

# SCOPE

A newsletter by and for the  
Palomar Amateur Radio Club  
of San Diego, California.



## Special Club Event OPERATING DAY APRIL 18, 2010

### DOUBLE PEAK PARK

900 Double Peak Drive  
San Marcos  
9:00 AM to 5:00 PM

Hosted by  
PALOMAR AMATEUR RADIO CLUB  
[www.palomararc.org](http://www.palomararc.org)

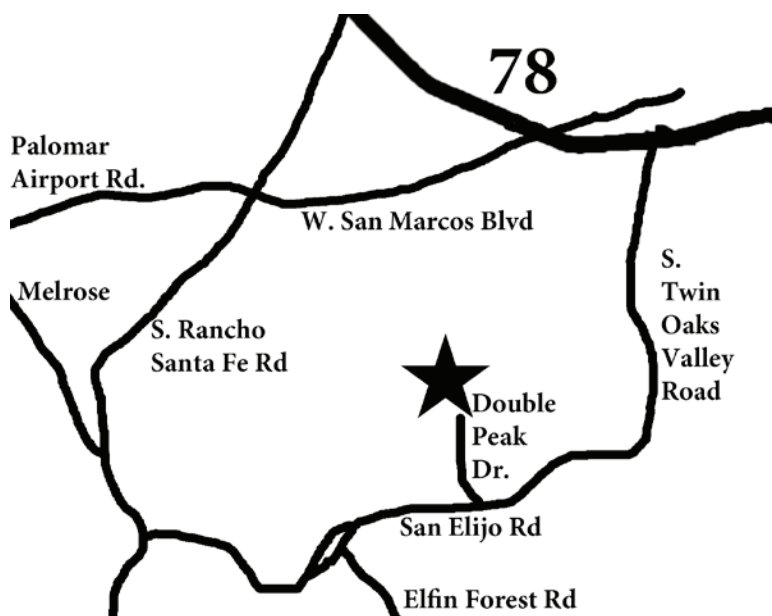
Contact Ron K2RP (760) 436-8109

Come operate on the ham bands  
at the park above it all during  
"Rookie Roundup" weekend.

Sweeping 360° views.  
Picnic area and basic facilities.

Cecil, WD6FZA will demonstrate D\*STAR

70cm, 2m, 6m, 10m, 15m, 20m



## Save the Date

### Club Meeting 7 April 2010

"Contesting 101" Program  
at 7:30pm.

Ears Auction 8 April 2010

### Board Meeting 14 April 2010

Palomar Amateur Radio  
Club board meeting at  
7:00pm at K2RP QTH

### AV4DX Meeting April 24, 2010

North Sentinel Island  
DXpedition Meeting  
3:00pm Carmel Valley  
Recreational Center

## Membership

New Members Joining PARC since Feb 11, 2010 - - - 0 - - - None, Zip!!

However, Five past members reinstated their membership. Of course we welcome all members, new and "old", especially "new" old timers.

Please check your SCOPE label for your renewal date. If you are receiving the SCOPE by Web, please remember your renewal date, or drop by the membership table at the meetings to find out your renewal time. As a memory jogger, we are publishing the calls of the SCOPE by WEB folks as a reminder to please - please renew.

COME ON GUYS and GALS - Look at this list of non or late renewals from members (In Feb and March only). KI6JEX, W6MBM, NO8RF, K6DAF, K6ROY, K6PPG, K6BK, AF6IS, AF6UL, KI6LKP, AA6PC, and KI6FOO. The club cannot exist for the next 70 years if this doesn't improve!! P.O. Box 73 awaits you!

Al, W6GNI

### **PALOMAR ENGINEERS**

**Box 462222, Escondido, CA 92046**

#### **TOROID CORES**

Palomar stocks a wide variety of cores and beads. Our RFI Tip Sheet is free on request.

Our RFI kit keeps RF out of your telephones, TVs, stereo, etc. **Model RFI-4 \$35 +tax+\$8 to ship.**

#### **BALUN KITS**

Ferrites slip over coax. Shrink tubing holds them in place. Works from 3.5-60 MHz (Use two kits for 160m).

**Model BA-58** (for RG58, RG8X & similar cables up to 1/4" dia.) \$8.50+tax+\$8 S&H/order

**Model BA-8** (for RG-8, RG-213, 9913 and similar cables up to 1/2" dia.) \$16.50+tax+\$8 S&H/order.

See catalog at [www.Palomar-Engineers.com](http://www.Palomar-Engineers.com)

Please check our complete ads in **QST**, **CQ**, and **WorldRadio** magazines.

Fold and Staple - PARC SCOPE fold-'n-staple party for the March Scope was busted by police for excessive noise. "We were just having fun," claimed Terri N6UZH. March Issue Fold & Staple Crew KB6NMK Jo, WA5ACE Sonny, KB6YHZ Art & Janet, W6GNI Al & Kathy, KI6LAV Georgia & Florence

Greetings to all members and readers of the Scope! I'm happy to present another issue of the club newsletter.

A special announcement is in order - the Escondido Amateur Radio Society annual auction is April 8th. Please see their website for details at

<http://www.earsclub.org/>

There is a rumor going around that this issue of the Scope has some foolishness. I would like to take this opportunity to squash that rumor into the little tiny bug parts that it would resemble, if it were, say, some sort of funny insect.

There are absolutely, positively, no "funnies" in this issue of the Scope. We take our job here at Scope Headquarters very seriously. We have zero sense of humor. None. Zip. Nada. Null. Not even the slightest bit.

We eat our vegetables. We do our homework. We do not engage in "funny business", nor do we tolerate any of that on the part of our august and entirely reasonable (and boring) staff of expert amateur radio writers.

Please send questions, comments, and articles (funny ideas welcome) to [Scope@palomararc.org](mailto:Scope@palomararc.org)

Yours, -Michelle W5NYV

<h1>HAM RADIO OUTLET</h1> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> H R O </div> <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 10px;"> Jose XE2SJB Jerry N5MCJ </div>	<b>KENWOOD</b> <i>rf</i> <b>CONCEPTS</b> <b>DIAMOND</b> <b>US TOWERS</b> <b>KANTRONICS</b> <b>YAESU, MFJ, ICOM</b> <b>BENCHER, Inc.</b> <b>HUSTLER</b> <b>COMET</b> <b>AMERITRON</b>	<b>Astron,</b> <b>AEA,</b> <b>OUTBACKER</b> <b>Larsen Antennas</b> <b>TEN-TEC</b> <b>Hy-gain, Tri-EX,</b> <b>Cushcraft And Others</b> <i>too</i> <b>Numerous to</b> <b>Mention!</b>	Drop in to see our display of working equipment. Find out about Pkt location determining equipment (APRS). Check our complete line of magazines, ARRL books, license manuals, and Bulletin Board with all sorts of Goodies listed.
Open: 10a.m. – 5:30p.m. Monday thru Saturday <i>Ask about our great prices</i> 858 560-4900 or toll free 1-800-854-6046	<b>Directions:</b> On 163, take <b>Clairemont Mesa Blvd.</b> off ramp to East. Stay in right-hand lane. Turn right at stoplight. As you are turning right you can see our beams in this shopping center. Travel 100 yds. On Kearny Villa Rd. and U-turn back to shopping area and HRO sign. Be sure to see our equipment in action on <b>real</b> antennas!		

