K6QLF

Amateur Radio Club of Alameda

Newsletter

Alameda's Weekly Disaster Preparedness Net

Each Thursday at 1900 on
146.880 MHz (PL 77)
Net Control:
March 6: Tom **KG6MAC**
March 13: Joe **KC6ZZT**
March 20: Max **KA1MAX**
March 27: Bruce **KI6CYT**

ARRL Continuing Education Course Information

The following ARRL Continuing Education Courses begin March 21, 2008 with registration required before March 9, 2008. More details and registration available online at www.arrl.org/cce/courses.html: EC 002 - Emergency Communications Level 2; EC 004 - Antenna Modeling; EC 005 - HF Digital Communications; EC 008 - VHF-UHF Beyond Repeaters; EC 011 - RF Propagation.

The following ARRL Continuing Education Courses begin April 7, 2008 with registration required before Mar 23rd, 2008: EC 001 - Emergency Communication Level 1; EC 006 - RF Interference; EC 009 - Antenna Design & Const; EC 012 - Analog Electronics;

Presidents' Message

It may seem strange to review the previous year in March, but the timing is such that the ARCA new year starts in March following elections at the February meeting. I won't go into a full review here, but hit some of the high points of 2007. On the contesting front we have more interest than ever, and at least two more budding CW operators. The planning that went into Field Day made things go smoothly and also turned into a great social event. We hosted Technician and General License classes and as a result qualified eighteen new hams and upgraded fourteen to General class gaining several new members. We also increased our support of CERT and now provide regular continu-

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ARCA Member News

At ARCA's February meeting we had the election of officers: Pres. - David **KI6AWR**, Vice Pres. - Al **KG6HM**, Secrtary - Joe - **KC6ZZT**, Treasurer Bruce **KI6CYT**.

Steve **KI6DUW**, will be handling the Programs & Events Committee; Tom **KN6EI** is making a plan to re-build ARCA's radio shack.

Fred **KI6BES**, Sam **KJ6AF**, David **KI6AWR** and Bruce **KI6CYT** have volunteered to be monthly net operators for Alameda Hospital as part of the Bay Area Hospital Network (BAHN) which operates at noon on the last Weds. of each month on 147.060 (+PL100.)

ARCA Calendar

- March 1st - 2nd - International DX Contest (Phone)
- Mon., March 3rd, 7:00 p.m. - Shop Night, 431 Stardust Pl., Alameda
- Mon., March 17th, 7:00 p.m. - Extra Licensing Class
- Friday, March 28th. 7:00p.m. - ARCA's Regular Monthly Meeting 431 Stardust Place, Alameda
- Mon., April 7th, 7:00 p.m. - Shop Night, 431 Stardust Pl., Alameda
- Mon., April 21st, 7:00 p.m. - Extra Licensing Class
- Friday, April 25th - Regular ARCA's Regular Monthly Meeting 431 Stardust Pl., Alameda
- April 27th - ORCA/EBARC/ARCA VE Session at Fire Station #1 Media Room, 1605 Martin Luther King at 17th Street, Oakland

Al KG6HM Writes Book

Radio frequency integrated circuits are the tiny semiconductor chips which serve as the radio transmitters and radio receivers inside most of today's wireless devices. To name a few examples, cell phones, Bluetooth "ear buds," and Wi-Fi routers all owe their phenomenal capabilities and compact size to radio frequency integrated technology. Al has recently written a book, *Designing Bipolar Transistor Radio Frequency Integrated Circuits*, (Artech House, 2008) devoted to the science and art of designing radio frequency integrated circuits using bipolar transistor technology. This book is based on a series of graduate level classes (ELEN 351, ELEN 359/354) that he has taught at Santa Clara University since 2002.

Bipolar transistors were the original solid state amplifiers invented by the Nobel Prize winning team of Shockley, Brattain, and Bardeen in 1947. Their invention, a point contact transistor, was actually a primitive ancestor of today's bipolar transistor. In recent years, this class of transistor has largely been replaced by field effect transistors such as CMOS and MESFETS. Although the bipolar transistor had been lagging behind the field effect transistor in terms of speed and power consumption, this performance gap has recently been closed as a direct result of a new development in bipolar transistor technology called the heterojunction. To optimize a bipolar transistor's performance, heterojunction bipolar transistors use a structure containing two or more different crystal types with different band gap energies. This technique achieves significant performance advantages over the traditional method of tailoring of the doping impurity levels within the transistor to optimize performance. H. Kromer received the Nobel Prize in 2000 for his pioneering work on heterojunction devices in the late 1950's. Some examples of heterojunction bipolar transistor structures include SiGe, InGaP/GaAs, and InP. These different "flavors" of heterojunction bipolar transistors, as a family, behave as normal bipolar transistors, but with significantly enhanced performance. All of the

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ARCA Shop Nights

Shop Nights consist of members bringing in tools, parts, and test equipment, so that they can work on projects together. This gives people a chance to use test equipment they may not own, and provides a chance to learn new skills. Shop Nights are on the first Monday of the month at 7 pm. The next two shop nights are on March 3rd and April 7th, 2008

Education/Training

Our next five week Technician Level License class begins on April 8th at 7:00 pm at the Alvarado School, 5625 Sutter Ave., Richmond CA 94804. Each session is about 2 1/2 hours in length. There is no instruction fee, but students will be required to have a copy of the ARRL Ham Radio License Manual (Level 1 Technician).

