



PAARAgraphs



Celebrating 64 years as an *active* ham radio club—*Since 1937*
Newsletter for the Palo Alto Amateur Radio Association, Inc.



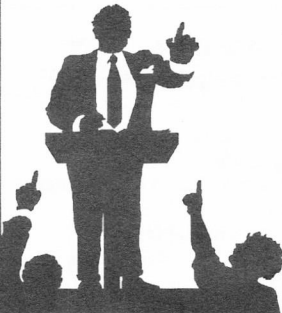
CALENDAR



- May.....4, **PAARA Meeting**, 7:30
Menlo Park Recreation Center
700 Alma Street, Menlo Park
 - May.....9, **PAARA Board Meeting**, 7:30
Red Cross Bld., 400 Mitchell Ln., Palo Alto
 - June.....1, **PAARA Meeting**, 7:30
 - June.....6, **PAARA Board Meeting**, 7:30
 - July6, **PAARA Meeting**, 7:30
 - July11, **PAARA Board Meeting**, 7:30
- 2 m CODE PRACTICE, 2000 to 2030 PST Tues
N6NFI 145.23 repeater
Also try 7.100 for 24 hr code practice

PROGRAM

May 4, 2001
7:30 P.M.



(program not final at press time
Check Monday night NET)

Join us for **pre-meeting eyeball**
at **Su Hong Restaurant**, 1039 El Camino Real, Menlo Park
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 order and bill.

—PAARA Radio NET every Monday evening at 8:30 P.M., local time—
on the 145.230 -600 MHz repeater, PL tone off



Don Trask, KF6JMQ

Dr. Frances Winslow, KC6THM
Speaker April 6th



Miscellaneous Dates

Flea Market at Foothill (info: <<http://www.electronicfleamarket.com>>)

See Page 43

PAARA Palo Alto Amateur Radio Association
 meets 1st Friday 7:30 each month, Net 145.230 each Monday 8:30,
 contact: Andreas Junge N6NU.....(650) 233 0843

FARS Foothills Amateur Radio Society
 meets 4th Friday 7:30 each month,
 contact: Sheldon Edelman N6RD, 650-493 7212, n6rd@earthlink.net

NCDXC Northern California DX Club
 meets 2nd Friday 7:30 each month, repeater for member info 147.360, Thur 8:00PM,
 contact: Bob Mammarella KB6FEC 408 729 1544.

NorCalQRP Northern California QRP Club
 meets 1st Sunday each month,
 contact: Jim Cates 3241 Eastwood Rd., Sacramento, CA 95821.

Perham Foundation,
 contact: Jerry Tucker N6NV 650-961-3266

SPECS Southern Peninsula Emergency Communication System
 meets each Monday 8:00PM on Net 145.27, 440.80 MHz, www.specsnet.org
 contact: Tom Cascone, KF6LWZ, 650-688-0441 specs@svpal.org

SCARES South County Amateur Radio Emergency Service
 meets 3rd Thursday 7:30 each month, San Carlos City Hall.
 Net is on 144.45 & 444.50 (PL-100) 7:30 Monday evenings.
 contact:

SCCARA Santa Clara County Amateur Radio Association
 Operates W6UU repeater 146.385+ Nets: 2m, W6UU, 7:30 Mon; 10m,
 28.385, 8:00 Thur. meets 2nd Mon each month.
 contact: Jack Ruckman AC6FU

SVECS Silicon Valley Emergency Communications
 Operates WB6ADZ repeater (146.115 MHz+)
 contact: Lou Stierer WA6QYS 408 241 7999

WVARA West Valley Amateur Radio Association
 operates W6PIY repeater 147.39+, 223.96, 441.875, 1286.2
 meets 3rd Wed every month.
 contact: Glen Lokke Jr. KE6NBO at 408 971 8626, or glokke@pacbell.net

Disaster Services

PALO ALTO CHAPTER, American Red Cross
 Meets 3rd Wed. each month 7:30PM,
 HF, packet, BBS, ATV, OSCAR Gateway, NASA satellite,
 contact: Alan Ball 650-688-0423.

SAN JOSE CHAPTER, American Red Cross
 contact: Scott Hensley KB6UOO, 408 249 7093, sh@richochet.net

VE Exams, 3rd Saturday each month, 11AM, 145.23- PL=100Hz
 American Legion Hall, 651 El Camino Real, R.C.
 contact: Al Montoya at WB6IMX@worldnet.att.net

(please send changes to PAARAgaphs editor: k6uro@arrl.net)

Join us for pre-meeting eyeball

QSO May 4th

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 order and bill.

6 pm— at Su Hong Restaurant
 1039 El Camino Real
 Menlo Park

—across from Kepler's Book Store—



Palo Alto Amateur Radio Association, Inc.

PO Box 911

Menlo Park, CA 94026

President Andreas Junge N6NU.....(650) 233 0843
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wa6sbo@arrl.net
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RGK4U@aol.com
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vic.black@adept.com, ab6so@smm.com
 W6OTX Station Trustee.. ?
 K6YQT Station Trustee.. Gerry Tucker, WA6LNV.....(650) 326 4908
 Property..... Gerry Tucker, N6NV.....(650) 326 4908
 Badges..... Don Trask, KF6JMQ.....(408) 251 6494
 ARES Officer..... Lily Anne Hillis, N6PGM.....(650) 325 5484
 Club Historian ?
 Advertising..... Bob Korte, KD6KYT.....(650) 595 1842
 Webmaster..... Andreas Junge N6NU.....(650) 233 0843
n6nu@arrl.net

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 Gerry Tucker, N6NV (650) 326 4908 '01
 Pat Gormley, KB6HJM (650) 369 3550 '02

(see "Calendar" for Board meeting times, visitors welcome)

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PAARAgaphs e-mail address: k6uro@arrl.net
 Submit material for PAARAgaphs by the 15th
 PAARA Website <http://www.qsl.net/paara/>

Contest Calendar

~Vic Black, AB6SO~

(for rules and exchanges, see www.contesting.com)

