

SCOPE October 2007

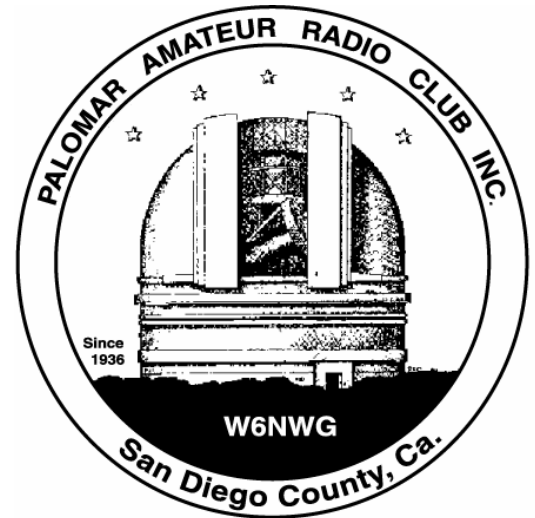
A newsletter by and for the Palomar Amateur Radio Club of San Diego, CA, USA.

Club Meeting - Annual Auction
3 October 7:00pm at the Carlsbad Safety Center

Board Meeting
10 October 7:00pm at W6GNI QTH

Repeater Site Work Parties
6-7 October at the Repeater Site

Miramar Air Show
12-14 October at MCAS Miramar



President's Message

By Steve Early AD6VI

August got off to an early start. On August 1st, we had a very good presentation on Radio Direction Finding and on August 5th, we had the annual picnic. These events closely followed an unusually late July meeting due Independence Day.

The September 5th program featured PSK31, which was presented by Ralph Smith, AE6SV, who provided PSK31 for Field Day and was one of two people that copied the ARRL Field Day Bulletin for PARC. In addition, we hosted the two official candidates for the ARRL Southwestern Division Director position.

Saturday, September 22nd was supposed to be the first day of the PARC Super Weekend at the PARC repeater site. Unfortunately, Mother Nature had other plans, mainly a "Rain Day". So, we re-grouped, watched the weather reports, and headed up the mountain on Sunday September 23rd. On Sunday, we had a very productive day. All of the buildings were prepared for sealing and primer paint, and we were able to take two truck-loads of "Stuff" off of the mountain. In addition, we met with the Palomar

Mountain Volunteer Fire Department Chief, George Lucia, and his Communications Chairman, Chris Kusick, regarding opportunities for PARC to assist the Department and for the Department to assist PARC. More on Fire Department's needs later.

Because of both the rain delay and materials availability, we are now planning to paint the tower and all of the buildings on the weekend of October 6th and 7th. We are looking for volunteers to help. If you have time and the desire, please contact Dan Bubke (dbubke@juno.com) or myself, Steve Early (ad6vi@cox.net / 619-461-2818) schedules and information.

Looking down the road:

The October 3rd program will be the annual PARC Auction. Because of the expected duration, the door will open to sellers at 6:00pm and to buyers at 6:30pm. The auction will start at 7:00pm.

It appears that at least one truck-load of "Stuff" from the mountain is likely to make to the auction block. Also on the 3rd, PARC will announce this year's Nominating Committee. It is that season, so if you have recommendations for good candidates for PARC leadership, please let the Nominating Committee know.

continued on page 2

continued from page 1

October 6th and 7th: Paint and continue to clean the repeater site.

Also in October, the Amateur Radio Emergency Service (ARES) will be needing volunteers for the Miramar Air Show. Contact Section Emergency Coordinator Jim Cammarano, KG6R, at 858-486-2871 or kg6r@arrl.net.

For those wanting to upgrade, keep an eye open for a long-one day General Class in November, and a Two-Day Extra Class on (2) Saturdays in December.

I hope to see you on October 3rd. Bring a friend!

Repeater Site Work Party News



Photo by KB5MU

Equipment buildings at the PARC repeater site on Palomar Mountain are being repainted. Work started in September and will continue into October.

The shipping container and camper trailer were both cleaned and organized. Plans are to keep the shipping container and remove the camper trailer.



Photo by KB5MU

Above is the camper trailer after being cleaned out of all items.