## For Sale

Have items that need to find a new home? Advertise here! Send your ads to [scope@palomararc.org](mailto:scope@palomararc.org)

Classified ads are free for members of the club.

**For Sale:** HUSTLER 6BTV High Performance HF Verticle Antenna system, 80/75/40/30/20/15/10 m, complete with 250ft spool 14 ga wire and all precut radials, SS Tilt base and SS Radial plate. Used one year. Bought new at \$400, will sell for \$200. contact: Rich Ortloff KE6DUG 760-861-1406

## For Reasonable Donation To The Club

The following items are offered.

Swan 500 HF Transceiver with Power Supply, cables, and manual. Works well, but meter sticky. Needs cleaning.

Kenwood TS 520 HF Transceiver. Internal Power supply. Power cable, mike. No manual (available for download on internet.) Works well in the top 200-500 kHz segment of band, unstable from 0-200. Needs thorough cleaning of VFO. Can be used as-is for most of phone portion. Contact [board@palomararc.org](mailto:board@palomararc.org)

There will be lots of smaller goodies on the table next meeting.

**For Sale:** Multiband rotatable Vertical antenna. When attached to a suitable rotor this antenna is able to instantaneously move in such a way to offer equal gain in any direction you like. This antenna stands only 8 feet and yet works from 30m down to 160m. Amazingly the gain on 160M is a whopping -128dB! The rotor acts as virtual radials so installation is a breeze. Please contact NN1APR, A.R. Foolery if interested.

# New Morse Code Well Received in PARC

by Robert Freeburn

PARC members enjoyed the Club's first training session on the New Morse Code which will be phased-in beginning with selected ARRL CW contests in April 2010. In a departure from the Old Morse Code's two-length tone format ("di-dah"), the New Morse Code adds a middle-length tone to feature tones of three lengths ("di-dee-dah").

By using three tones, the New Morse Code eliminates the need for five-tone numbers and punctuation, and is compatible with the Arabic Morse code heard often on DX bands.

Another significant advantage is that New Morse



Photo by Wallie The Frog,  
from his collection at <http://www.flickr.com/photos/walliethefrog/>

Code can be used to rapidly exchange coded solutions to Rubik's Cube puzzles. The three tones correspond to the three-by-three arrangement of the puzzle. When the cube is held with the correct polarity, and the code is properly copied, then the cube can be solved.

Depending on the initial arrangement of the puzzle, the solution can take only hours to solve (depending on propagation, of course).

## Upcoming General Meeting Topics

April 2010 Dennis N6KI John K6AM "Introduction to Contesting"

May 2010 Ed Zeranski KG6UTS Military radios

June 2010 "Field Day"

Month TBD - Lin Robertson KJ6EF - Vintage broadcast radios

Month TBD David Doan KC6YSO "AM and other boat anchors"

Month TBD - AK6QJ - Subject TBD

# First Place for RACES San Diego Wins Major Award

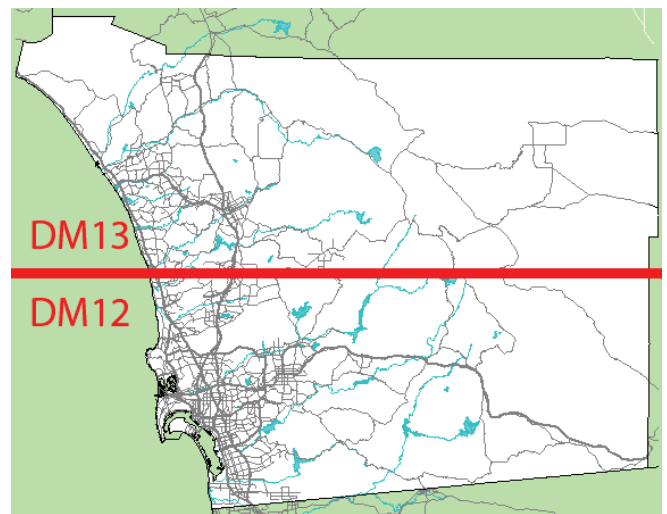
by Robert Freeburn

San Diego's Radio Amateur Civil Emergency Service (RACES) bagpipe marching band won first place trophies for music, marching precision, and QSL point total at the Angus MacDonald Memorial Western Regional Championship held in Pleasanton, CA last month. According to Bandleader Andrew Campbell, the greatest challenge was overcoming intermodulation interference during close-order formation drills. Assistant Bandleader Katie Graham extends her thanks to PARC members who helped model antenna radiation patterns from bagpipe radio rigs. Says Katie, "With minor marching formation, drone, and transmitter phase adjustments, we witnessed 9 dB improvement in the direction of travel."

## Ham-on-Ham Violence Rising

by Robert Freeburn

The San Diego Regional Gang Task Force is investigating increased ham-on-ham violence reported in Central San Diego County along the Maidenhead DM12-DM13 demarcation line which runs east-west through Encinitas, Poway, and Borrego Springs.



Tensions between rival DM12 and DM13 gangs increased after SANDARC-moderated talks held at Ham Radio Outlet (HRO) deep in DM12 territory on Sunday, February 14 broke down. Talks were cordial for several hours despite haughty DM13 representatives claiming superior, uptown status based on the number 13 being larger and closer to the date of the talks: 14. Talks were shattered when someone looked at a calendar and realized it was Valentine's Day, and no one present had yet taken care of his XYL.