May, 2001

- 1-9 N. American HSMS Contest 0000Z, May 1 - 2359Z, May 9
- 1 AGCW QRP/QRP Party 1300Z - 1900Z, May 1
- 5,6 MARAC County Hunter Contest, CW 0000Z, May 5 - 2400Z, May 6
- 5 IPA Contest, CW 0000Z - 2359Z, May 5
- 5,6 SLP Competition (SWL) 0000Z, May 5 - 2400Z, May 6
- 5,6 10-10 Int. Spring Contest, CW 0001Z, May 5 - 2400Z, May 6
- 5,6 Indiana QSO Party 1400Z, May 5 - 2300Z, May 6
- 6,6 Massachusetts QSO Party 1800Z, May 5 - 0400Z, May 6 and 1100Z - 2100Z, May 6
- 5,6 ARI International DX Contest 2000Z, May 5 - 2000Z, May 6
- 6 IPA Contest, SSB 0000Z - 2359Z, May 6
- 12-13 Nevada QSO Party 0000Z, May 12 - 0600Z, May 13
- 12, 13 VOLTA WW RTTY Contest 1200Z, May 12 - 1200Z, May 13
- 12, 13 Oregon QSO Party 1400Z, May 12 - 0200Z, May 13
- 12 FISTS Spring Sprint 1700Z - 2100Z, May 12
- 12, 13 CQ-M International DX Contest 2100Z, May 12 - 2100Z, May 13
- 19, 20 Manchester Mineira CW Contest 1500Z, May 19 - 2400Z, May 20
- 19, 20 Baltic Contest 2100Z, May 19 - 0200Z, May 20
- 26, 27 CQ WW WPX Contest, CW 0000Z, May 26 - 2400Z, May 27
- 26, 27 Anatolian RTTY WW Contest 0000Z, May 26 - 2400Z, May 27
- 27 ARCI Hoot Owl Sprint 2000 - 2400 local, May 27
- 28, 29 MI QRP Memorial Day CW Sprint 2300Z, May 28 - 0300Z, May 29



PAARA PONDERINGS de VIC BLACK, AB6SO

After reporting the new Canada College repeater on 440.450 (+107.2) last month, I decided to try it myself. I was in the San Carlos Airport Restaurant for breakfast and had been using my tiny Yaesu VX-1R for listening to the aircraft. Someone asked about the little pager-sized transceiver. "That's the smallest cell phone I've seen". I told him it was a Ham Radio. He wanted to know how far I could talk with it. I explained that it depends on conditions.

When I tuned to the 440.45 repeater, the remote base station was linked and 10 meters was breaking squelch. I gave my call once and LU1FQ called from southwestern Argentina. That fun contact was one of the better demonstrations of Amateur Radio in a long time! The next time I used it I was in HRO in Sunnyvale. I gave my call once and a Japanese station answered. A new operator walked into the store about that time and said he'd just used 2 meters for his first contact. I handed him the HT and told him to give his call sign. When he did, another Japanese station answered him. If you remember your first ever contacts, you know what a thrill it must be for one of your first contacts to be Japan on a handheld transceiver about the size of a pager. It wasn't such a surprise to me, though, since it was, after all, a Japanese radio!

Is experimentation still alive in Amateur Radio? You bet! Rev. David Hatch N9ZRT, Pastor of Our Savior Lutheran Church in Green Bay, WI reports on his latest antenna experiment. "Word about our 'Ionic Fluid' liquid antenna is spreading fast. While we have been making contacts on the IFA since the fall of 2000, we recorded the first 'Liquid Antenna' to 'Liquid Antenna' QSO on St. Patrick's Day, Saturday March 17, 2001, 1719 Zulu on SSB at 18.157.50 MHz. The participating stations were WH2AAT in Orange Park, FL and N9ZRT in Green Bay, WI. Both stations were operating on 10-foot tall x 2-inch wide 'columns of ionic fluid' (concentrated saltwater). Also participating in the QSO was W8ZU in Glen Rock, Pennsylvania who was using a conventional antenna. Two Live-Wire Group members, N7PPF and KJ6AP, witnessed the QSO from their stations in Riverside, California and Vancouver, Washington, respectively."

The "Ionic Fluid Antenna" is a column of saturated saltwater solution with short copper probes coupling RF into the highly conductive liquid, which resonates and actually becomes the antenna. Tests have included 10-foot x 4-inch and 10-foot x 2-inch PVC pipes filled with the homebrewed fluid. David has also tested an 8-foot x 2-inch Pyrex glass tube filled with the solution. He is now testing a pumpable-to-resonant-length version. While conventional antennas conduct using the "Skin Effect", the IFA is thought to conduct and radiate as a monoblock. The antenna's specific gravity is 1.172 at room temperature compared to 1.020 for seawater. David uses an Icom IC-706 into an SGC-231 Antenna Coupler to drive the liquid antenna. Is it really working as David thinks it is? Who knows at this time? I think another possibility is that the "antenna" is ac-

tually the counterpoise and his metallic "counterpoise" is doing the radiating. Time will tell as more people experiment with this new idea.

Last month I reported the world terrestrial distance record for pedestrian-to-pedestrian hand held transceiver contact between Bonnie Crystal KQ6XA (San Mateo, CA) and Max Pompe ZL1BK (Auckland, NZ) for a distance of 6,500 miles (10,460 km). This month, there is news that Max has been at it again with his FT-817. Demetre Valaris SV1UY said, "Now I am the proud owner of a YAESU FT-817 (a great HF+6m+2m+70cm battery operated 5 Watts little radio) with the W6MMA MP-1 all band manual screwdriver antenna, which I take everywhere I go. On 28 February 2001 at 06.25z I contacted ZL1BK/PM on 14,348 KHZ using CW while I was trekking on Mt. Ymittos and I also spoke to him at 06.45z on 14,280 KHZ using SSB. We were both operating as Pedestrian Mobiles with short antennas and this has been recognized as a world record by the HFpack Group. I have also contacted Max on 25 February 2001, 4 March 2001 and 11 March 2001 in other bands by using the same rig and antenna. He was also using an FT-817 at 5 Watts and a handheld antenna."

This record will be tougher to break than the Crystal/Pompe record since Demetre and Max are at the antipodes, that is, on opposite sides of the earth from each other. You can't go much farther than that. It's assumed that, because of the times of day and the paths involved, that the contacts were made by F-layer chordal hops with the signals refracting from one spot on the F-layer to another without returning to the ground until they made it all the way around to the other side of the earth. Demetre reported, "Our 17,549 km QSOs were repeated again this UTC morning between myself (SV1UY/PM) and Max (ZL1BK/PM) in both SSB and CW. And by the looks of things we can do it again whenever we feel like it." Since Demetre likes digital modes and often goes packet portable with an HP 200 palm top computer, they hope to make the trip on PSK-31 next time. This may allow them to drop the power down tremendously from their current 5 watts.

Rechargeable batteries have become a commodity item in just about every household throughout America. We especially use them a lot in Amateur Radio to power handie-talkies and portable radios. Used batteries need to be recycled in order to keep toxic metals out of our water system. The Rechargeable Battery Recycling Corporation (RBRC) can help you recycle your portable rechargeable batteries. These batteries are commonly found in cordless power tool, cellular and cordless phones, laptop computers, camcorders, digital cameras, and remote control toys. RBRC recycles the following portable rechargeable battery chemistries: Nickel Cadmium (Ni-Cd), Nickel Metal Hydride (Ni-MH), Lithium Ion (Li-ion) and Small Sealed Lead (Pb) weighing less than 2 lbs. Visit their web site at <http://www.rbrc.org>. Type in your ZIP code and you'll see a listing of about 30 to 40 sites nearby where you can drop off batteries for recycling. Standard zinc-carbon and alkaline cells are considered non-toxic and can be thrown in the trash.