Photo by KB5MU

Fancy new electric meters like this one at the repeater site are suspected of being a source of interference on the input frequency of the 146.730 MHz repeater. Investigations are underway. If you have one of these meters, can you check for interference on or near the repeater input? Send results to scope@palomararc.org

September Meeting Goodie Givers

Fred K6ISS, Conrad KG6JEI, Bill WB6BFG, Ellen N6UWW, Preston W6ASP, Mark KI6FVH, Tom KB6RCW

September Fold & Staple

Art KB6YHZ, Jo KB6NMK, Al W6GNI & Kathy, Harry W6Y00

Statement of Ownership 2007

Statement of Ownership, Management, and Circulation (From PS Form 3526)

1. SCOPE 2. 0765-30 3. 09/26/06
4. Monthly 5. 12 6. \$3
7. Palomar Amateur Radio Club
P.O. Box 73 Vista CA 92085 San Diego County
8. Al Donlevy 1651 Mesa Verde Dr.
Vista, CA 92084
9. Palomar Amateur Radio Club
P.O. Box 73 Vista CA 92085
Editor Michelle Thompson
5379 Carmel Knolls Drive
San Diego, CA 92130
10. Palomar Amateur Radio Club
P.O. Box 73 Vista, CA 92085-0073
11. None 12. No Change
13. SCOPE 14. 09/07
15. Copies Average 09/07 Notes
 - a. 330. 315 Printed
 - b1. 0 0 PD out of Co.
 - b2. 298 289 Pd in Co
 - b3. 0 0
 - b4. 7 5 Other mailed
 - c. 305 294
 - d1. 0 0 Free out Co
 - d2. 8 6 Free in Co
 - d3. 3 3 Other Mailed
 - d4. 13 10 Extra for Dist.
 - e. 23 19 Total Free/Dist.
 - f. 328 313 Sum c + e
 - g. 2 2 File Copies
 - h. 330 315 Sum f + g
 - i.% 92.99 93.93 15c / 15f x 100

Printed October 2007 issue of SCOPE
(Mailed Sept. 2007)

Signed: A.L. Donlevy Publisher
09/26/2007

Club Classified Advertisements

Personal equipment ads are free to members and could be bumped after 3 months. Make up your ad like the ones on this page and send to SCOPE@PALOMARARC.ORG.

Commercial ads in big boxes: \$2/col. inch/month. We will squash your ad copy to the number of inches bought.

(9.9) AC ARC Welder, Marquette 180. 220 VAC power. With heavy duty cables and welding rod holder. \$50 OBO. WB6IQS, John. 760-727-3876.

Satellite Dishes. 1 meter Primestar and smaller. Ku band LNBs. Most with hardware and mounting clamps. Make offer / free to good ham radio homes. WB6IQS, John 760-727-3876.

Reloading Equipment: Pistol / rifle dies, Rockchucker press, Lyman press, accessories, brass, copper jacketed bullets, lead casting molds and furnace. Lots of cast lead in small ingots. Best offer for all or parts. WB6IQS@att.net, John 760-727-3876.

(8.26) FOR SALE:

YAESU FT 840 Transceiver
ASTRON RS 35A Power Supply
MJF 949 Deluxe Versatuner
30 Foot Vertical Cushcraft Antenna

ICOM IC-2100H 144 MHZ Transceiver
SAMLEX SEC1223 DC Power Supply
ARX2B RINGO RANGER II Antenna

Ken Clark, KE4MII
200 N El Camino Real #165
Oceanside, CA 92058
760-231-8377

(8.26) (qty 5) 10 foot sections of Tri-axial type aluminum tower, sections made of 1" tubing on 10.5" centers, the top section has a platform for a rotor \$65.00 for all 50'.

Loren, AD6ZJ, 760-724-4644

continued on page 4

continued from page 3

(7.22) Wanted: Transport for amateur UHF antennas to San Francisco Bay area. Fred Brown, W6HPH. Tel. 760-741-1328. w6hph@yahoo.es

(6.30) Cushcraft R-8 Vertical Antenna, New In Box, \$375.00 (New \$550.00). IC-756PRO II Transceiver with IC-PS125 Power Supply, Never Used, Purchased Feb. 2005 from HRO, Original Cost \$2399, Will Sell for \$1975.00. Selling because of CC&R Issues. Call John N6LMY rohring@sbcglobal.net or (760) 602-5041

JOTA October 19-21, 2007

Jamboree-on-the-Air, or JOTA, is an annual scouting and amateur radio event sponsored by the World Scout Bureau of the World Organization of the Scout Movement. Thousands of amateur radio stations around the world participate. If the conditions are right, it is common to contact a hundred scouting countries during the weekend! We have 12 scouts interested. If you would like to participate, please contact Steve Early at ad6vi@cox.net or 619-461-2818.