# February Board of Directors Meeting Minutes

The meeting was called to order at 7:13 PM by President Dennis Baca KD6TUJ. The meeting was held at the home of Ron Pollack K2RP. Present at the meeting were:

President Dennis Baca KD6TUJ  
Vice President Ron Pollack K2RP  
Secretary Gary Kent W6GDK  
Director #1 Paul Williamson KB5MU  
Director #2 Conrad Lara KG6JEI  
Membership Al Donlevy W6GNI  
Scope Editor Michelle Thompson W5NYV

**Treasurer's Report** The treasurer's report was given by KD6TUJ in KI6LAV's absence. Total assets were \$11,886.22, Total Liabilities are \$5,369.00. Motion to approve by K2RP, second by KB5MU. Approved

**Secretary's Report-** Minutes of the January meeting were presented by W6GDK. Motion to approve by W6GNI, second by K2RP. Approved

**General Meeting:** PA0RYL will give a program on the Dwingeloo 75 foot dish in the Netherlands that is used for EME.

**Membership Report:** Presented by Al W6GNI – 292 members currently.

**Repeater Site/Technical Report:** Mike K6MRP resigned as repeater site chairman. The site appears to be in good shape after the weather in January.

**Discussion items:**

Program ideas include a program on military radios, Introduction to Contesting. Additional ideas to be developed are antenna modeling and doing broadband with a wireless router.

**ATV proposal.** It was discussed that we should retain our current coordination for ATV frequencies.

**Tube Bank** – Ron is picking up a garage full of tubes. Should the tube bank spreadsheet be on the Website?

**Field Day** Still need a FD chairman, and looking for sites, particularly in the I5 region.

**OLD Business:**

**NEW Business:**

K2RP noted that we have gotten 3 estates in the last 2 weeks with a total of \$350.00 committed by

potential buyers.

**HF Intro.** It was decided to hold the HF introduction at a San Marcos Park (Double Peak Park) on April 18th . We will setup a tower and generator and have HF Demonstrations.

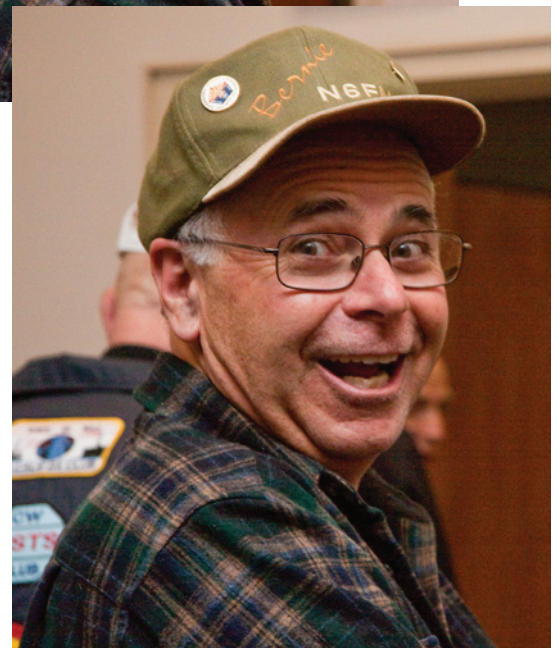
N6KI wants a 30 year old HamIV and is willing to pay \$200.00 We informally agreed to this arrangement

**Place of next Board Meeting:** Home of Ron Pollack K2RP on March 10, 2010 at 7:00 PM

**Motion to adjourn** at 8:45PM by W6GDK, second by KG6JEI. Approved



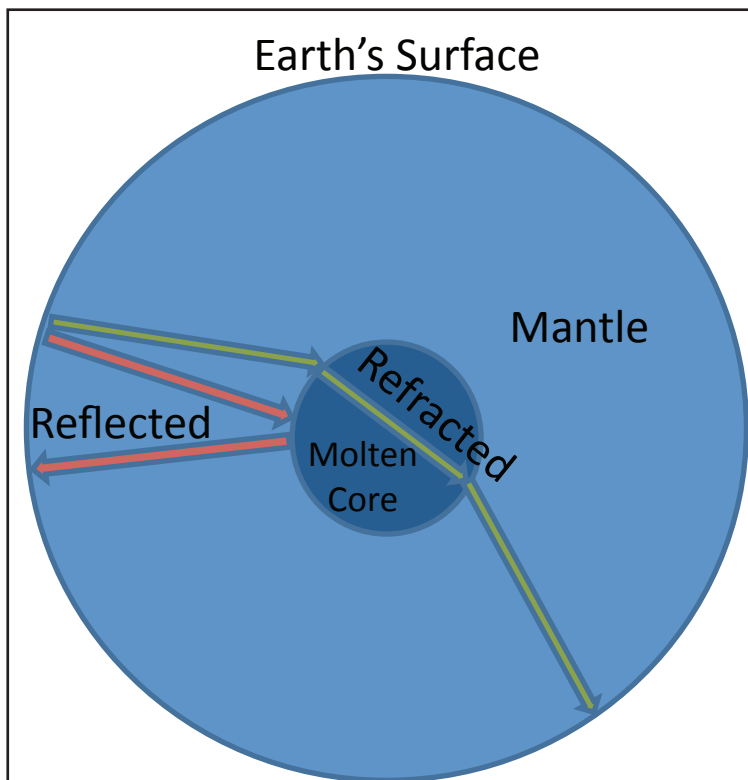
*Bernie N6FN  
at the March  
PARC meeting.  
Photo by  
KB5MU.*



# EMC Communications

Rob Freeburn KI6PGI, Paul KB5MU

Have you tried EMC propagation yet? It's the ideal mode if your homeowners' association won't let you use an above-ground antenna. EMC stands for Earth's Molten Core; EMC propagation takes advantage of the highly-conductive iron core at the center of our planet. As shown in the figure below, there are two main EMC modes available.



EMC-Reflected, also known as NVIU (near vertical incidence underground wave), relies on reflection from the core and is best for relatively local communications, within your own tectonic zone. EMC-Refracted, also known as "shortcut path", refracts your signal through the core and is best for DX. Propagation prediction software is available now for CP/M and iPad.

The photo shows the installation of an experimental EMC antenna. Because of the need to match the antenna's radiation resistance to the impedance of the earth's crust, EMC antennas must be buried underground. A common trick is to remove a large tree and couple the EMC antenna to its root system. If possible, choose a tree that has been struck by lightning. This can increase underground radiation efficiency dramatically at little additional cost, since the tree must be removed anyway. In this area, where both trees and lightning are in short supply, an alternative approach is being tested based on water-well drilling techniques. Preliminary results are encouraging, but

the heavy equipment required does tend to upset the neighbors.