At the April Foothill Swap Meet I talked with Jon Neves KB6FU. He related the story about the time that he had a sil-

(Continued on page 44) PAARA PONDERINGS



WEB WANDERINGS

de Vic Black, AB6SO

PAARA member Jeff Wheldon **KF6PDF** discovered a web site with a comprehensive, no nonsense antenna tutorial. Go to <http://www.qsl.net/g7exo/atindex.html> for **G7EXO**'s explanations for how antennas work.

Jeff also passes along the site of some colorful and easily understood graphs depicting the solar flux at <http://members.cts.com/fort/w/wn6k/sf2.htm>. A really useful web page from NOAA Space Environment Center in Boulder, CO is located at http://www.sec.noaa.gov/rt_plots/dregion.html. It displays a world map showing the current D-layer absorption versus frequency. High D-layer absorption equates to less chance for working DX. The map dynamically updates once every minute.

Reg Edwards **G4FGQ** lists freeware to perform antenna related calculations, such as building and matching feedlines to antennas, at <http://www.btinternet.com/~g4fgq.regp/page3.html#S301>. The programs are written for use with DOS, which will no longer be supported by Microsoft. If you prefer DOS to Windows, download these programs while you still have a chance and keep them on disk for future use. If you prefer hand held calculators to full size computers, try <http://sun2.lib.uci.edu/~martindale/RefCalculators4A.html#ELECTRO-MICROSTRIP>. This site features almost 13,000 calculator programs to download and use. Many are electronics and antenna related.

There's an abundance of small, low power rigs coming to market. These little fully capable radios are perfect for use with solar panels. Photovoltaic panels are also getting a lot of attention lately because of our perceived power shortages. A problem with PV panels is picking the right panel size for the chore at hand. Go to members.aol.com/wb31gc/solar.htm for help in choosing and using the panels. Several Amateur Radio operators have opted to go completely off the power grid. Many of the news media types in the East have poked fun at California for wasting energy and getting into an energy bind. Apparently California is actually pretty good at conserving energy since we rank 47th among the states for per capita energy use. If we conserve too much, states that depend on energy sales to California will start hurting later as we grow to depend on them less and less. Because of the power shortages, we may see a growth in the solar panel industry. Prices may increase for a while as demand increases, but later on prices should drop appreciably as supply catches up to demand. At that time, Radio Amateurs can expect to find panels at bargain prices.

Sunnyvale VEC Gordon Girton **W6NW** maintains a site at <http://www.amateur-radio.org/index.html>. Besides all the normal information about license test sessions, new call signs and updates, there is a link to the California Independent System Operator, which controls power distribution in California. Power shortage alerts are issued daily on the site. A chart that is updated each minute shows projected and actual power us-

age. Press releases are posted on this site as they are released to the news media. You can access the news releases directly by going to <http://www.caiso.com/newsroom/pw2000.html>. At the top of the page is the listing of power plants that are currently out of production with both planned and unplanned (emergency) shut downs and below that are the press releases. Because of the dynamic nature of complicated systems such as the power grid, there can be 50 - 60 power plants off line at any one time. Check this site often if you are planning an event that will depend heavily on power being available. As summer arrives, we'll definitely have more and more rolling blackouts. Be the first to know about pending shortages. Keep your batteries charged and small flashlights at hand.

I've written recently about the possibility of disposable radios. Now comes word of the world's first disposable cell phone made of flexible printed circuit material encased in recycled paper. These phones will probably only originate calls since they will feature prepaid airtime and won't be assigned their own telephone numbers. They will sell for approximately \$10 and are promised for release later this year. Will it actually happen? Who knows? The manufacturer, Dieceland Tech Corporation claims to have 100,000,000 on order for sale starting this summer or fall. Plans are to sell the phones by vending machines, in convenience markets and bundled with other products. (Would you like fries or a cell phone with your burger?). Not only that, but Dieceland is developing a \$20 laptop computer made of recycled paper due out next year. The company is a public company and has funding in place. Over 20 patents have been granted for the new technology. To preview a working prototype of the phone, go to <http://www.dtcproducts.com/products.html>. The head of the company, **Randice-Lisa Altschul**, fully expects to be the next Bill Gates.

Wayne Smith **K8FF** of Aurora, Ohio designed the NorCal QRP Club CW Paddle Kit. After a successful run by the club, Wayne licensed Vibroplex to produce it as the Code Warrior, Jr. Key. Demand has been so great that an 8-week backlog developed. I was lucky enough to get low serial number 32 and find it to be a very smooth operating, but sturdy key. Now Wayne is designing another key for Vibroplex along with a straight key. One of the finest dual paddle keys ever produced is the Mercury. Perhaps that's a clue as to why Wayne is calling his new creation the Venus. He has asked us to check out his web site with a photo of the new paddle located at <http://hometown.aol.com/k8ff/myhomepage/index.html>. Wayne said, "Your comments will be greatly appreciated!" He'll have better photos up in a few weeks, as he's still busy perfecting his new design.

NASA Science News for February 15, 2001 had a story about the current status of the solar cycle. The sunspots we see on the surface of the sun are actually relatively cool spots caused by magnetic anomalies within the sun itself. At the peak of the solar cycle, the sun's magnetic field changes to a torroid, or donut shape, around the equator and then the poles of the sun switch polarity. The North Pole becomes the South Pole and vice versa. Apparently that is happening now, indicating that we are at the peak of this cycle. During especially powerful cycles, the