Technical Equipment Available for Loan To PARC Members

Thanks to the effort of John, WB6IQS PARC now has a working H/P 8640 Signal Generator. John spent many hours repairing this unit, donated it to PARC and it is available for loan to PARC members for projects. John asked me to verify calibration with my 8640 after he completed the repairs, which I have done and it is now ready for loan.

Technical Description:
AM/ FM 0.5 to 512 MHz on fundamentals and 512 to 1024 MHz on 2nd harmonic.
Output range +10 to -130 dBm "Female N Connector front panel output"
Crystal lock for stability.
Note: This signal generator, designed in

the last century, has a very low phase noise specification, equal to or better than most modern signal generators made today.

In addition to the H/P 8640 I have the following test equipment from the W6JAB estate available for loan to PARC Members

SWR meter (Diamond SX-600)
Texscan CATV Spectrum analyzer 50-400 MHz
MFJ 269B
MFJ 300W dummy load
IFR 1100 Communication Monitor

I also maintain a HP Z3801A GPS Receiver and frequency standard with a 10 MHz output.
It is available for use by appointment for PARC members needing to calibrate equipment.

Contact me for use of the above items, kc6uqh@amsat.org or 760.758.6062
evenings 7:00 to 10:00 PM & weekends 9:00 AM to 10:00 PM

Art,
KC6UQH

Licensing and Class Information

Register 5-7 days in advance for the following test sessions.

□ PARC Testing is in Carlsbad on the 2nd Saturday of the month at 9:30am at the Carlsbad Safety Center. Please call 619-465-EXAM for the latest contact info. Test sessions may be cancelled if no one pre-registers.

□ EARS Testing is in Escondido on the Last Saturday of the month at 9:00 am at the LDS Church.
The address is 1917 East Washington Avenue, Escondido, 92025.
Contact Harry W6Y00 (760) 743-4212 or W6Y00@amsat.org.



Photo by KB5MU

The inside of the storage container at the repeater site was cleaned out and organized.



Photo by KB5MU

Food at the early August PARC picnic.



Photo by KB5MU

Ralph Smith AE6SV, presenting his PSK31 program at the September PARC General Meeting

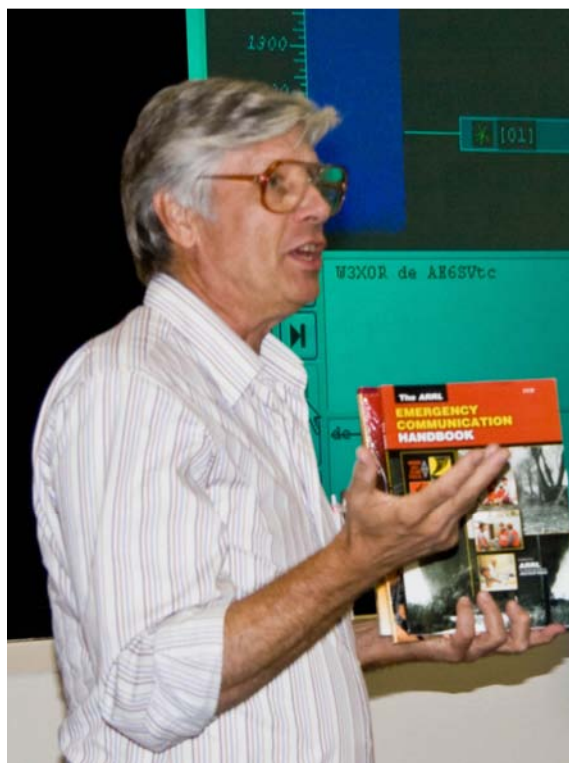


Photo by KB5MU

Dick Norton N6AA at PARC's September 2007 General Meeting.



Photo by KB5MU

Carl Gardenias WU6D at PARC's September 2007 General Meeting.