A special VE session will be held on May 13th 2008. The session is open to all who are interested in getting their Technician license or upgrading their current license. A fee of $14 is applicable.

For the first time we are adding a new class to assist those who have just qualified for the Technician class license. This four week class begins on May 20th at the Alvarado school from 7:00 pm to 9:30 pm. It will be a practical "hands-on" class which will cover the basics of programming and operating a dual band VHF/UHF radio as well as simplex operation and the use of repeaters. Graduating participants should complete the class with the skills and confidence necessary to operate on the VHF and UHF bands.

These classes are planned by the East Bay Elmers, a joint effort of ARCA, ORCA and EBARC.

WIN System Monthly Breakfast

The WIN System (http://www.winsystem.org/) March Breakfasts will be next Saturday, March 8, 2008. There will be one in Southern California and one in Northern California, both starting at 9:00 A.M.

The Northern California meeting will be at:
Hometown Buffet
NE corner of Lewelling Blvd and Washington Ave
699 Lewelling Blvd
Suite 212 in the Greenhouse Market Place
San Leandro, CA 94579
(510) 351-5900

Shorty K6JSI, and Susan K6SLS, will both attend the Northern California breakfast this month. We plan to have a live video feed between So Cal and No Cal. You do not need to be a WIN System member, or even a ham, to attend. Everyone is welcome. Hope to see you there.

Al KG6HM Writes Book

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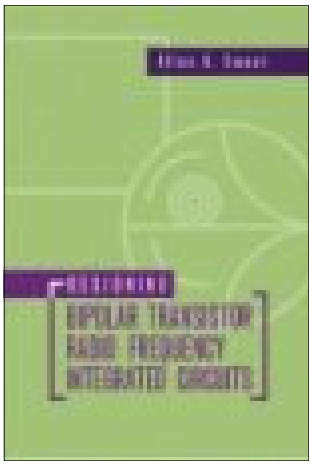
standard types of bipolar circuits work equally well with a variety of heterojunction bipolar transistors.

Bipolar transistors have some truly unique advantages when applied to radio frequency circuits. First and foremost, the phase noise associated with a bipolar transistor is considerably lower than the phase noise associated with a similar field effect transistor. This significant reduction in phase noise that is associated with bipolar transistors increases the overall signal-to-noise ratio of a radio link, raising both data rate and unit to unit range. Also, bipolar transistors operate from a single polarity power supply, and they offer significant advantages when operating as highly linear power amplifiers. Bipolar transistors also deliver excellent performance in mixer (i.e. frequency converter) circuits of all kinds. Bipolar transistors use the integrated circuit's surface area more efficiently than do their field effect cousins, leading to smaller, more compact, integrated circuit chips. Furthermore, the fabrication process that is used with bipolar transistor technology is considerably less complex than that used with an equivalent field effect transistor. This simplicity of fabrication naturally leads to higher processing yield, and lower prototyping costs relative to equivalent field effect transistor integrated circuits.



Al's book covers in depth the design of many different types of circuit topologies required for the construction of today's standard radio architectures. The circuit types described within the book include power amplifiers, low noise amplifiers, mixers, frequency multipliers, filters, phase shifters, power splitters, and couplers. Detailed circuit design examples are presented, including simulations which may be duplicated by readers with appropriate simulation software. An introduction to radio architectures, a discussion of wireless applications, and a detailed description of InGaP/GaAs and SiGe fabrication technologies are included. A discussion of physical layout and economic considerations with integrated circuits are also presented.

Al **KG6HM**

President's Message

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ing education classes on radio communications. How is the MOU with the City of Alameda doing ? well if patience is a virtue, then we are now very virtuous. Although there are many other items I could mention, I must not forget the appearance of this bi-monthly newsletter – thanks to CYT!

In 2008 we want to build on the success of the previous year. Our new planning committee is swinging into action, we are developing plans for a re-vamped shack and the installation of a fixed HF band antenna. We also want to move beyond dreaming and get our own repeater into action. We intend to find better ways to help new hams get on the air and appreciate how much fun Amateur Radio can be. We will continue to expand our association with CERT and hope to make 2008 the year when that MOU is finally approved. There are other intriguing possibilities including our relationship with the Hornet Amateur Radio Club. Above all of this however we should plan on having a lot of fun!