(Continued on page 45) WEB WANDERINGS

Suffix	CallSign	Farr	Name	City	Phone (H)	Email
LSP	KE6LSP		DeFrancesco, Frank	Palo Alto	650-329-1428	fdef@earthlink.net
LT	KB6LT		Katz, Nolan	Redwood City		
LWZ	KF6LWZ		Cascone, Thomas	Los Altos	650-948-4937	
LZI	KA6LZI		McElhinney, W.G.	Palo Alto	650-325-9808	mcels@aol.com
MX	AD6MX		Furman, Jeffrey	Sunnyvale	408-245-3418	jfurman@ocsinc.sbay.org
NCS	KF6NCS	F	Nelson, Zack	Redwood City	650-364-7385	dkagent@hotmail.com
NCX	WA6NCX		Ferranti, Rick	San Carlos	650-859-2857	remler@juno.com
NFE	KC6NFE	F	Troster, Marguerite	Atherton	650-854-3939	
NFI	N6NFI		Kliibo, Rolf	Palo Alto	650-856-2748	kliibo.rolf@ssd.loral.com
NU	N6NU		Junge, Andreas	Menlo Park	650-233-0843	n6nu@arrl.net
NV	N6NV		Tucker, Gerald	Palo Alto	326-4908	
NXI	N6NXI		Overstreet, Scott	Los Altos	650-941-3714	scott@becklawfirm.com
OBX	KF6OBX	F	Gaynon, Susan	Palo Alto	650-853-6049	
OEB	W6OEB		Babcock, Dean	Portola Valley	650-851-8195	prof_babcock@msn.com
OLD	N6OLD		Kaiser, Bill	Palo Alto	650 213 9969	bk@divi.com
PA	AA6PA		Rausch, William D.	Newark	510 739-6042	aa6pa@amsat.org
PBR	N6PBR		Keyes, Bob	Gardnerville	775-265-9083	
PDF	KF6PDF		Wheldon, Jeff	Gustine		jeff.wheldon@adept.com
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PGM	N6PGM		Hillis, Lily Anne	Menlo Park	325-5484	yogalily@aol.com
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PWH	KE6PWH		Califf, Howard	Santa Clara	408 247 3456	ke6pwh@arrl.net
Q	AJ6Q		Jacobs, Henry	Castro Valley		hanknat@aol.com
RFM	K6RFM		McAllister, Richard	Palo Alto	650-328-2741	rfm@eng.sun.com
RFX	KF6RFX		Cutler, James	Standord	650-497-1482	jwc@standord.edu
ROM	WA6ROM	F	Stein, Seymour			
RY	N6RY		Conboy, Terry	Carlsbad	760-730-3246	tconboy@tnc.airtouch.com
SBO	WA6SBO		Melvin, Jay	Half Moon Bay	650 726 6804	jmelvin@infopath.com
SO	AB6SO		Black Jr., Victor	Redwood City	650-366-0636	ab6so@smrn.com
SXQ	N6SXQ	F	Izuta, Saeko	Newark	510 739 6042	
TFT	W6TFT		Russell, Al	Redwood City	650-365-4258	
TIP	N6TIP		Allen, Jim	Redwood City	650-364-2730	
TQH	W6TQH		Gaynon, Michael	Palo Alto	650-853-6049	
TXB	KF6TXB		Clement, Ed	Pescadero	650-851-2084	kf6txb@yahoo.com
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UZX	KF6UZX		Mallory, Seth	Palo Alto		sethmallor@aol.com
VFY	KF6VFY	F	Friedlander, Erik			
VG	W6VG		Panton, Ron	Menlo Park	650-854-4814	w6vg@aol.com
VSC	KF6VSC	F	Mallory, Ken	Palo Alto		
VSN	N6VSN		Ronsse, David	Santa Clara	408-244-6452	ronssito@aol.com
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W	WS6W		Bailey, Dave	Falls Church, VA	703-356-8804	ws6w@hotmail.com
WCI	KC6WCI	F	Koelman, Kurt			
WL	W6WL		Smith, Craig	Redwood City	650-365-7369	n6itw@aimnet.com
WLA	N6WLA		Wilson, Jeff	Menlo Park	650-323-7016	cyrefco@ix.netcom.com
WMH	WB6WMH	F	Shulman, Bea	Palo Alto	650-327-8919	
WXK	KE6WXK		Le Blanc, Frank	Redwood City	650-368-7166	
YLN	K6YLN		Freeman, Dennis	Loma Mar	650-879-0829	dennis@programmer.net
YMR	W6YMR		Friebertshauer, R	Newcastle		
YSO	WA6YSO		Dorrance, Dave	Redwood City		
YT	K6YT	F	Canham, Fred			
ZEZ	KF6ZEZ		Coker, John L.	Hillsborough		
ZGI	WA6ZGI		Towle, Stan	Menlo Park	322-0890	wa6zgi@earthlink.net
ZTR	KD6ZTR		Holtzman, Richard	Redwood City	650-367-9431	rholtzma@aol.com
ZVJ	KF6ZVJ		Mariani, William	San Carlos		

