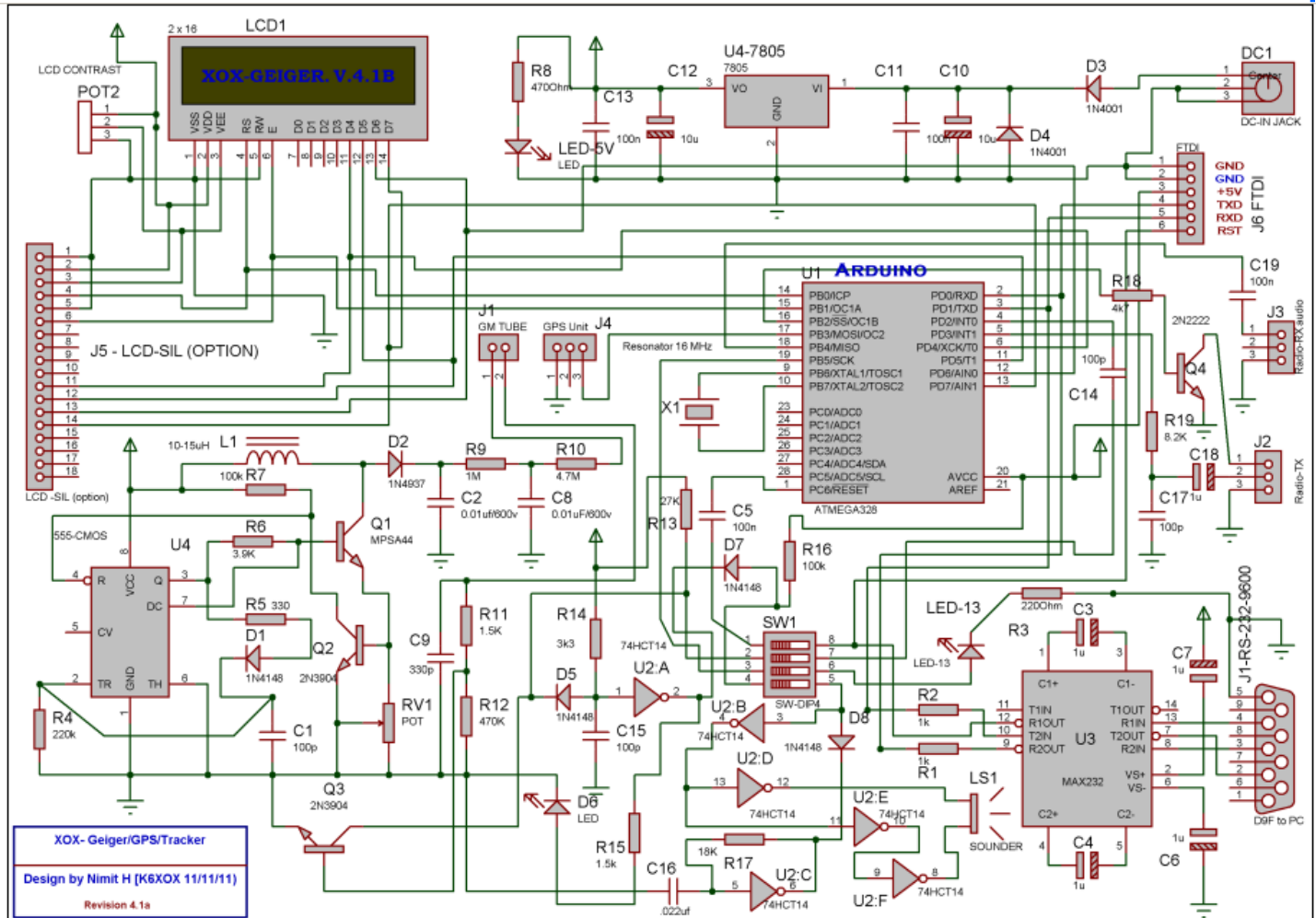
Geiger unit which done by CMOS Timer 555 created the HV 400VDC to tube SBM-20 and then send pulse to INT0 of the Arduino chip for CPM (Count Per Min) (many thank the Code from [John Giametti](#)) then Display the result with the output to serial port for data logging and also send to APRS routine and using one of the digital pin of Arduino for soft-serial port to receive GPS NMEA format.

Most of the project done by software such as AX25.c (many Thank you for [Kyle Crockett](#)) APRS which is very simple that can be apply to many applications in the future, I was so excite to use for APRS security in the future that we have our Ham radio network that we can use. Ha ha , I will reveal my project in the next time. I can't stop thinking how useful of the open source which open my eye for the new project after project.