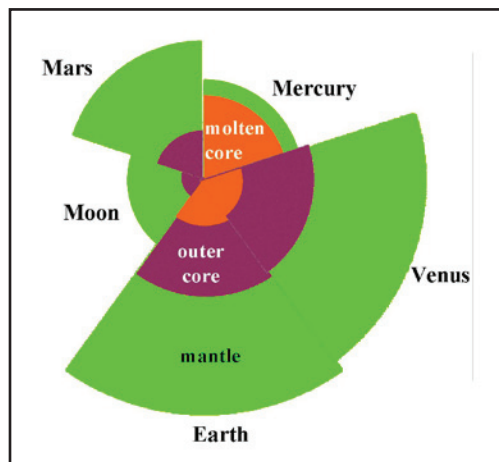
EMC propagation prediction software is available for download and beta testing. The software relies upon a combination of whale song identification techniques and a series of databases from dowers. The combination accurately predicts EMC propagation successfully 73% of the time.

The FCC is considering opening new EMC experimental bands for Amateurs.

The IARU is currently discussing a tectonic plate based overlay for dividing EMC zones. It's expected that these zones would provide the basis for an entire new system of contesting.

Our April program will introduce the basics of contesting. While EMC is considered an advanced technique, and won't be discussed during the program, we'll be paying close attention to this new mode for future contesting and PARC programs.

Finally, as can be seen in the diagram below, the moon does not have a molten core. This means that EME enthusiasts, contrary to popular belief, will not be able to duplicate the EMC mode with their large installations.



# Smart Meter at KB5MU

by Paul KB5MU

On March 8, SDG&E dropped by my home in Carmel Valley and replaced my old mechanical electric meter with a new "smart meter" -- a microprocessor-based device capable of reporting its measurements remotely, by radio.

This type of meter has been accused of causing radio interference on VHF and UHF frequencies, so my first thought was to check it for spurious emissions. I grabbed my Yaesu VX-8R handheld and held its antenna up against the front face of the meter while scanning through the 2m, 1.25m, and 70cm bands. I recorded the S-meter reading at each frequency where the signal was strong enough to break squelch.

144.000	1■■■■5
145.145	1
145.750	1
146.550	1■■■■
146.800	1■■■■5■■■■9+
147.050	1■■■■5
147.450	1■■■■
222.040	1
440.150	1■■■■5■■■■9
440.405	1■■■■5■■■■9+
440.655	1
442.010	1■■■■5■■■■9+
442.360	1■■■■5■
444.345	1■■■■5■■■■9
444.595	1■■■■5■■■■9
444.850	1■■■■5■■■■
448.540	1■■■■5■■■■9
448.790	1■■■■5■■■■9+
449.045	1■■■■5■■■■

Remember, these measurements are taken with

the antenna right up against the meter, so even a relatively high S-meter reading might not signify any practical problem. I tuned to the strongest signal, on 448.790 MHz, and walked away from the meter until the signal was too weak to break squelch. The range was about 20 feet. This is still a pretty weak signal, not likely to cause any real harmful interference.

According to the FCC filings, this smart meter contains two complete radio systems. One works in the 900 MHz band in either on-off-keyed (OOK) or frequency-shift-keyed (FSK) mode, frequency-hopped. This is a two-way link that will be used to connect the meter back to SDG&E. The other radio complies with the ZigBee standard for very low-power (1 milliwatt), short-range, direct-sequence spread spectrum OQPSK communications in the 2.4 GHz band. According to the manufacturer's literature, the ZigBee radio is intended to "provide a built-in communications pathway to the home for data presentation, load control and demand response." In addition, the meter has an ANSI Type 2 Optical Port, a two-way infrared interface for local meter reading. Last but not least, it has a nice multifunction LCD that cycles through displays of various measurements. In the photo, the LCD is shown with all segments active, presumably to allow the technician to diagnose display failures. SDG&E's door hang tag says, "Eventually we'll be able to read your energy usage information remotely but for now, an SDG&E meter reader will continue to read your meter." This would seem to mean that the radio capabilities of the smart meters have yet to be activated. The VHF and UHF emissions I detected may be coming from local oscillators in the dormant radio equipment, or (perhaps more likely) from harmonics of clock oscillators in the digital microprocessor circuitry. If this smart meter is typical, it doesn't look like we need to worry too much about this kind of continuous unintentional radiation. When SDG&E graces your house with a smart meter, it might be a good idea to test yours, too. It's always possible that some meters will be noisier than others. It will also be very interesting to see what happens when SDG&E finally activates all that radio equipment all over town.

I also learned something about how my 18"-long multiband whip antenna works on the various bands, in the near field. On 2m the maximum sensitivity is near the tip of the antenna. On 70cm, the maximum sensitivity is about a third of the way up the whip, just below where the whip narrows down slightly. This makes perfect sense if the antenna is working as a quarter wave on each band.



# Ron's Restoration Radio

## So I got (or found!) this old tube type radio. What do I do now?

by Ron K2RP

During the past number of years, I've been fortunate enough to acquire a number of "boatanchor" transmitters, receivers, and transceivers from the vacuum tube era. There are loads of them in existence, and I'm often asked for advice on what to do when one of these turns up. Here are a few general tips. I assume that some basic test equipment is available.

First, and by far foremost, for those who have never worked on tube type equipment, keep this in mind:

HIGH VOLTAGES ARE PRESENT  
THROUGHOUT THESE UNITS.  
THESE VOLTAGES ARE OF A PO-  
TENTIALLY LETHAL LEVEL!

More on how to deal with this later, but keep it in mind every minute while you're working on a live piece of equipment.

When you get your new treasure home, examine it to see what you have, and note any obvious missing tubes, knobs or other parts. See if there are any obvious modifications. I like to photograph the unit with a digital camera from all angles. WARNING: Don't plug it in and turn it on! Irreparable damage may be done. Of course, if you know for sure that this piece of equipment has been in recent use, you may want to try. I still do some basic tests. More later.

Next, see if there are any manuals, schematics, calibration charts, or other documentation available. If not, there are several sources for these.

The easiest and least expensive (read that "free") source is on the internet. The BAMA (Boat Anchor Manual Archive) site is sometimes hard to use, but the "mirror" site is

<http://bama.edebris.com/manuals/>

which is "user friendly." There are thousands of manuals available for download.

If yours is not listed, there are a number of private companies who offer reprints of manuals for sale at reasonable prices. Some that I have used are Radio Reprints ([radioreprints.com](http://radioreprints.com)) and Vintage Manuals, Inc ([vintagemanuals.com](http://vintagemanuals.com)). There are

always dozens of original and repro manuals available on eBay, as well.

Heathkit manuals have become a category of their own, however. The original Heath Company is still in existence, although not in the electronics business. They recently sold their archive of manuals, with, ostensibly, the copyrights to them, to a company in Pleasanton. They notified BAMA and others of their objection to posting the manuals on the internet. There is a lot of discussion whether or not they had the right to do that, but since BAMA is maintained on a university website, all Heath manuals have been withdrawn. Vintage Manuals still offers many of these, and I believe there are out of country websites that do as well. Heath manuals are plentiful on eBay, as well.