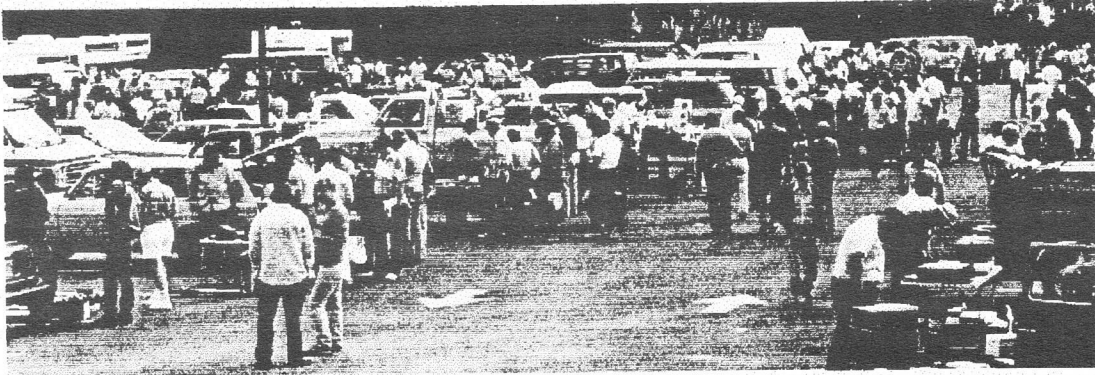
	A	B	C	D	E	F
1	CallSign	Name	Address	City	St	Zip
2	N6TIP	Allen, Jim	973 Stony Hill Road	Redwood City	CA	94061-1136
3	W6JOV	Allustiarti, Ray	1812 El Verano Way	Belmont	CA	94002-3631
4	K6EHS	Anderson, Andy	Silent Key			
5	W6CPK	Andrews Jr, C.A.	1276 Susan Way	Sunnyvale	CA	94087-1556
6	W6GCG	Andrews, Bertha	1276 Susan Way	Sunnyvale	CA	94087-1556
7	N6FFC	Ashby, Bill	1450 Jeffery Ave	San Jose	CA	95118
8	W60EB	Babcock, Dean	400 Cervantes Rd	Portola Valley	CA	94028-7620
9	WS6W	Bailey, Dave	2042 Peach Orchard Dr #213	Falls Church	VA	22043
10	KD6CNU	Barnett, Stephen	P.O. Box 245	Coulterville	CA	95311-0245
11	KB6GWK	Bisio, Bob	2160 Santa Cruz Ave #13	Menlo Park	CA	94025-6338
12	AB6SO	Black Jr., Victor	18 Sycamore Court	Redwood City	CA	94061-2618
13	WA6GGW	Buchhass, Carl	4189 Cherry Oaks Place	Palo Alto	CA	94306-3842
14	KE6PWH	Califf, Howard	1734 Franck Ave	Santa Clara	CA	95051
15	K6YT	Canham, Fred	Silent Key			
16	NC6U	Carmichael, Ron	220 Oakview Drive	San Carlos	CA	94070-4537
17	KF6LWZ	Cascone, Thomas	214 N. Clark Ave	Los Altos	CA	94022-2350
18	KG6ELY	Chester, Ron	706 Colorado Ave #A19	Palo Alto	CA	94303
19	KF6TXB	Clement, Ed	PO Box 153	Pescadero	CA	94060
20	KF6ZEZ	Coker, John L.	723 Chateau Drive	Hillsborough	CA	94010-6404
21	KE6PFF	Cooper, David	2260 Bay Road	Redwood City	CA	94063-3026
22	W6VTK	Conant, Don	22433 Balustrol Court	Cupertino	CA	95014-3948
23	N6RY	Conboy, Terry	1865 Spyglass Ct	Carlsbad	CA	92008-3770
24	K6DLC	Curry, Dan	2113 Madison Avenue	Redwood City	CA	94061-1330
25	KF6RFX	Cutler, James	12 A Escondido Village	Standord	CA	94305
26	KR6CD	Daane, Jack	355 N. Fremont St.	San Mateo	CA	94401-1831
27	KF6BKL	Davidson, Herb	3612 Kendra Way	San Jose	CA	95130-1329
28	KE6LSP	DeFrancesco, Frank	2469 High Street	Palo Alto	CA	94301-4229
29	WA6YSO	Dorrance, Dave	1216 Fernside	Redwood City	CA	94061-1915
30	KB6BPM	Dueker, Kenneth	37 Ringwood Ave	Atherton	CA	94027-2231
31	N6CEE	Enderby, Chuck	1852 Edgewood Dr.	Palo Alto	CA	94303-3015
32	WA6NCX	Ferranti, Rick	1341 Cedar St.	San Carlos	CA	94070-4755
33	K6TYO	Fies, William J.	155 Cherokee Way	Portola Valley	CA	94028-7621
34	WA6PVC	Fraser, Ed	2315 Cheshire Way	Redwood City	CA	94061
35	K6YLN	Freeman, Dennis	8170 Pescadero Creek Rd.	Loma Mar	CA	94021-9701
36	W6YMR	Friebertshouser, R	3040 Edgewood Lane	Newcastle	CA	95658-9314
37	AD6JA	Friedlander, Benjamin	Rm 119 Baskin Engr Bldg U of C	Santa Cruz	CA	95064
38	KF6Vfy	Friedlander, Erik				
39	AD6MX	Furman, Jeffrey	1449 Yukon Drive	Sunnyvale	CA	94087-4451
40	WB6KJE	Gavin, Mike	132 Alta Vista Road	Woodside	CA	94062-3503
41	KE6FBy	Gaynon, Laura	1340 Hamilton Avenue	Palo Alto	CA	94301-3122
42	KF6JEN	Gaynon, Lisa	1340 Hamilton Avenue	Palo Alto	CA	94301-3122
43	W6TQH	Gaynon, Michael	1340 Hamilton Avenue	Palo Alto	CA	94301-3122
44	KF6OBX	Gaynon, Susan	1340 Hamilton Avenue	Palo Alto	CA	94301-3122
45	W6FNJ	Girerd, Rene A.	200 Iris Way	Palo Alto	CA	94303-3039
46	N6AN	Godfrey, Hal	Silent Key 8/11/99			
47	WD6FAF	Grandjean, Charles	528 Sunnymount Avenue	Sunnyvale	CA	94087-1867
48	W9DDN	Griffith, Bill	156 Burns Ave.	Atherton	CA	94027-3030
49	N6PGM	Hillis, Lily Anne	141 University Drive	Menlo Park	CA	94025-5332
50	KD6ZTR	Holtzman, Richard	1871 Maddux Drive	Redwood City	CA	94061-3201
51	N6DQ	Huisman, Rick	PO Box 489	San Carlos	CA	94070
52	N6SXQ	Izuta, Saeko	6249 Marguerite Dr	Newark	CA	94560-4705
53	AJ6Q	Jacobs, Henry	21966 Dolores St Apt 310	Castro Valley	CA	94546-6965
54	W9ABZ	Jeffrey, Steve	2680 Fayette Dr #510	Mtn View	CA	94040
55	KF6KVG	Johnson, Robert	230 Erica Way	Portola Valley	CA	94028
56	N6NU	Junge, Andreas	2275 Sharon Road #102	Menlo Park	CA	94025-6747
57	N6OLD	Kaiser, Bill	2451 Burnham	Palo Alto	CA	94303
58	K6ATZ	Katz, Joe	PO Box 611953	San Jose	CA	95161-1953
59	KB6LT	Katz, Nolan	1030 Silver Hill Rd	Redwood City	CA	94061
60	N6PBR	Keyes, Bob	979 Rubio Way	Gardnerville	CA	89410
61	N6NFI	Klibo, Roif	3465 Bryant St.	Palo Alto	CA	94306-3543
62	W0BBV	Knutson, Marty	27999 Via Vantana	Los Altos Hills	CA	94022-3224
63	KC6WCI	Koelman, Kurt	Silent Key 6/24/98			

