

MARCH 2011

THE MONTHLY NEWSLETTER of the SANTA CRUZ COUNTY AMATEUR RADIO CLUB

SHORT SKIP



Sub-terrain Communications

It's well known that communications can take place using the earth as a conductor, in fact the earliest long-distance communications used a single wire with the return path requiring just a connection to ground at each end. Today there is a great deal of interest in 1-Wire communications within solid-state devices using the exact same principles. Certainly these are not RF systems but Medium-Wave broadcasting does involve a layer of the top surface of the earth. The energy contained in the near-field of HF transmissions generates currents in the earth which flow back via the antenna to the source, with or without copper wire. Also in the HF far-field many paths involve reflections from the earth's surface. The earth is however a rather poor conductor which generally means power is wasted because it is dissipated as heat and dispersed in unwanted directions. Instead of just a single wire below the surface recent research suggests burying a collection of conductors either horizontally or vertically in the ground to form beam antennas. Apart from gain in efficiency these invisible antennas would make problems with homeowners and government agencies a thing of the past. The one drawback is that both ends of a link have to be using sub-surface antennas. Have you ever wondered why the 600 million Chinese have so very few amateurs? Is the answer perhaps that they have perfected these techniques for domestic use. "Not So" says Huang (BY1LO); he hopes to commercialize them in the near future with product details in a Web site at the end of March or soon thereafter. This should be something of a ground-breaking event if you pardon the pun. Check it out on www.Huangonwon.com

—Ron W6WO

NASA Explains Missing Sunspots

WASHINGTON -- NASA-sponsored research has resulted in the first computer model that explains the recent period of decreased solar activity during the sun's 11-year cycle.

This recent solar minimum, a period characterized by a lower frequency of sunspots and solar storms, was the deepest observed in almost 100 years. The solar minimum has repercussions on the safety of space travel and the amount of orbital debris our planet accumulates.

Solar scientists around the world were puzzled by the extended disappearance of sunspots in 2008-2009. Results published in Thursday's edition of *Nature* indicate the mystery may be solved.

"Plasma currents deep inside the sun interfered with the formation of sunspots and prolonged the solar minimum," says lead author Dibyendu Nandi of the Indian Institute of Science Education and Research in Kolkata.

During this deep solar minimum, the sun's magnetic field weakened, allowing cosmic rays to penetrate the solar system in record numbers, making space a more dangerous place to travel. At the same time, the decrease in ultraviolet radiation caused Earth's upper atmosphere to cool and collapse.

As a consequence space debris stopped decaying and started accumulating in Earth orbit due to decreased atmospheric drag. These effects demonstrate the importance of understanding the entire solar cycle, during both minimum and maximum.

Observations from NASA's Solar Dynamics Observatory (SDO) will eventually provide measurements that could validate the current model and provide the basis for future solar cycle prediction.

"This research demonstrates how observations from Heliophysics System Observatory missions stimulate new theories and advance modeling techniques," said Richard Fisher, director of the Heliophysics Division in NASA's Science Mission Directorate at the agency's headquarters in Washington.

This research was funded by NASA's Living With a Star Program and the Department of Science and Technology of the government of India.

For more information about the research, visit <http://www.nasa.gov/sunearth>. -- Some information from the Bozeman Daily Chronicle

—ARRL Newsletter

SCCARC Membership Renewals Deadline 3/31!

If you have already renewed your membership for 2011, thank you! If you haven't, please do it now. The renewal deadline for active members to be included in this year's member roster is March 31 (this is also the deadline for address/phone/email updates). Annual dues are \$25 for full members, \$6 each for each additional member at the same mailing address, and \$10 for full-time students age 18 or under. Dues may be paid in cash or check (payable to SCCARC) in person, at regular Club meetings, or checks may be mailed to SCCARC, P.O. Box 238, Santa Cruz, CA 95061-0238.