Contest Corral

Contest	Time and Date
YLRL Anniversary Party, CW	1400Z, Oct 2 to 0200Z, Oct 4
German Telegraphy Contest	0700Z-0959Z, Oct 3
432 MHz Fall Sprint	1900 local - 2300 local, Oct 3
SARL 80m QSO Party	1700Z-2000Z, Oct 4
NCCC Sprint, CW	0230Z-0300Z, Oct 5
TARA PSK Rumble Contest	0000Z-2400Z, Oct 6
Logbook of the World Contest, Phone	0000Z-2359Z, Oct 6
NCCC Sprint, CW	0230Z-0300Z, Oct 6
Oceania DX Contest, Phone	0800Z, Oct 6 to 0800Z, Oct 7
International HELL-Contest	1400Z-1600Z, Oct 6 (80m) and 0900Z-1100Z, Oct 7 (40m)
California QSO Party	1600Z, Oct 6 to 2159Z, Oct 7
EU Autumn Sprint, SSB	1600Z-1959Z, Oct 6
PRO CW Contest	1600Z-1800Z, Oct 6 and 0600Z-0800Z, Oct 7
UBA ON Contest, 6m	0600Z-1000Z, Oct 7
RSGB 21/28 MHz Contest	0700Z-1900Z, Oct 7
YLRL Anniversary Party, SSB	1400Z, Oct 9 to 0200Z, Oct 11
10-10 Int. 10-10 Day Sprint	0001Z-2359Z, Oct 10
NAQCC Straight Key/Bug Sprint	0030Z-0230Z, Oct 10
NCCC Sprint, CW	0230Z-0300Z, Oct 12
Makrothen RTTY Contest	0000Z-0759Z, Oct 13 and 1600Z-2359Z, Oct 13 and 0800Z-1559Z, Oct 14
Microwave Fall Sprint	0600 local - 1200 local, Oct 13
Oceania DX Contest, CW	0800Z, Oct 13 to 0800Z, Oct 14
Pennsylvania QSO Party	1600Z, Oct 13 to 0500Z, Oct 14 and 1300Z-2200Z, Oct 14
EU Autumn Sprint, CW	1600Z-1959Z, Oct 13
FISTS Fall Sprint	1700Z-2100Z, Oct 13
North American Sprint, RTTY	0000Z-0400Z, Oct 14
UBA ON Contest, SSB	0600Z-1000Z, Oct 14
ARRL School Club Roundup	1300Z, Oct 15 to 2400Z, Oct 19
NCCC Sprint, CW	0230Z-0300Z, Oct 19
JARTS WW RTTY Contest	0000Z, Oct 20 to 2400Z, Oct 21
ARCI Fall QSO Party	1200Z, Oct 20 to 2400Z, Oct 21
Worked All Germany Contest	1500Z, Oct 20 to 1459Z, Oct 21
Feld Hell Sprint	1500Z-1700Z, Oct 20
W/VE Islands QSO Party	1600Z, Oct 20 to 2359Z, Oct 21
070 Club 160m Great Pumpkin Sprint	2000 local, Oct 20 to 0200 local, Oct 21
50 MHz Fall Sprint	2300Z, Oct 20 to 0300Z, Oct 21
Asia-Pacific Fall Sprint, CW	0000Z-0200Z, Oct 21
UBA ON Contest, 2m	0600Z-1000Z, Oct 21
Illinois QSO Party	1700Z, Oct 21 to 0100Z, Oct 22
Run for the Bacon QRP Contest	0100Z-0300Z, Oct 22
NCCC Sprint, CW	0230Z-0300Z, Oct 26
CQ Worldwide DX Contest, SSB	0000Z, Oct 27 to 2400Z, Oct 28
ARRL EME Contest	0000Z, Oct 27 to 2359Z, Oct 28
10-10 Int. Fall Contest	0001Z, Oct 27 to 2359Z, Oct 28

Ten Ten Convention Report Part 2

By Preston Butler W6ASP

This article is continued from the September 2007 SCOPE.

At 4:00pm on Saturday they had a parking lot net where there were 138 check-ins. It took an hour to complete. I used my FT817 with a ten-meter telescopic antenna to check in from our hotel room. I estimated about 175 to 180 people attended this convention. Some of them obviously not hams. They were there supporting their spouses or friends.

At 5:00pm on Saturday there was the wedding. It took about 30 minutes. It was a real nice wedding. I never did find out if the minister that married them had a Ten Ten number. I wouldn't be a bit surprised if he did. A catered dinner was served on Saturday evening at the hotel that began at 6:00pm. There were quite a few servers there so everyone received what they ordered in a timely manner. You had a choice of chicken, pork chops or rib eye steak. There were several cakes made commemorating the convention being held in Omaha. Needless to say I stayed away from that myself.

Toward the close of the dinner Joe KONEB, Ten Ten#74181, gave a series of slide presentations of past Dayton Ham conventions that he put to music that was very impressive. Joe is the official photographer at Dayton Hamvention and after seeing his presentation I could certainly see why. I know some of you that attend Dayton have seen him walking around. He is the one walking around wearing a tall red and white "Cat In The Hat" style hat. He also has VHF/UHF type antenna fixed to the back of the hat. On the front of the hat he has his call sign and name. He has some of his videos on the following web site that you can

download.