For the Code of this project please email me then I will send to you by email. With ZIP file. I am working on the PCB design for Universal APRS for many projects also included with this project as the all in one PCB and then we can select and program in what we need to apply APRS for our everyday project.

(Continued on page 6)

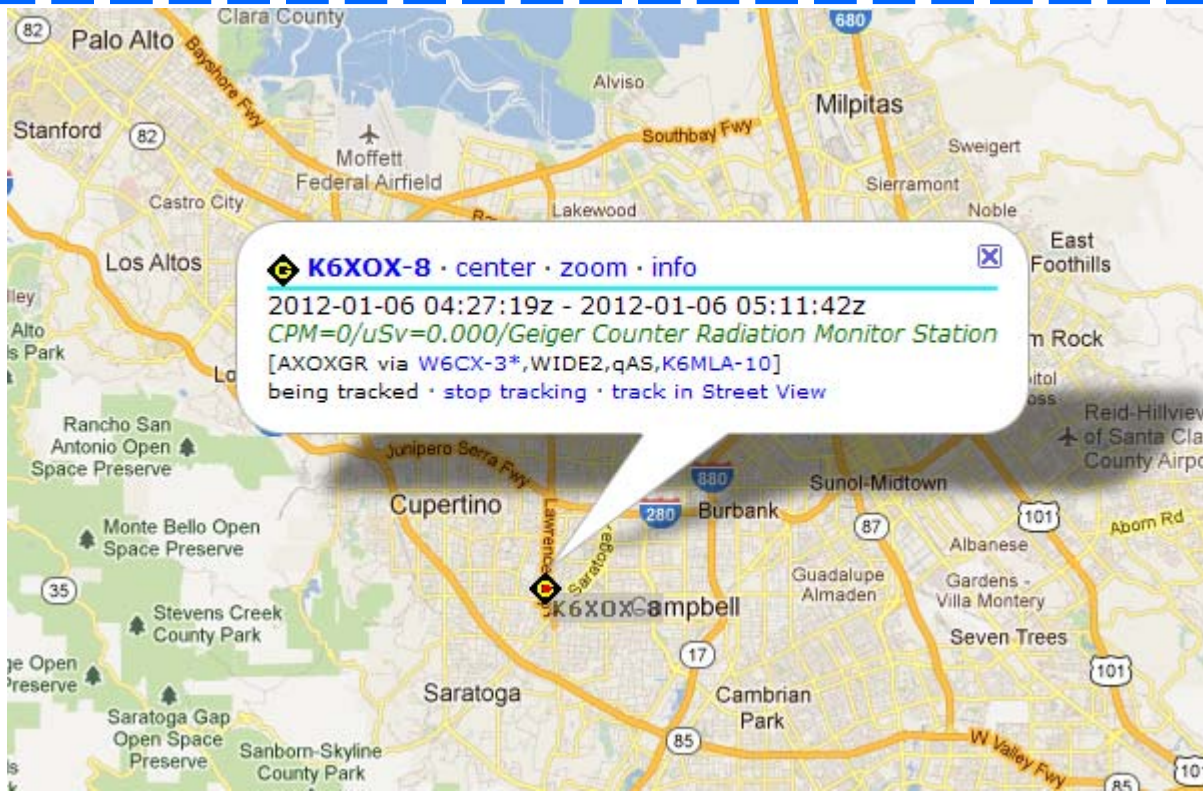
(Continued from page 5)



List of Credit with permission to contribute and publish under GPL:-

1. Geiger Counter Kit, original idea and base code for CPM/Usv logging routine came from **John Giametti** <johngiametti@gmail.com> in his website and his kit <https://sites.google.com/site/diygeigercounter/>
2. Trackuino project, Library for APRS (AX.25) which I used in part of my project came from his Trackuino for balloon project. **Kyle Crockett** <kaipyroami@gmail.com> <http://code.google.com/p/trackuino/>





2012-01-06 04:26:55 UTC: **K6XOX-8**>AXOXGR,W6CX-3*,WIDE2,qAS,K6MLA-10;/04265123717.74N/12159.86W&/CPM=0/uSv=0.000/Geiger Counter Radiation Monitor Station
 2012-01-06 04:27:10 UTC: **K6XOX-8**>AXOXGR,N6ZX-3*,WIDE2*,qAR,W6PKT-5;/04270623717.75N/12159.84W&/CPM=0/uSv=0.000/Geiger Counter Radiation Monitor Station
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April Raffle Winners