In any case, before I begin digging into a piece of equipment, I always try hard to get some documentation. Another good idea is to go to the "Members only" part of ARRL (I assume we're all members!) and check the QST archives for articles on your new acquisition. You'll find some helpful ideas, and maybe the details of modifications that have been done.

Next, I perform a thorough cleaning. A stiff brush and small vacuum cleaner can get rid of the loose dirt. I'll go over the outside with some "Simple Green" or similar. Once the manual is in hand, check to see if there are any parts missing or modifications done.

Now it's time to test the tubes, and replace any that are weak or dead. Get out your ohmmeter and check that the line cord is not shorted to ground. Measure across the prongs of the line cord to make sure that there is an open circuit with the power switch off, and some continuity with the switch on. Typically, the ohmmeter will show the resistance of the primary of the power transformer, which will range from a few ohms to a few hundred. If the circuit is still open with the switch closed, check the fuse.

The next critical item is the condition of the filter capacitors in the power supply. After many years of non-use, these can become "deformed." They may act as a dead short, and can destroy the power transformer quickly. The safest way to avoid this is to replace them routinely. Fortunately, they are inexpensive and easy to obtain. Mouser Electronics, Antique Electronic Supply, and Just Radios all have a wide selection of modern replacements. Many people also replace the electrolytics found in audio stages and elsewhere. However, if your goal is to keep the unit as original as possible, the caps can quite often be "re-



formed." This requires removing them from the circuit. One they're out of the radio, check them on an ohmmeter using a high range, observing polarity. A good, or potentially reformable cap will show an immediate near short, with the resistance rising quickly into the several hundred thousand ohm range. This does not mean that the cap is good; it only means it isn't shorted. If the resistance doesn't climb, then the cap is shorted and cannot be saved. Don't throw it away yet, though. There are "purists" who will hollow out the old cap and stuff the much smaller modern ones inside to preserve appearance. I'm not one of those!

The reason that the ohmmeter test doesn't guarantee that the cap is good is that the ohmmeter uses only a few volts. The capacitor may be fine for 3 volts, but in tube type equipment, they usually need to sustain several hundred volts. For a good discussion of the process, see

[http://www.angelfire.com/electronic/funwithtubes/Restore\\_cap.html](http://www.angelfire.com/electronic/funwithtubes/Restore_cap.html).

The only disagreement I have with this article is that they claim that caps can be reformed while in circuit. There can be cases where shorted caps are in the circuit that will prevent the restorable caps from reforming. I suggest removing them. I don't recommend the method using the equipment itself!

Using the Heathkit or other capacitor checkers works just fine, with one caution. The eye tube in the tester opens when leakage falls below the current needed to keep the eye closed. In some high capacitance, high voltage caps, the allowable or normal current is greater than that required to close the eye, so it will always indicate a leaky capacitor. There is a formula in the instruction book that will calculate the allowable leakage current. When working with one of these types, put a VOM on the current range in series with the capacitor to measure leakage current. Just be sure to start on a high range on your meter each time voltage is increased! There are also nice capacitor checkers that have actual meters built in to monitor voltage and leakage current. I have one made by Sprague called a Tel-Ohmike. If you see one for sale, grab it!

Now it's time to test the tubes, and replace any that are weak or dead. Take out only one tube at a time! The tube type is frequently worn off the tube, so if you have a bunch of them on the bench, you may not get them back in the same socket! While they're out, use some contact cleaner to clean the socket, and some emery

paper to burnish the pins. Check the manual or tube chart to make sure the tubes were in the right spot to start with! Get out your ohmmeter and check that the line cord is not shorted to ground. Measure across the prongs of the line cord to make sure that there is an open circuit with the power switch off, and some continuity with the switch on. Typically, the ohmmeter will show the resistance of the primary of the power transformer, which will range from a few ohms to a few hundred. If the circuit is still open with the switch closed, check the fuse.

Use spray contact cleaner on the controls and switches, and De-Oxit on Q tips on the switch wafers.

More next month!

## Public Service Event Tour de Cure

by [stovergeorge@mac.com](mailto:stovergeorge@mac.com)

The 447.000 MHz repeater will be put to good use on April 17, 2010. That is the day of the San Diego Tour de Cure sponsored by the American Diabetes Association fund raising bicycle event for the cure of Diabetes. Currently there are 600 plus bicycle riders signed up for this event.

The Motorcycling Amateur Radio Club (MARC) will be using 447.000 Repeater for the command and control frequency for this event. MARC will set up a control center early that morning at the start/finish line at Mira Costa College Cardiff Campus. Radio/APRS equipped motorcycles will use this control center to report back too, both Voice communications and position. Because of the motorcycle agility to mingle in with the riders, makes it the perfect tool to relay live status of bicyclist progress through the courses. Tour de Cure event leaders at the start/finish now have a live account of how the event is progressing via MARC control center. MARC motorcycles will cover all four courses, 10, 30, 70 and the 100-mile through out North County. The motorcycles also carry limited supplies such as bicycle tubes, pumps, tools, candy and drinks to support the riders. Motorcycles will also report emergencies, downed bicycles, missing course signs and conditions so that action can be taken. At the end of the day, MARC can identify the last rider and help identify missing riders so the event can close knowing that all riders are accounted for. MARC thanks the Palomar ARC for the use of the 447.00 MHz repeater so that we could provide this all-volunteer support for this important cause.

# Next ARDF event at Griffith Park on April 10

The next southern California on-foot transmitter hunting event will be Saturday, April 10, 2010 in the Mineral Wells area of Griffith Park in Los Angeles.

A ham radio license and knowledge of radio equipment are not required. Experts will be on hand to teach you the basic techniques of on-foot radio direction-finding (RDF). Also expect to see some folks training to compete in the 2010 USA ARDF Championships that will be in Ohio on the third weekend of May.

If you are a beginner, there will be entry-level two-meter fox transmitters just for you, set by Joe Moell K0OV. For more experienced radio-orientees, there will be a 5-fox two-meter international rules course of moderate difficulty, set by Marvin Johnston KE6HTS. An optional 80-meter fox transmitter may also be on the air.

If you don't have the antenna/attenuator system for on-foot foxhunting on two meters with your ham radio handi-talkie or scanner, you can easily make one during this session. Marvin Johnston KE6HTS will conduct a clinic for building his kits for measuring-tape yagis and for 90 dB offset-type attenuators. An assembled/tested attenuator in a special housing that goes inside the boom of the yagi is also available. Please register in advance by sending e-mail to [marvin@west.net](mailto:marvin@west.net), so he will have the kits reserved in your name waiting for you.