<http://radiodx.googlepages.com/>

The convention came to an end on Sunday morning after the morning breakfast buffet and the viewing of some videos clips of storm chasers.

Some of these people don't have both oars in the water. One example is two guys went into a hail storm where the hail was as big as golf balls and the wind was really blowing. By the time they decided to get to cover the two back passenger windows were totally broken out. The front window was hit in numerous places causing massive cracks where you couldn't see out. Another incident involved two storm chasers who decided to take refuge in an old abandoned shack with their vehicle. The shack collapsed during the high winds and completely destroyed their vehicle. I wanted to know where these guys got their training so I knew not to go there. Most everyone left on Sunday to head for their homes. Susan and I headed out to visit family around 10:00am and returned a little after 4:00pm. Good thing we did because around 4:30pm while eating dinner a major thunder and lightning storm came through. The lightning was so close that the thunder followed immediately seeing the lightning. While the thunder was rumbling it felt like an aftershock of an earthquake going through the building that we were having dinner in. We left Omaha on Monday morning, August 13 at 7:00am for home.

73

De

Preston D Butler-W6ASP, Ten Ten#73446,
VP:3257

WASP Amateur Radio Club-W4BZB, Ten
Ten#74397

Susan Butler-KG6MGA, Ten Ten#74602

PARC and PARC Affiliated Repeaters

Frequency	Tx	Tone	Call Sign	Remarks
52.680	–	107.2	W6NWG	
146.730	–	107.2	W6NWG	Autopatch; see note 1,
147.075	+	107.2	W6NWG	Autopatch; see note 2
147.130	+	107.2	W6NWG	Autopatch; see note
447.000	–	107.2	W6NWG	Autopatch; see note 2
224.380	–	107.2	KK6KD	Americas Unidos
224.900	–	107.2	WD6HFR	Convair/220 ARC
224.940	–	107.2	KK6KD	Sharp Hospital Coverage
446.140	–	123.0	WB6FMT	Vista
146.175	+	107.2	N6FQ	Fallbrook ARC; linked to 445.600
445.600	–	107.2	N6FQ	Fallbrook ARC; linked to 146.175
145.050	(s)	None	W6NWG-1	Packet node; linked to Metro 9600 net
146.700	–	None	W6NWG-4	Packet duplex repeater; Duplex; PALBBS use OK

PARC also conducts the following ATV (amateur fast-scan television) operations:

ATV in: 915 MHz WBFM, 2441.5 MHz WBFM

Intercom: 146.415 MHz NBFM simplex (tone 79.7)

ATV out: 1241.25 MHz AM

Regular Nets Sponsored by PARC

Day	Time	Frequency	Name	Manager
T/Th/Sa	2000	146.730	NTS Traffic Net	Marvin KD6YJB KD6YJB@arrrl.net
Sunday	0830	146.730	ARES Net	Jo Ashley KB6NMK@arrrl.net
Sunday	1900	147.130	Handi-Hams	Marcia De Runtz KG6FIX
Sunday	2045	147.075	MARA	Glenn Jones KG6JDF@amsat.org
Monday	1915	146.730	RACES Sub-net	
Monday	2100	146.730	Microwave Net	Kerry B.
Tuesday	1900	147.130	Red Cross Net	Ted tthompdson@sdaarc.org
Tuesday	2100	146.730	Off-Road Net	Dick Wilimek KA7AYTrwilimek@cox.net
Thursday	2000	147.075	SATERN	tomcarmody@cox.net
Thursday	2100	146.730	Ham Help Net	
Friday	2100	146.730	Hiker's Net	Ed KF6DXX@juno.com

Board of Directors Position	Call Sign	Contact Information
President - Steve Early	AD6VI	619-461-2818 ad6vi@amsat.org
Vice President - Tom Storer	KI6DER	ki6der@amsat.org
Secretary - Gary Kent	W6GDK	858-679-0578 w6gdk@arrrl.net
Treasurer - Bob Birch	KG6RGI	rrbirch@cox.net
Director - Tom Martin	KG6RCW	619-778-3866 rbg4@aol.com
Director - Dennis Baca	KD6TUJ	760-722-0251 kd6tuj@amsat.org
Scope Editor - Michelle Thompson	W5NYV	w5nyv@amsat.org
Repeater Chair - Dan Bubke	K6NKC	k6nkc@amsat.org
Membership - Al Donlevy	W6GNI	760-630-3096 w6gni@amsat.org

¹ The 146.730 repeater transmits a CTCSS tone of 107.2, but does not usually require any tone for access. When necessary, an access tone of 107.2 can be enabled. A 107.2 tone is always required for autopatch access.