73, David, **KI6AWR**

ARCA Member Tries DX

Bruce **KI6CYT**'s home station consists of a Yaesu FT-897, Astron RS35M power supply and a Buddipole antenna system. With these components he thought he'd give the ARRL International DX SSB (phone) Contest a try on March 1st & 2nd.

With his only HF contesting experience being a few feeble attempts during the 2007 Field Day, he took the leap and found that between church, radio club meetings and family celebrations, he was successful in making 14 contacts in four countries. Seven were from Japan, one Aruba, five from Hawaii and one from Alaska (considered a foreign country for contesting purposes.)

Leading up to the contest, Bruce was taking the ARRL CE-011 course in Propagation and while doing that, was delighted and surprised during their exercises that he was able to listen to Australia, Marshall Islands and most of the East coast. Theses exercises consisted of listening, not contacting (that would have been too scary to actually talk to someone.)

With that confidence build-up, on Sat., the time came to actually press the PTT button and yell out the call sign, "**KI6CYT."** After a few tries, **KH7B** from Laupahoehoe, HI, responded and replied just like the QST contesting article said he would and I answered in kind, "you're 5-9 from California, QSL." Nothing to it!!!

He's looking forward to the VHF QSO Party, June 14th.

Emergency Preparedness Fair

Much to our surprise an Emergency Preparedness Fair was held on Saturday 9th February at the Community of Harbor Bay Island Community Center on Bay Farm Island. This sounded like too good an opportunity for ARCA to miss, so with only a few days notice the team whirled into action. Fred, **KI6BES**, Bruce, **KI6CYT** and David **KIAWR** set up a small booth at the fair in a strategically great part of the room. We also had help from Steve, **KI6DUW**, Marianne, **KI6MTU**, Jerry **KI6HMJ** and Rose **K6LEZ**. Other booths consisted of FEMA, the Red Cross, Alameda CERT, PG&E and several suppliers of emergency preparedness items. The fair was busy from 10:00 am to 2:00 pm and was a great success. While there we met several people interested in amateur radio as well as rubbing shoulders with Alice Lai-Bitker (Alameda District 3 Board of Supervisors) and David Kapler, Alameda's new Fire Chief. Another couple of opportunities to talk about the MOU again??!

fr. left-AFD Chief, David Kapler, Bruce **KI6CYT** & David **KI6AWR**

fr. left - Rose **K6LEZ**, David **KI6AWR**, Bruce **KI6CYT**, Fred **KI6BES** and Steve **KI6DUW** man the booth at the Disaster Preparedness Fair

Solar Cycle 24 Begins

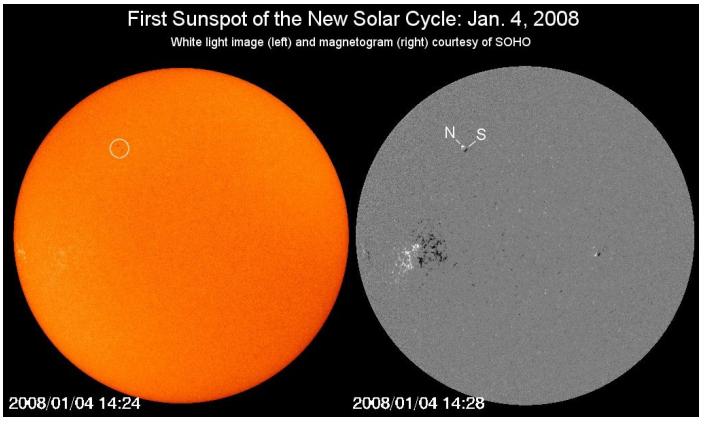
On January 4, 2008, a reversed-polarity sunspot appeared—and this signals the start of Solar Cycle 24," says David Hathaway of the Marshall Space Flight Center.

Solar activity waxes and wanes in 11-year cycles. Lately, we've been experiencing the low ebb, "very few flares, sunspots, or activity of any kind," says Hathaway. "Solar minimum is upon us."

The previous solar cycle, Solar Cycle 23, peaked in 2000-2002 with many furious solar storms. That cycle decayed as usual to the present quiet leaving solar physicists little to do other than wonder, when would the next cycle begin?

The answer is now.

"New solar cycles always begin with a high-latitude, reversed polarity sunspot," explains Hathaway. "Reversed polarity" means a sunspot



with opposite magnetic polarity compared to sunspots from the previous solar cycle. "High-latitude" refers to the sun's grid of latitude and longitude. Old cycle spots congregate near the sun's equator. New cycle spots appear higher, around 25 or 30 degrees latitude.