From Left to right

- Rick K6RDM — clip-on toroids,
- Josh KJ6PVN — Pocket Reference,
- Emily KJ6SBS — Yagi Antenna,
- Harry AI4Zi — Maker Faire Tickets,
- German KI6YRD — FRS Radios,
- John K6JK — USB Digital Interface,
- Pat W6ABA — Repeater Directory



18 April 2012 PAARA Board Meeting Minutes

The Board Meeting was held at the Palo Alto Red Cross building, commencing at 7:40 PM on the 21st of March, 2012. Attending were Kristen McIntyre K6WX (Pres), Marty Wayne W6NEV (Vice Pres), Rick Melrose K6RDM (Sec, Database), Ron Chester W6AZ (Treas), Rob Riley KI6INR (Dir), Byron Beck KG6UOB (Dir), Larry Rebarchik N6DB (Dir), Darryl Presley KI6LDM (Dir), and Doug Teter KG6LWE (Field Day Coordinator). A quorum was present.

President's Report: Kristen K6WX reported that the talk by Eric Norse featured at our April 6th general meeting speaking about his magnetic loop antenna designs, was unique and educational for many who were somewhat unfamiliar with the type. Kristen talked a bit about some interesting content being arranged for inclusion in future issues of PAARAgaphs and again reminded our readers that we want to encourage others to contribute content regarding operation, home brew projects, historical or technical topics for our monthly newsletter.

Secretary's Report: Rick K6RDM reports that the minutes of the 21st of March Board meeting had been previously submitted and approved. There were 4 renewals this month and 2 new members at the April 6th meeting. Kristen asked for an email list of club members who have not yet renewed, as mailing labels on the March issue of PAARAgaphs were marked to indicate that this was the last issue to be distributed to members who had not yet renewed, and they might yet appreciate a reminder in order to be included in the club roster to come.

Treasurer's Report: Ron W6AZ presented an analysis of receipts from the club's sponsorship of the ASVARO Electronics Flea Market. Our sponsorship this April 14th just past, following as it did on the heels of a huge rainstorm which no doubt kept away a number of both sellers and buyers, was nevertheless sufficiently well attended to produce better than average receipts.

Vice President's Report: Marty W6NEV reported on the lineup of speakers scheduled for our general meetings through November of this

year. Marty reported that 44 of the 56 seats for our PAARAtrip to KPH, the restored ex-RCA coast station at the Point Reyes National Seashore, have been sold. That leaves a mere 12 open seats at this writing. They are sure to go fast so anyone interested in making the trip should not put off signing up. More information about KPH is available at the website of the Maritime Radio Historical Society (MRHS), <http://www.radiomarine.org/>. As mentioned previously, the date is set for April 28th, and club membership is not required for participation. The price is \$40 per attendee, which will include transportation and lunch at the site. We'll be departing the Menlo Park Recreation Center at 8 AM and returning at about 6 PM. Any questions can be directed to Marty via email at <W6NEV@arrl.net>. Checks should be made payable to "PAARA" and may be mailed to Marty at the address on our PAARA.org website, or handed to Marty at a club meeting.

Doug Teter KG6LWE, our Field Day Coordinator, will be holding a second planning meeting with our Field Day crew to schedule projects for this year's Field Day including making improvements to our antenna setups. Band captains are also scheduling operators at our various stations. Interested operators and people willing to work on projects should contact Doug at <dteter@wciwi.com>.

The meeting was adjourned at 9:00 PM.

There were two new members at the April meeting:

Jorge Llacer	KE6MDN	San Jose
Emily Stemmerich	KJ6SBS	San Mateo

New Badges

Walt	KJ6RNS	Cupertino
Josh	KJ6PVN	Castro Valley
Jorge	KE6MDN	San Jose
Nimit	K6XOX	San Jose
Doyle	KG6YUN	
Bud	N6SN	
Xiande	KJ4SGT	

Plus others that have appeared in previous PAARAgaphs

A Few Pictures from the 4/12 PAARA Flea Market

Setup in O'Dark-Hundred



Anyone need a Donut?




Need an oscilloscope? It Works!



Or a new Rig?