² PARC autopatches are closed, for members only, and always require an access tone of 107.2. For PARC autopatch access info, email autopatch@PalomarARC.org.



RF PARTS™
COMPANY
From Milliwatts to Kilowatts™

Complete inventory for servicing amateur
and commercial communications equipment

RF POWER TRANSISTORS — TUBES — POWER MODULES

Diodes • Relays • Trimmers • Capacitors • Heatsinks
Transformers • Chokes • Combiners • Wattmeters • Books

3-500ZG • 811a • 572B • 4-400a • 6146B • 8072 • 8560AS

3CX400A7 • 3CX1200A7/D7/Z7 • 3CX1500A7 • 3CX3000A7

4CX250B • 4CX250R • 4CX400A • 4CX800A • 4CX1500B

Merit W6NQ • Gary K6CAQ • Steve K6NDG • Rob WA6GYG • Doug K6DRA

760-744-0700

www.rfparts.com • orders@rfparts.com



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**
\$25 +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.

TUNER-TUNER

Tune your tuner without transmitting. Save that rig! Just listen to the Tuner-Tuner's noise with your receiver. Adjust your tuner for a null and presto! You have a 1:1 SWR.

Model PT-340 \$99.95+tax+\$8 S&H

See catalog at www.Palomar-Engineers.com

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

IMPULSE Electronics

(760) 747-5277 – (866) 747-5277

www.impulseelectronics.com

**Your Connection for
Emergency Power Solutions**

Power Products

Power Pole Connectors – Power Cables – Tools
AGM Batteries – Red/Black Zip Cord 14 – 8 GA

West Mountain Products

RIGrunner – RIGblaster – Accessories
PWRgates – Computerized Battery Analyzer
Coax Cable – Coax Assemblies – Adapters
Terminals – Coax Connectors – Battery
Chargers – Battery Accessories
Email sales@impulseelectronics.com

NiCd Lady Company

Grace Lloyd
N6WPA

grace@nicdlady.com

www.nicdlady.com

Custom Assembly • Rebuilds • Batteries
• Lead Acids • Replacement Packs

20585 Camino Del Sol • Unit B
Riverside, CA 92508
800/906-6423
951/653-8868
Fax 951/653-5189

Your Complete Battery Source

Please consider our
advertisers when you're
shopping.

Let them know that you
heard about their business
from the SCOPE.

HAM RADIO OUTLET

Tom KM6K
Ron N6OMW
Jose XE2SJB
Bob KA6EKT

KENWOOD
rf CONCEPTS
DIAMOND
US TOWERS
KANTRONICS
YAESU, MFJ, ICOM
BENCHER, Inc.
HUSTLER
COMET
AMERITRON

Astron,
AEA,
OUTBACKER
Larsen Antennas
TEN-TEC
Hy-gain, Tri-EX,
Cushcraft And Others
too
Numerous to
Mention!

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
858 560-4900
or toll free 1-800-854-6046

Directions: On 163, take **Clairemont Mesa Blvd.** 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 **real** antennas!

Address service requested

Scope (USPS #076530) is published monthly by the Palomar Amateur Radio Club 1651 Mesa Verde Drive, Vista, CA 92084. Periodicals postage paid at Vista, CA 92085. Dues are \$18 per year or \$30 per year for a family. Dues include a subscription to Scope. Editor: Michelle Thompson W5NYV.

Submissions: scope@palomararc.org
Questions? Ideas? Comments? W6NWG@amsat.org

This month's General Meeting will be held on October 3rd, 2007 (The first Wednesday of each month) at the Carlsbad Safety Center. The subject will be the annual auction. Talk-in on 146.730 MHz repeater. Auction starts at 19:00 but doors open earlier for seller setup. Ridesharing and coordinating for dinner beforehand often occurs on the repeater on Wednesday afternoons. Everyone is welcome! The Palomar Amateur Radio Club serves the Amateur Radio community of San Diego County California with repeaters located on Palomar Mountain. The club has monthly meetings, Field Day festivities, an annual auction, and many other fun and interesting functions. All are welcome at our club meetings and on-the-air interactive radio nets which now feature discussion groups on hiking, microwave, off-roading, as well as traditional message traffic and emergency communications nets (RACES - ARES - MARA). 73 and hope to CU you on the air! -NN3V (past president of PARC)