	A	B	C	D	E	F
1	CallSign	Name	Address	City	St	Zip
64	KF6KYL	Kohli, John	785 Greer Road	Palo Alto	CA	94303-3024
65	W6ISO	Kohlmoos, Kit	2334 Vera Ave	Redwood City	CA	94061-1228
66	KM6EP	Kors, Richard E.	119A Flynn Avenue	Mountain View	CA	94043-3946
67	KR6DD	Korsak, Andy	504 Lakemead Way	Redwood City	CA	94062-3919
68	KD6KYT	Korte, Bob	605 Spar Drive	Redwood City	CA	94065-1110
69	N6HM	Krawetz, Howard M	654 Barnsley Way	Sunnyvale	CA	94087-3421
70	K6JKG	Lane, Gill	796 Clara Drive	Palo Alto	CA	94303-3905
71	KE6WXX	Le Blanc, Frank	997 Alameda	Redwood City	CA	94061-1319
72	KR6BB	Londero, George	1004 Arlington Lane	Daly City	CA	94014-3498
73	KF6UZX	Mallory, Seth	391 Creekside Dr.	Palo Alto	CA	94306-4509
74	KF6VSC	Mallory, Ken	391 Creekside Dr.	Palo Alto	CA	94306-4509
75	KE6JGV	Mann, Alan	1355 American Way	Menlo Park	CA	94025-6001
76	KF6ZVJ	Mariani, William	267 Vine Street	San Carlos	CA	94070-2009
77	K6ISH	Matson, Walter K.	925 Bauer Drive	San Carlos	CA	94070-3701
78	K6RFM	McAllister, Richard	149 Webster Street	Palo Alto	CA	94301-1232
79	KA6LZI	McElhinney, W.G.	101 Alma St., Suite 807	Palo Alto	CA	94301-1009
80	N6DJM	Mecham, Doug	290 Parkside Drive	Palo Alto	CA	94306-4530
81	KG6CHI	Meek, Richard	58 Devonshire Ave	Mountain View	CA	94043-2162
82	WA6SBO	Melvin, Jay	80 North Cabrillo Hwy Q419	Half Moon Bay	CA	94019-1667
83	KG6ENH	Mills, Eddie	1451 Plumas Ave	Menlo Park	CA	94025-1263
84	WB6IMX	Montoya, Al	P.O. Box 2505	Menlo Park	CA	94026-2505
85	KF6CCZ	Montoya, Wendy	P.O. Box 2505	Menlo Park	CA	94026-2505
86	K6DPW	Nelson, Don	522 Madison Avenue	Redwood City	CA	94061-1643
87	KF6NCS	Nelson, Zack	522 Madison Avenue	Redwood City	CA	94061-1643
88	N6NXI	Overstreet, Scott	23200 Encinal Ct.	Los Altos	CA	94024-6442
89	KG6DHD	Owen, Thomas	21 Stockbridge Ave	Atherton	CA	94027
90	W6VG	Panton, Ron	5 Cedar Court	Menlo Park	CA	94025-5901
91	K6URO	Porter, Wallace	3328 Kenneth Drive	Palo Alto	CA	94303-4214
92	KO6GM	Price, Jim	109 Wisteria Cir	Cloverdale	CA	95425-5418
93	AA6PA	Rausch, William D.	6249 Marguerite Dr	Newark	CA	94560-4705
94	WD6AF	Ringo, David	1259 ElCamino Real #292	Menlo Park	CA	94025
95	K6AL	Roche, Curtis	Silent Key			
96	N6VSN	Ronsse, David	1787 Eberhard St	Santa Clara	CA	95050-4013
97	W6TFT	Russell, Al	2505 Hopkins Ave.	Redwood City	CA	94062-2155
98	K6JBR	Scherf, Tom	PO Box 3483	Show Low	AZ	85902-3483
99	K1DIT	Schliebus, Doug	35 Ranch Road	Woodside	CA	94062-4809
100	WA6HLE	Schumacher, Len	902 Avon St.	Belmont	CA	94002-1806
101	KN6GW	Shadowens, Lamont	170 Hardwick Road	Woodside	CA	94062-2323
102	KG6EED	Shapiro, Lorna				
103	W6EBY	Shulman, Jack	789 Garland Drive	Palo Alto	CA	94303-3604
104	WB6WMH	Shulman, Bea	789 Garland Drive	Palo Alto	CA	94303-3604
105	KE6CHQ	Smith, Bill	611 Harrison Ave	Redwood City	CA	94062-1034
106	W6WL	Smith, Craig	3753 Farmhill Blvd	Redwood City	CA	94061-1820
107	KM6LA	Stanford, Lee	P.O. Box 1761	Fremont	CA	94538-0176
108	WA6ROM	Stein, Seymour	Silent Key			
109	W6APZ	Stiebel, Rich	840 Talisman Drive	Palo Alto	CA	94303-4435
110	K6FS	Stuntz, Steven	164 Oak Court	Menlo Park	CA	94025-2837
111	W6GNX	Tiffany, Willard	880 Coleman Ave	Menlo Park	CA	94025-2458
112	WA6ZGI	Towie, Stan	P.O. Box 2754	Menlo Park	CA	94026-2754
113	KF6JMQ	Trask, Donald	3383 Burgundy Drive	San Jose	CA	95132-3003
114	W6ISQ	Troster, John	82 Bellbrook Way	Atherton	CA	94027-6406
115	KC6NFE	Troster, Marguerite	82 Bellbrook Way	Atherton	CA	94027-6406
116	N6NV	Tucker, Gerald	1112 Ramona St.	Palo Alto	CA	94301-2445
117	KC6IJE	Vandenheede, T.M.	541B Cowper St	Palo Alto	CA	94301-1803
118	W6AKR	Vickery, Leslie	980 Third St.	Redwood City	CA	94063-4005
119	AB9U	Warren, Wil	29149 Rockport Way	Hayward	CA	94544-6417
120	KF6PDF	Wheldon, Jeff	100 Via Jodi	Gustine	CA	95322
121	KA7TXV	Wilhite, Joel	701 Menlo Oak Dr	Menlo Park	CA	94025-2351
122	N6WLA	Wilson, Jeff	660 Berkeley Avenue	Menlo Park	CA	94025-2325
123	W6ARA	Zobel, Jerome	Silent Key		CA	
124	AD6FX	Zweig, Jonathon	365 Colorado Ave	Palo Alto	CA	94306-2444