It takes about an hour to put the kits together with tools and soldering irons that will be provided. If you're not an electronic technician, don't worry because there will be plenty of experts to help you. We want you to succeed! Then with your HT and the kitbuilt equipment, you will be all set to hunt.

Kitbuilding starts promptly at 10 AM, followed by the beginner hunt. The main 5-fox hunt will commence at 10 AM also. Hunters may start out on the courses at any time until 1 PM. Courses close at 3 PM.

For the advanced 2-meter course, orienteering

flags and electronic scoring will be used at each transmitter. If you have an "e-stick," be sure to bring it. Please donate \$5 for the advanced course to cover expenses related to the use of Los Angeles Orienteering Club's e-punch equipment and maps. No donation is requested for the beginner course and the 80-meter transmitter hunt.

If you have them, bring a handi-talkie, receiver, or scanner covering the two-meter band for each person who will be going ARDFing. If you have directional antennas, attenuators, or other on-foot RDF equipment, be sure to bring that too. Make sure that all batteries are fresh. For those with no radio gear, some extra ARDF receiver/antenna sets will be available. Be sure to bring anything you'll need while going after those radio foxes, such as munchies, bottled water and sunscreen. For map plotting, bring your own compass, protractor and pencil.

Trails are primitive in some areas of the park, so wear sturdy shoes. All ages are welcome, but young children must be accompanied by an adult at all times.

From the 134 freeway eastbound or westbound, take the Forest Lawn Drive exit and go south. Turn left into park area on Zoo Drive towards Travel Town. At the entrance to Travel Town, turn right (south) onto Griffith Park Drive and follow it straight past Mt. Hollywood Drive (gated) on right and then a quarry on the left. You will soon see the picnic grounds (starting area)

on your right. If you see the driving range, you have gone too far.

From I-5 northbound, exit at "Griffith Park." Turn right (north) on Crystal Springs Drive and continue past the Ranger station on your right and the large picnic areas on your left. At the stop, turn left on Griffith Park Drive and head past the golf clubhouse and driving range to the Mineral Wells picnic area on your left.

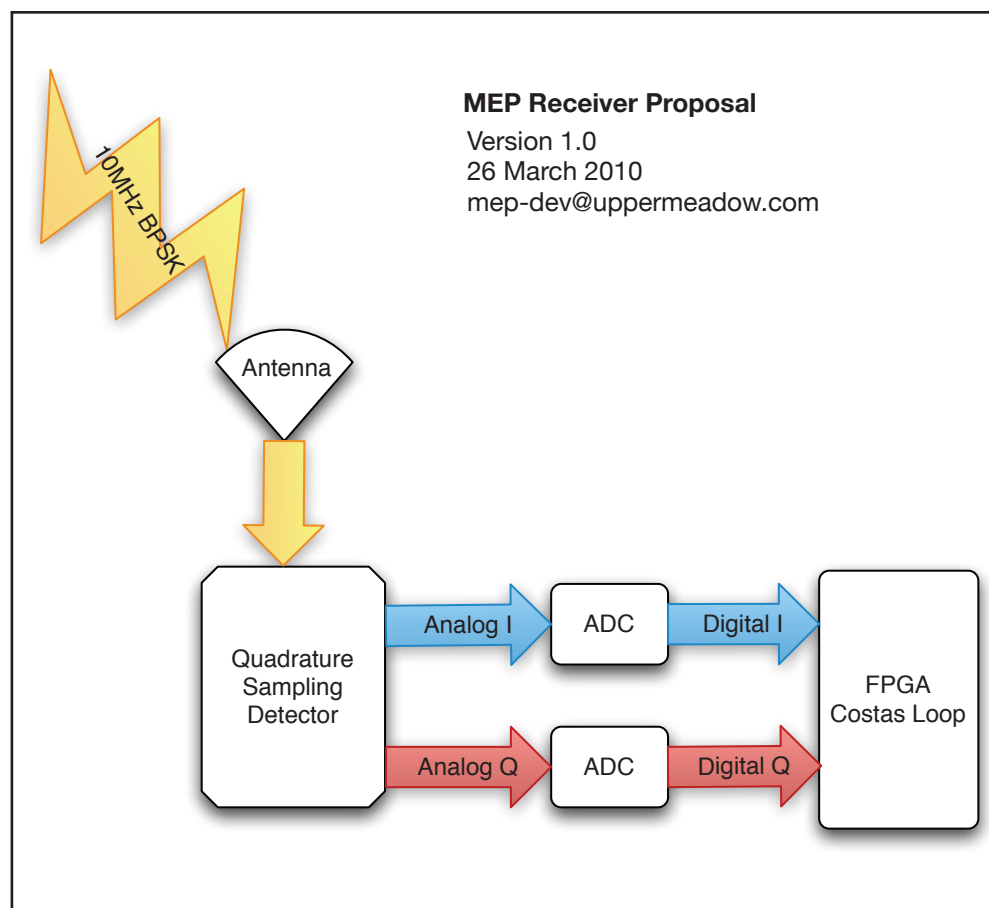
Look for signs and an orange-and-white orienteering flag at the starting site. Call K0OV on 146.52 simplex if you have trouble finding the gathering area within the park. A map for driving to the site is at [www.homingin.com](http://www.homingin.com). If rain is forecasted, check that site for possible cancellation.



the start-

73,  
Joe Moell K0OV

# Microwave Engineering Project Update



MEP (<http://www.delmarnorth.com/microwave>) is moving towards development of a microwave-band amateur radio modem. The modem will be implemented in a field-programmable gate array (FPGA), and it will demodulate binary phase-shift keying. The modem will accomplish this by using a Costas Loop. Additional modes and techniques will be added after the basics are completed.

Everyone is welcome to join the project or just follow along. We have a mailing list, an RSS feed, and publish all our work on our website. We do need help with many different aspects of the broadband microwave system. If you have ever wanted to learn something new or put your existing skills to work in designing and building an all-digital broadband microwave station, then this project is for you!

*If any of these terms look confusing, then you're in good company. Join MEP and learn about modern digital communications techniques while contributing towards an experimental platform as well as a working microwave station.*



*Holiday Social Photos on page 10 and 11 by Don Johnson WD6FWE.*



*Charlie NN3V enjoys the program at the March PARC Meeting. Photo by KB5MU.*



# No Joke

## San Diego Antenna Ordinance

by Tom Ellett W0NI, Michelle W5NYV

As you likely already know the City of Diego is reviewing a proposal to further restrict ham radio antennas. We know that whatever is approved here by the City will very quickly affect other communities in SD county and beyond. I was present at the hearing on Thursday and I was very proud of approximately 100+ hams who took off the morning to attend the hearing. The 3 minute speeches where all very well done and represented a broad cross section of the amateur radio community. The video clip (link below) of the proceeding is a must see and you will no doubt recognize some of your fellow hams who spoke.