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 Sales Manager

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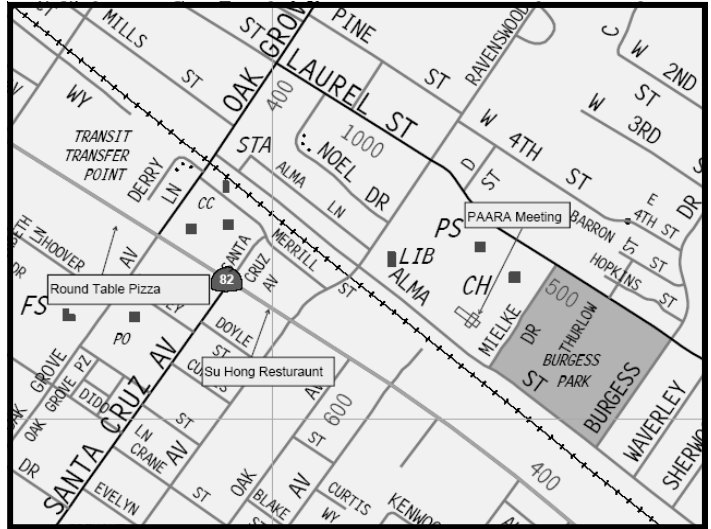
Badges are ready for pickup.

If you would like to order a badge, see
Lynn Gentry, KG6JPV.

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

<u>Week</u>	<u>Control Operator</u>
1 st	Michael - N6MEB
2 nd	Doug - KG6LWE
3 rd	Jack - N1VSL
4 th	Marty - W6NEV
5 th	Up for Grabs!

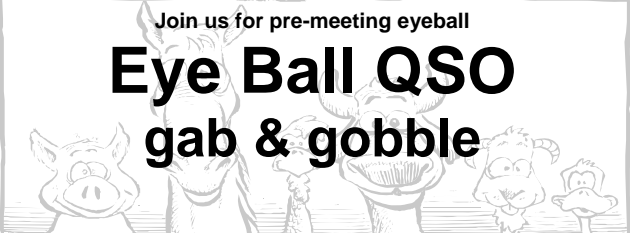
If you're interested in trying out at Net Control, Contact Doug, KG6LWE. It's good practice, and lots o' fun! Give it a try.



Directions to PAARA meeting:
<http://paara.org/meetings/>

Join us for pre-meeting eyeball

Eye Ball QSO gab & gobble



Food will be served at 6:00 sharp, so guests will be on time for the PAARA meeting. Those arriving late will be responsible for their own food order.

5:30 pm—at Su Hong Restaurant
 1039 El Camino Real
 Menlo Park

*across from Kepler's Book Store
 on El Camino Real
 Walking distance from Caltrain!*

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 Menlo Park Rec Center, 700 Alma Street, Menlo Park, CA.

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

Membership in PAARA is \$20.00 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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Radio
Technology
Day**

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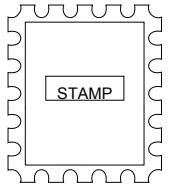
1. Not-for-profit ads by association members for ham-related items and wants. No cost for business card-size ads (additional space at \$2.50 per business card size per issue).
2. For Profit organizations and/or individuals: \$5-business card size, \$25-half page, \$50 full page or back cover per issue.

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 Ron Chester, W6AZ

PAARAgaphs — May 2012

Accept no substitutes. Produced and printed in California USA



Palo Alto Amateur Radio Association, Inc.
 PAARAgaphs Newsletter
 P.O. Box 911
 Menlo Park, California 94026

FIRST CLASS MAIL

ANHEIM, CA
 (Near Disneyland)
 5531 N. Central St., 92801
 (800) 554-6046
 Mark, W7YU, Mgr.
radio@hamradio.com

BIRBAK, CA
 1525 W. Memorial Blvd., 94106
 (800) 942-7788
 (877) 892-1748
 Eric, K8EJC, Mgr.
 1525 W. Memorial Blvd., 94106
birbak@hamradio.com

OAKLAND, CA
 2210 Livingston St., 94606
 (510) 594-5757
 (877) 892-1745
 Mark, W7YU, Mgr.
 1880 W. 23rd Ave. ramp
 Oakland, CA 94612
radio@hamradio.com

SAN DIEGO, CA
 5275 Kearny Villa Rd., 92123
 (602) 592-4900
 (877) 1328-8093
 Hwy. 153 & Carrington Mesa
 San Diego, CA 92123
sandiego@hamradio.com

SUNNYVALE, CA
 510 Lawrence Exp. #102, 94085
 (408) 736-9496
 (877) 892-1749
 Jon, K6WV, Mgr.
 Sunnyvale, CA 94085
www.hamradio.com

NEW CASTLE, DE
 (Near Philadelphia)
 1500 Quaker Hwy., 19720
 (800) 942-7788
 (800) 544-4175
 Chuck, W1UC, Mgr.
 RT1314 Rt. 50, 1295
ncastle@hamradio.com