Suffix	CallSign	Fam	Name	City	Phone (H)	Email
ABZ	W9ABZ		Jeffrey, Steve	Mtn View	650-948-1832	
AF	WD6AF		Ringo, David	Menlo Park		
AKR	W6AKR		Vickery, Leslie	Redwood City	368-5175	
AL	K6AL	F	Roche, Curtis			
AN	N6AN	F	Godfrey, Hal			
APZ	W6APZ		Stiebel, Rich	Palo Alto	650-494-0128	w6apz@svpal.org
ARA	W6ARA	F	Zobel, Jerome			
ATZ	K6ATZ		Katz, Joe	San Jose	408-919-6283	kq6mm@aol.com
BB	KR6BB		Londero, George	Daly City	415-333-4268	
BBV	W0BBV		Knutson, Marty	Los Altos Hills	650-941-3140	
BKL	KF6BKL		Davidson, Herb	San Jose	408-984-7065	kf6bkl@hotmail.com
BPM	KB6BPM		Dueker, Kenneth	Atherton		kdueker@post.harvard.edu
CCZ	KF6CCZ	F	Montoya, Wendy	Menlo Park	650-365-3004	kf6ccz@att.net
CD	KR6CD		Daane, Jack	San Mateo	650-347-2736	jack_daane@ieee.org
CEE	N6CEE		Enderby, Chuck	Palo Alto	650-321-1154	chuck_enderby@webtv.net
CHI	KG6CHI		Meek, Richard	Mountain View	650-969-7880	
CHQ	KE6CHQ		Smith, Bill	Redwood City	650-366-9173	ke6chq@arrl.net
CNU	KD6CNU		Barnett, Stephen	Coulterville	209-878-3829	
CPK	W6CPK	F	Andrews Jr, C.A.	Sunnyvale	408-736-6604	
DD	KR6DD		Korsak, Andy	Redwood City	650-366-5228	andrew.korsak@readrite.com
DDN	W9DDN		Griffith, Bill	Atherton	322-4551	
DHD	KG6DHD		Owen, Thomas	Atherton	650-365-6771	tom@tomowen.net
DIT	K1DIT		Schliebus, Doug	Woodside	650-851-0727	Schliebus@aol.com
DJM	N6DJM		Mecham, Doug	Palo Alto	650-856-4039	
DLC	K6DLC		Curry, Dan	Redwood City	650-366-7846	
DPW	K6DPW		Nelson, Don	Redwood City	650-364-7385	k6dpw@pacbell.net
DQ	N6DQ		Huisman, Rick	San Carlos		rhuisman2@home.com
EBY	W6EBY		Shulman, Jack	Palo Alto	650-327-8919	
EED	KG6EED	F	Shapiro, Lorna			
EHS	K6EHS		Anderson, Andy		650-494-0831	
ELY	KG6ELY		Chester, Ron	Palo Alto	650-473-1622	ron@taxhelp.com
ENH	KG6ENH		Mills, Eddie	Menlo Park	650-324-4919	Pacesetter150@yahoo.com
EP	KM6EP		Kors, Richard E.	Mountain View	650-965-3766	dk@ofkors.com
FAF	WD6FAF		Grandjean, Charles	Sunnyvale	408-739-5185	wd6faf@webtv.net
FBY	KE6FBY	F	Gaynon, Laura	Palo Alto	650-853-6049	
FFC	N6FFC		Ashby, Bill	San Jose	409 267 3118	
FNJ	W6FNJ		Girerd, Rene A.	Palo Alto	650-856-6044	
FS	K6FS		Stuntz, Steven	Menlo Park	322-4952	s.stuntz@genie.com
FX	AD6FX		Zweig, Jonathon	Palo Alto	650-324-8751	jzweig@pacbell.net
GCG	W6GCG		Andrews, Bertha	Sunnyvale	408-736-6604	
GGW	WA6GGW		Buchhass, Carl	Palo Alto	650-493-8032	
GM	KO6GM		Price, Jim	Cloverdale	707-894-0101	hjamesprice@home.com
GNX	W6GNX		Tiffany, Willard	Menlo Park	324-4524	
GW	KN6GW		Shadowens, Lamont	Woodside		shad@ix.netcom.com
GWK	KB6GWK		Bisio, Bob	Menlo Park	650-234-9605	
HLE	WA6HLE		Schumacher, Len	Belmont	650-591-4385	
HM	N6HM		Krawetz, Howard M	Sunnyvale	408-739-7936	
IJE	KC6IJE		Vandenheede, T.M.	Palo Alto	650-325-7974	tmv@tlab.com
IMX	WB6IMX		Montoya, Al	Menlo Park	650-365-3004	wb6imx@att.net
ISH	K6ISH		Matson, Walter K.	San Carlos	650-593-3912	
ISO	W6ISO		Kohlmoos, Kit	Redwood City	650-366-7813	kmoos@pacbell.net
ISQ	W6ISQ		Troster, John	Atherton	650-854-3939	jmtroster@aol.com
JA	AD6JA		Friedlander, Benjamin	Santa Cruz		friedlan@cse.ucsc.edu
JBR	K6JBR		Scherf, Tom	Show Low	520-369-4068	
JEN	KF6JEN	F	Gaynon, Lisa	Palo Alto	650-853-6049	
JGV	KE6JGV		Mann, Alan	Menlo Park	650-327-7761	allen.mann@sv.sc.philips.com
JKG	K6JKG		Lane, Gill	Palo Alto	650-856-0154	
JMQ	KF6JMQ		Trask, Donald	San Jose	408-251-6494	trask@best.com
JOV	W6JOV		Allustiarti, Ray	Belmont	650-591-1995	raymond.allustiarti@cwix.com
KJE	WB6KJE		Gavin, Mike	Woodside	650-851-8699	wb6kje@juno.com
KVG	KF6KVG		Johnson, Robert	Portola Valley	650-854-5117	
KYL	KF6KYL		Kohli, John	Palo Alto	650-856-3587	jkohli@pacbell.net
KYT	KD6KYT		Korte, Bob	Redwood City	650-595-1842	rgk4u@aol.com
LA	KM6LA		Stanford, Lee	Fremont	510-656-7311	

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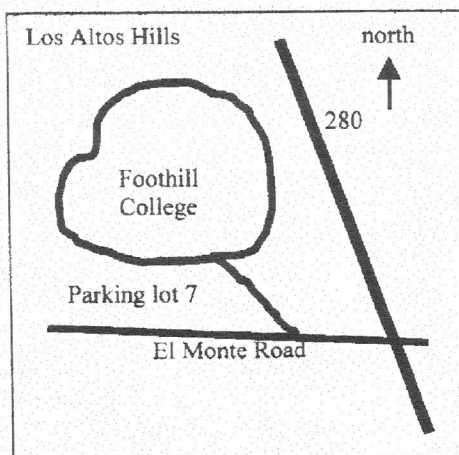
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Locator Map:



Date	Beneficiary Organization
March 11	South Peninsula Emergency Communications System (SPECS)
April 8	Foothill Amateur Radio Society (FARS)
May 13	Silicon Valley Emergency Communications Society (SVECS)
June 10	West Valley Amateur Radio Association (WVARA)
July 8	Palo Alto Chapter, American Red Cross
August 12	Palo Alto Amateur Radio Association (PAARA)
September 9	San Jose Chapter, American Red Cross
October 14	Santa Clara County Amateur Radio Association (SCCARA)

NEED MORE INFORMATION?

Call on the SPECS repeater (145.27 MHZ-) or phone Perham Foundation at (408) 734-4453

LETTERS TO CONGRESS NEEDED

® Don Trask, KF6JMQ

The Amateur Radio Spectrum Protection Act of 2001, introduced earlier this month in the US House, now is officially a Senate bill, S.549. Republican Sen Michael Crapo of Idaho introduced the bill in the upper chamber March 15.

Democratic Sen Daniel Akaka of Hawaii was a cosponsor. The bill has been referred to the Senate Commerce, Science, and Transportation Committee. In introducing the Senate measure again this year, Crapo and Akaka referred to the importance of Amateur Radio in providing communication in times of disaster.

S.549 is identical in its wording to H.R.817, introduced in the House of Representatives March 1 by Rep Michael Bilirakis of Florida. If approved by both chambers and signed by Pres George W. Bush, the Spectrum Protection Act would require the FCC to provide equivalent replacement spectrum should it ever reallocate primary Amateur Radio spectrum to another service. The same requirement would apply if the FCC acted to diminish any secondary amateur allocations or to make additional allocations in ham bands that diminish their utility.

Bilirakis and Crapo introduced the Spectrum Protection Act in a past session of Congress at the request of the ARRL. The League's Legislative and Public Affairs Manager Steve Mansfield, N1MZA, says he's encouraged by the fact that the Spectrum Protection bill is getting a head start with early introduction in both chambers this time around.

In order to get support in Congress, PAARA members are encouraged to write to their Federal legislators. Below is a sample letter for your convenience.

To:(your Representative's/Senator's name and address)

SUBJECT: HR 817 (or S.549 if letter to senator)

Dear (Representative/Senator) (Name):

As one of the nation's more than 650,000 licensed Amateur Radio operators, I urge you to sign on as a co-sponsor to ("HR 817" if writing to your Representative, "S.549" if writing to your Senator), the Amateur Radio Spectrum Protection Act of 2001.

This bill, introduced by ("Representative Bilirakis of Florida on March 1, 2001" if writing to your Representative, "Senators Crapo and Akaka" if writing to your Senator), is a non-partisan, non-controversial measure designed to afford a measure of protection to Amateur Radio frequencies used by radio amateurs in California and elsewhere to provide emergency communication, technical experimentation and recreation.