Steve Early AD6VI speaks about the planning commission hearing at the March PARC meeting. Photo by KB5MU.

[http://granicus.sandiego.gov/MediaPlayer.php?view\\_id=8&clip\\_id=3801](http://granicus.sandiego.gov/MediaPlayer.php?view_id=8&clip_id=3801)

Beyond the impact of further restriction on antennas, what is before the City now will in my judgment dub San Diego as a very ham unfriendly place and have a negative effect our young people who are just starting out in ham radio. I will be calling for your support when this legislation goes to the full City council in 4-6 weeks.

From the Southwest Division e-Communicator Newsletter:

"After three hours of testimony from city staff and the public this morning, the San Diego City Planning Commission voted unanimously to recommend that the City Council reject a proposed anti-Amateur Radio antenna ordinance because they believed it was too restrictive. The planning commission recommended that city staff work with the Amateur Radio community to produce something more acceptable.

The proposed ordinance attempted to effectively

ban antennas over 30 feet high in most parts of the city, and required an \$8000 initial fee to initiate an approval process, with no limit on the total fees permitted.

Only two La Jolla residents, upset over over one particular antenna in their neighborhood, testified in favor. Over 80 amateurs signed up to speak against the proposal. The San Diego DX Club, which had previously attempted to work with the city to produce a reasonable ordinance, led the opposition. An overview was provided by DX Club attorney Felix Tinkov. SDDXC members attorney Larry Serra, N6NC, Jim Price, K6ZH, and Arnie Lewin, W7BIA were primary spokespersons in opposition. Former SDDXC president Glenn Rattmann, K6NA, has played a significant background organizing role as well. 20 or more other amateurs including California's Emergency Management Agency's John Hudson, WA6HYQ, and San Diego ARRL Section Manager Steve Early, AD6VI, also spoke. Steve Early has also worked to rally San Diego city's resident amateurs. Thanks to all who participated.

In spite of today's outcome, the city council can still hold hearings and consider the proposed ordinance. The team of concerned San Diego amateurs will continue to follow the situation and respond appropriately."

The handbook that Steve Early referred to in the testimony to the planning commission can be found at the following link.

[http://www.everyspec.com/MIL-HDBK/MIL-HDBK+\(0300+-+0499\)/MIL\\_HDBK\\_413\\_2003/](http://www.everyspec.com/MIL-HDBK/MIL-HDBK+(0300+-+0499)/MIL_HDBK_413_2003/)

For more background on the issue, there is a web page devoted to the time line of the tower ordinance located at

This web page is an excellent resource for continuing coverage from an amateur radio point of view.

<http://sddxc.org/tower>



# Ham Volunteers Needed

I am the Executive Director of The North American Center for Emergency Communications, Inc. (NACEC), a non-profit emergency communications organization, which is still based in Minnesota. This organization has been more or less dormant for about the last 10 years, but it is currently in the process of becoming very active. The mission of our organization, founded in 1992, was refocused in January 2010 to provide commercial communication support to large scale disaster areas here in the US and around the globe. We will accomplish this by providing field teams which will include commercial communications technicians who hold an FCC GROL or equivalent license and at least 5 years of experience. The field team will be equipped so they can provide commercial radio and digital communications systems to meet the immediate communications needs of the aid and relief organizations and agencies serving within the disaster area. The field team technicians, if needed, will also provide their technical skills to assist in bringing local communications systems back online. We expect this last item will be used more in developing countries.

From time to time during large disasters our field team technicians may benefit from the assistance of volunteers from the amateur radio community. We are looking for volunteers from the amateur radio community first because it is made up of individuals whose professions vary widely, from doctors and attorneys to auto mechanics and retired lumberjacks, yet who have many things in common with our commercial communications technicians and this organization. They share an interest in communications, electronics and a desire to be of service to others!

I have set up a special volunteer application form for use only by licensed amateur radio operators who wish to volunteer their time and skills to help our technicians bring communications back into large scale disaster areas. This application can be found at [www.nacec.org/vol\\_app\\_ars.php](http://www.nacec.org/vol_app_ars.php).

As we expand our organization and its capabilities, we hope that you will follow our progress and take an active role in our success. You can also follow us online if you wish. You will find links to our Twitter, Facebook, and email following accounts on the lower left-hand side of most pages on our website, [www.nacec.org](http://www.nacec.org). Should you have any questions I hope that you will contact me directly.

73

Edward Addy KEØEG, Executive Director  
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# TWOPE

by Robert Freeburn

Do you "TWOPE"? Yes, the PARC Board has approved another mode for distributing future issues of SCOPE -- Twitter. At present, SCOPE is available via email, on the PARC web site, and by paper version via snail-mail. Beginning with the May 2010 issue, each full issue of SCOPE will be condensed down to 140 characters and sent out via Twitter. For more information, visit <http://www.palomararc.org/twope>

## Progress!

The FCC has issued a Notice of Proposed Rule Making (NPRM) to allow Amateur Radio Service communications by employees of public safety agencies and other entities, such as hospitals, for drills and tests in preparation for emergency situations.

The operators would of course have to be licensed hams and certain restrictions would apply.

[http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-10-45A1.doc](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-45A1.doc)

Best 73, Bob/W6VR

# K is Kicked Out of Call Signs

by Robert Freeburn

FCC banishes letter "K" from list of Amateur single-letter call-signs.

According to FCC Chairman Julius Genachowski, use of the single-letter call-sign "K" caused confusion and disruption every time Ham operator Kim Kaye (call-sign K) went on the air and led to numerous complaints that the FCC could no longer ignore.

Kim Kaye (aka "band-hog ground-hog") would spend hours calling himself for lengthy solo rag-chewing such as, "K de K, K" and "K de K, K".

Noting Kim Kaye's tireless dedication to the Amateur Radio Service since the days when single-letter callsigns were issued by the FCC, Chairman Genachowski hopes to lessen "callsign change trauma" for Kim Kaye by giving him first dibs on his choice of any of the new, expanded, 7-digit 2x4 call-signs scheduled to begin being issued on 7/1/2010, the same day as the new effective date for the new NCVEC technician class exam pool.

Editor's note: as of press date, call sign KK1KKKK is available.

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# Field Day Canceled!