PORTLAND, OR
 11705 S. W. Pacific Hwy.
 97223
 (503) 598-6556
 (800) 544-4175
 Hwy. 171 & 15th
 From Hwy. 5 & 217
portland@hamradio.com

DENVER, CO
 8400 E. Hill Ave. #3, 80231
 (303) 746-7273
 (800) 444-9176
 1500 S. Downing
 Denver, Colorado 80231
denver@hamradio.com

PHOENIX, AZ
 1681 St. 43rd Ave. 80729
 (602) 242-3616
 (800) 559-8938
 Scott, N1S, Mgr.
 Phoenix, AZ 80729
phoenix@hamradio.com

ATLANTA, GA
 6770, 285-0700, 30340
 (800) 444-7927
 Mark, K4UO, Mgr.
 Dunwoody, 1 mi. no. of 1206
atlanta@hamradio.com

WOODBRIDGE, VA
 (Near Washington D.C.)
 1403 Dual Agency Dr. 22191
 (800) 444-4709
 Steve, W4SH6, Mgr.
 1403 Dual Agency Dr. 22191
woodbridge@hamradio.com

SALEM, NH
 224 N. Broadway, 00709
 (603) 888-2791
 (800) 444-8017
 224 N. Broadway, 00709
salem@hamradio.com

12 STORE BUYING POWER



TS-2000 HF/VEHICLE TUNE
 • 100W HF 8M, 2M • 50W 70CM
 • 100W 1.2 GHz motor DT-20 module
 • 15-pin D25 connector
 • Check W1UC, Mgr.
 RT1314 Rt. 50, 1295
ncastle@hamradio.com
Call Now For Special Price!



TH-5FA
 • Dual Channel Receiver
 • 12.5KHz Channel Spacing
 • 10W AM, SSB
 • SW/20W/20W/40 TX, PM
 • 435 Memories
 • Lithium Battery
Call For Low Price!



TM-D71DA 2M/440 Dualband
 • 50W 2M & 11W
 • Optional Voice synthesizer
 • 100 memories • Dual receive
 • Advanced APRS features
 • 1000 channels
 • Built-in TNC • S9+ Commercial II+
 • GPS 100 Post
 • Choice of Over/Under CO bandlight
Call Now For Special Introductory Price!



COAST TO COAST
 FREE SHIPPING
 UPS - Most items free S/H
 Royal Distributors From
 The Store nearest to You!



YAESU
 50W 40/20/15W/10W/5W
 2m/70cm w/ built-in GPS (V-CAD)
 • 50W 14.1MHz V-CAD (only)
 • 50W 14.1MHz V-CAD (only)
 • 31.30 mms
 • waterproof/dimmersible
 • GPS/APRS operation optional
 • 1000 memories
 • Lithium recharge battery
 • 200 mms • 200 mms • 200 mms
 • 200 mms • 200 mms • 200 mms
Call For Low Price!



OAKLAND, CA
 2210 Livingston St., 94606
 (510) 594-5757
 (877) 892-1745
 Mark, W7YU, Mgr.
 1-880 at 23rd Ave. ramp
 oakland@hamradio.com



REMOTE RIG
 The set of inter-pass allows remote control of your remote rig. You can monitor from a user-friendly and easy-to-use rig.
 Remotely gives you control of the radio coupled with crystal clear TX & RX audio and sending QW with your own paddle!
 Works with all Computer-compatible radios from: **Alinco - Elecraft - ICOM - Kenwood - Yaesu**
For remotely controllable hand packs for 2X remote/rig:
 TS-4000CAT, TS-2000, RC-2000, HTD1, IC-7000plus, IC-706 series, DX-3900T, IC-2000H, IC-2950



DL-67T 2m/440/1.2 Transceiver
 • Full duplex carry two bands
 • 100 memories
 • 100 memories
 • Hi-capacity Lithium battery
 • 1000 Memories
Low Pricing!



DR-135TP 2M mobile
 • 50 Watt out • Alpha numeric display
 • 100 memories • Built-in TNC 7000 & 9500 Band
 • Remote Paddle GPS in • Rear B5+ 9.5V
 • 1000 Memories • Encoded/decoded dual in
Low Pricing!



FT-897D
 Use compact HF, VHF, UHF
 • 100W HF/50W 2M, 20W UHF
 • DSP included • 2K color display
 • 200 memories • 200 memories
Call For Low Price!



FT-2000 HF + 60W 10W
 • 100W w/ auto tuner
 • Built-in Power supply
 • DSP included • 2K color display
 • 200 memories • 200 memories
Call Now For Low Pricing!