The sunspot that appeared on January 4th fits both these criteria. It was high latitude (30 degrees N) and magnetically reversed. NOAA named the spot AR10981, or "sunspot 981" for short.

article courtesy of NASA

ARCA The Amateur Radio Club of Alameda

Email: secretary@arcaham.org
Online: http://www.arcaham.org

Membership Application / Renewal Form

New Membership☐ / Renewal☐

Membership Type: Please Check the Appropriate Box:

☐Full - $12.00 ☐ Youth (Under 18) - Free ☐ Family - $25.00

Please print all information:

Name: _____ Callsign: _____
Last First MI leave blank if not applicable

Address:_____

_____

City: _____ State: _____ Zip: _____

Home Phone No.: (___)_____ Business Phone No.: (___)_____

Cellular/Other Telephone No.: (___)_____

Email Address:_____ Alternate Email:_____

License Class: _____License Expiration Date: _____

Date of Birth (optional):_____

Please answer the following:

ARRL Member? Yes ☐ No ☐If not, would you like to join ARRL through ARCA? Yes ☐ No ☐

ARES/RACES Member? Yes ☐ No ☐

How did you hear about the Amateur Radio Club of Alameda? _____

_____

List Amateur Radio activities that you are interested in:_____

_____

_____

I hereby apply for/renew my membership in the Amateur Radio Club of Alameda, and agree to abide by the bylaws of the organization.

Signed: _____ Date:_____Amount Enclosed: $_____

Internal Use Only

☐ Approved ☐ Not Approved Certified:_____ Date: _____

Amount Enclosed: $_____ Certified:_____ Date: _____

ARCA Secretary

ARCA Treasurer

ARCA

March Meeting: Friday, March .. 22nd
April Meeting: Friday, April 26th

Monthly EB Radio Club Events

4th Friday	Amateur Radio Club of Alameda 7:00 PM, 431 Stardust, Alameda
3rd Friday	Mount Diablo Amateur Radio Club
3rd Friday	Hayward Radio Club
2nd Friday	East Bay Amateur Radio Club
1st Weds.	Oakland Digital Net - 7:30 PM 442.400 MHz minus PL77
1st Sunday	Livermore Swap Meet (closed in winter)
1st Saturday	ORCA Monthly Meeting - Oakland

Amateur Radio Club of Alameda meets 7:00 PM at 431 Stardust Place on Alameda Point.

East Bay Amateur Radio Club meets at 7:30 PM at the Salvation Army, 4600 Appian Way, El Sobrante.

Hayward Radio Club meets at 7:30 PM 1401 West Winton Ave. in Hayward behind Hayward F.S.#6, next to the Hayward Air Ntl. Guard Base.

Mount Diablo Amateur Radio Club meets at 7:30 PM at Our Savior Lutheran Church, 1035 Carol Lane, Lafayette.

Oakland Radio Communication Assoc. meets 9:00 AM at F.S.# 1 at Martin Luther King @ 17th St., Oakland

ARCA on the web: arcaham.org and groups.yahoo.com /group/arcaham/

EB Weekly Nets

Thursdays 7:00 PM	Alameda Emergency Preparedness 146.88 MHz minus PL 77
Thursdays 7:30 PM	Oakland ARES/RACES Net 146.88 MHz minus PL 77
Wednesdays 7:00 PM	ACSCT Net 147.240 MHz & 442.20 MHz
Weds. 7:30 PM	Oakland Digital Net 446.000 MHz - simplex
Thursdays 7:15 PM	NALCO ARES/RACES 440.9 MHz plus PL 131.8
Mondays 7:30 PM	EBARC 10M "Explore Net" 28.425 MHz, USB
SundayVHF NTS Net 7:30 PM	145.110 (-) PL82.5

ARCA Officers

President:	David Haycock	**KI6AWR**
Vice Pres.:	Allen Sweet	**KG6HM**
Secretary:	Joe Springer	**KC6ZZT**
Treasurer:	Bruce Gillis	**KI6CYT**

Ex-Officio Directors:

CERT Liaison:	Fred Blas	**KI6BES**
RACES RO:	Sandy Lavine	**KO6JF**

ARRL Pacific Division Officers:

Director: Bob Vallio **W6RGG** - w6rgg@arrl.org
Vice Director: Andy Oppel **N6AJO** - n6ajo@arrl.org
East Bay Section Manager: James Latham **AF6AQ** - af6aq@arrl.org

The ARCA Newsletter is published every other month. Any articles can be used with attribution. Articles, news and photos submitted make for a more interesting newsletter; thank you!

Please submit materials for the next issue by April 25th to Bruce **KI6CYT,** KI6CYT@arrl.net. Thanks again!

For more information about ARCA , contact Joe **KC6ZZT** at secretary@arcaham.org