Without a Field Day Chair, PARC will not be able to participate in Field Day.

## LAST CALL

by Paul KB5MU

ARRL says Field Day is "not a contest" – but they list it under Contests on their web site and it has Rules like any other contest.

Like this one:

Object: To work as many stations as possible on any and all amateur bands (excluding the 60, 30, 17, and 12-meter bands) and in doing so to learn to operate in abnormal situations in less than optimal conditions. A premium is placed on developing skills to meet the challenges of emergency preparedness as well as to acquaint the general public with the capabilities of Amateur Radio.

PARC has participated in Field Day each year (on the fourth full weekend of June) for decades. Some years the emphasis has been on "any and all", some years it has been on "as many stations as possible"; occasionally the most applicable clause has been "less than optimal conditions".

It's nearly impossible to avoid developing some skills and learning some lessons at Field Day. The lessons are not always the ones we expected.

It's early December, and Field Day is half a year off. Much of the detailed work to prepare for Field Day won't really get started until the last few weeks before the event. If you're just going to drop by and enjoy the event or even operate a shift at one of the stations, you probably don't need to start worrying about it yet. But somebody does.

That somebody is the club's Field Day Chairman, and we need a volunteer to step forward. The Field Day Chairman sets the tone for the whole event. He or she influences how ambitious the club's participation will be, from a very casual fun outing to a hard-core competitive effort. Perhaps most importantly, the Chairman is responsible for obtaining a great site that facilitates the kind of Field Day event planned. It's much nicer when the site is decided on and confirmed well in advance.

If you've attended a number of PARC Field Day events, you'll have an idea about how we've habitually done them. You may have ideas about how we could do them better. As Field Day Chairman, you would have an opportunity to try. The Club owns lots of equipment to make Field Day easier – you will decide how best to make use of it (or not). The Club has many members with all kinds of experience – you will recruit the talent to make Field Day work out best. You might (or might not) delegate most of the detailed work of Field Day to a cadre of experienced Band Captains, leaving your own time free for overall coordination. If you love the way PARC Field Day has always been done, you can choose to follow in those footsteps. If you think we've had it all wrong, the Board is ready to listen to you and (I predict) will endorse your plan, if you can make it work.

Please consider volunteering to serve as 2010 Field Day Chairman.

Email [board@palomararc.org](mailto:board@palomararc.org) to volunteer or if you have questions.

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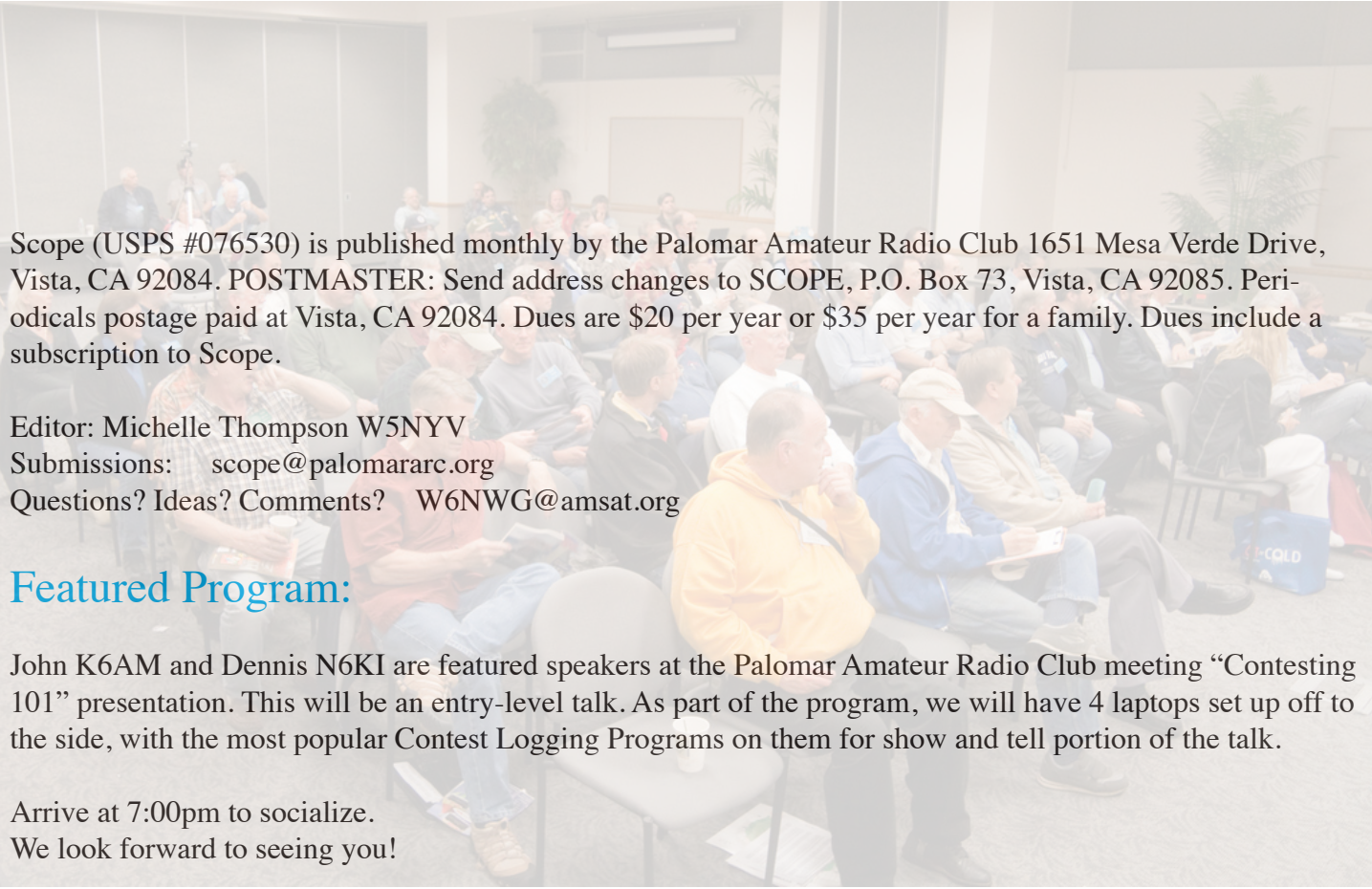
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## Featured Program:

John K6AM and Dennis N6KI are featured speakers at the Palomar Amateur Radio Club meeting “Contesting 101” presentation. This will be an entry-level talk. As part of the program, we will have 4 laptops set up off to the side, with the most popular Contest Logging Programs on them for show and tell portion of the talk.

Arrive at 7:00pm to socialize.

We look forward to seeing you!