The bill would require the Federal Communications Commission to provide "equivalent replacement spectrum" in the event it becomes necessary to reallocate radio frequencies currently allocated to the Amateur Service.

This is a matter of fairness, and is in the national interest. The bill would help ensure Amateur Radio's continued public service role to the people of the State of California.

Sincerely,

(Your name and address, including email address)

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WHAT: The Foothill Amateur Radio Society (FARS) presents the "No [Morse] Code Technician Class" amateur radio license course. During this course, you will NOT ONLY learn what you need to know to get your first federal amateur radio license, but you will also learn what to do once you have your license and how to use the information you learn. The FCC exam (35 multiple-choice questions - of which you need only 26 correct to pass) covers operating practices, rules and regulations, and basic radio theory. The exam will be given during the last class session. Free further training is available through the FARS club.

WHEN: Six Thursday evenings, April 26 - May 31, 7 PM - 10 PM

WHERE: Terman Library Conference Room (next to the JCC), 661 Arastradero, Palo Alto, CA

FEES: \$15 Students (under 18), \$25 Adults Payable upon registration, to cover the cost of study materials. Additional examination fee of \$8, payable to the VEC prior to the FCC exam.

BONUS: One year **FREE** membership in *The Foothill Amateur Radio Society* for course graduates.

WHO: This class is **open to all**. There are no age limits, or minimum requirements.

HELP: FARS volunteers will help answer your questions before the class starts, during the class, and after you get your ham license.

RESERVATIONS: Contact: Rich Stiebel, (650)494-0128, email: W6APZ@arrl.net Further information: <http://www.fars.k6ya.org/classes.html>

(Continued from page 37) PAARA PONDERINGS

ver/mercury amalgam tooth filling, which started to detect signals from a nearby AM broadcast station. It caused him to hear strange music and voices by bone conduction. He thought he was possessed, but his dentist finally figured out the problem and replaced the filling. It appeared to be a clear-cut case of a "resonant cavity".

(Continued from page 38) WEB WANDERINGS

sun's influence can become so great on earth that the planet's magnetic poles will also shift. This has happened many times in the past, but will only occur once every few hundred thousand years. Luckily this is not apt to happen very often since the disruption could be so violent that it could cause the earth's mantle to crack causing all sorts of chaos here at home. Not to mention that we would have to get accustomed to speaking of Florida as the Atlantic North West. For the full story, go to <http://science.nasa.gov/headlines/y2001/ast15feb_1.htm?list161387>.

With the recent downturn in Internet based businesses, there's been a lot of speculation about whether the Internet will survive. Undoubtedly there will continue to be certain types of business still being conducted via the Internet although there may be a complete shake out of companies that depend heavily on advertising for their income. Educational, government and individual web sites may become more dominant in the future. For a Power Point presentation aimed at Amateur Radio operators who are interesting in becoming more proficient at navigating the Internet, go to Web Surfing for Hams <<http://www.cqp.org/wfsh/wsfhindx.htm>>.

The Motorcycle Amateur Radio Club has a new Bay Area chapter. The web site at <<http://www.ba-marc.org>> has photos of antenna mounting brackets custom designed for their club members as well as mounting ideas for radios, GPS units, helmet communication connections and intercoms. PAARA member Dan Curry K6DLC is linked to the site.

A person's true character is revealed by what he does when no one is watching.

® Anonymous



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All ad rates listed are per issue only.

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2. For Profit organizations and/or individuals: \$5-business card size, \$25-half page, \$50 full page or back cover.

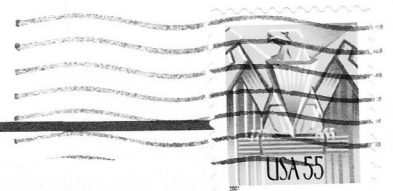
These fees may be reduced or waived in exchange for a valuable consideration that is given to the Association or its general membership. Such consideration must be in addition to any existing arrangements with the association.

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 Bob Korte

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

- Club meetings are on the first Friday of each month, 7:30pm at the Menlo Park Recreation Center, 700 Alma Street, Menlo Park, CA.
- Radio NET every Monday evening, at 8:30pm, on the 145.230-600 MHz repeater, PL tone off.

Membership in PAARA is \$12.00 per calendar year which includes a subscription to PAARAgaphs, \$6 for additional family members (no newsletter).
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 PAARAgaphs Newsletter
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FIRST CLASS MAIL

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www.arrl.org/wlaw/prop/



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 • 6W 2m, 5W UHF 6713.8 VDC
 • Appearance Display
 • CTCSS Built In • Backlit keypad
Call For Low Price!

TH-22AT High Power Also Avail
 • Ultra Compact
 • 2M HT, 5W optional
 • 40 memories
 • Encode Built-in

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APRS TIC Features Built In!

TH-D7A 2M/40
 • Built-in 1200/9600 Band TNC
 • APRS Compatible
 • DX Packet Cluster Monitor
 • 200 Mems, CTCSS
 • VC-HI Messaging Control
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TS-870S HF Transceiver
 • DSP in LF Stage • 100W, 12V DC
 • Dual mode noise reduction
 • Digital Filtering (no opt., filters req.)
 • Built-in RS232C Windows software incl.

TM-261A 2M Mobile
 • 50W • Mid and Low • Multi-Spec
 • 61 Mem. Channels • Alpha Numeric Function
 • Dual Menu, DTMF Memory
 • Backlit mic & built-in encode
Call Now For Special Low Price!

TS-570DD/TS-570SG DSP Enhanced
 • 100W HF, 1100W on 6M (TS-570SG only)
 • DSP, CW Auto Tune • AutoTuner and 6M
 • DSP • Large LCD Display • Elec. Keypad
 • HF/2 Radio Control Program Compatible
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TM-V7A 2M/40MHz
 • 50W/35W • 280 Mems • Visual Scan
 • Alpha Numeric • EncDec & Duplex Built-in
 • Computer Programmable • 9600 Band Ready
 • Cool-blue Reversible LCD • Backlit Mic
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TS-50S HF Transceiver
 • TS-50S - World's smallest HF trans
 • SSB, CW, AM, FM • 12V Gen. Cox. RX
 • 6.4 lbs. 7.16 x 2.4 x 9.32" • 100W out
 • 105 db dynamic range, 100 Mems.
 • Opt. ext. ant. tuners available
Call For Special Low Price!

TM-7A2AD 2M/40MHz
 • Optional 3rd band available • Backlit mic
 • Up to 300 memories • 101 PPT for front panel
 • FT Encode Built-in • Described in front panel
Call Now For Your Low Price!

TM-D700A 2M/40 Dualband
 • 50W VHF 35W UHF • Opt. Voice Synthesizer
 • Receives 118-1300 MHz (cell blocked)
 • Remote Head Inst. only (kit included)
 • 200 Memories • Built-in 1200/9600 Band TNC
 • Advanced APRS Features
 • DX Packet Cluster
 • 100e Scan • GPS-VC-HI/PC Ports