--Kathleen KI6AIE, Treasurer, SCCARC

CLUB MEETING FRIDAY MARCH 18, 7:30PM

The Lost Art of Cable Lacing

By Dan Romanchik, KB6NU

The Make: magazine blog is a wealth of information for amateur radio operators. Recently, they ran a post on what they consider to be on the "lost technology" of cable lacing <<http://blog.makezine.com/archive/2009/07/lost-knowledge-cable-lacing.html>>.

The blog post does a great job of explaining the technique and includes several illustrations. One of them <http://cdn.makezine.com/upload/2009/10/lost_knowledge_cable_lacing/cableLacing6b.gif> is a drawing from an old ARRL handbook. There are also a link to the Wikipedia page on cable lacing <http://en.wikipedia.org/wiki/Cable_lacing>.

Nowadays, we mostly use zip ties to bundle cables, but there are disadvantages to using them. For one thing, to apply them properly, you should have a tool that controls how tightly the zip tie holds the wires. This is to prevent crushing the insulation.

Also, I've found that zip ties don't do so well when the cable has only two or three wires. They're just not designed to hold so few wires. I think that cable lacing would do a much better job of keeping a small bundle of wires together, say wires that connect front panel components to a PC board.

Cable lacing certainly looks much cooler than zip ties. This is the perfect technique for those homebrewers that want to make their projects look great as well as work great.

I asked on my blog, "Now, where can I find the 'wax-impregnated cotton or twine?" and my readers came through. Hamilton said, "Apparently you find wax string here: <http://www.kitkraft.biz/product.php?productid=1496>. I remember using it for something as a kid, but I can't place it." Ron McKenz wrote, "I notice that a number of telco vendor sell waxed lacing cord. Here are a few URLs: <http://www.sourcetelsupply.com/catalog/index.php?cPath=27>, <http://www.tessco.com/yts/resourcecenter/pdfs/clablelacing-FAQ.pdf>, and <http://www.oelsales.com/product.cfm/267/>.



- March 26-28 CQ WW WPX Contest, SSB
More contest listings and info at:
<http://www.arrl.org/arrl-dx> ,
<http://www.ncdxc.org/> and
<http://www.hornucopia.com/contestcal/index.html>

- Sat, March 12th and 26th
CAKE Meeting
Coffee Assisted Knowledge Exchange
All welcome at Gigi's Bakery & Cafe.
10am - 12pm
550-A River Street, Santa Cruz, 95060 (Gigi's)
Bring questions, items of interest, your interests.

- March 12, 2011—Cupertino
De Anza Electronic Flea Market
<http://www.electronicfleamarket.com/>

- April 14-17, 2011—Santa Cruz Co.
Sea Otter Classic
XBE&XMY ARES/ACS
Contact: Tim Takeuchi W6TST
<http://www.seaotterclassic.com/>

- April 15-17, 2011—Visalia
The 62nd Annual International DX Convention sponsored by the Nor Cal DX Club will be held at The Holiday Inn Hotel & Conference Center in Visalia, California
More information at:
<http://www.dxconvention.org/>

Ned, WB4KBO, said, "I would suggest a large roll of dental tape and a large-diameter curves sewing needle for fabricating harnesses. I was told that this was the material of choice for lacing harnesses when I worked at Heath Company many years ago. Makes sense to me. Buy it at Meijer for an occasional harness, or a dental wholesale supply house if you are going into production. Also great stuff for kite rigging, vine lacing and many other things."

Mike, WA6ARA wrote, "What you want is Mil-T-43435. It is better than a cord, it is a flat weave tape, nylon, and waxed. It is made for cable lacing but is use now in the

FCC Fine

After a Merced, California man refused to let FCC investigators inspect his Citizens Band (CB) radio station, the FCC issued a Notice of Apparent Liability for Forfeiture (NAL) for \$7000. The Commission found that Ira Jones "apparently willfully and repeatedly" violated Section 303(n) of the Communications Act of 1934, as amended, and Section 95.426(a) of the Commission's rules by failing to permit the inspection.

On March 26, 2010 and August 27, 2010, agents from the FCC's San Francisco Office responded to a complaint regarding radio frequency interference within the radio communication system equipment of the Merced County Fire Department. On each of these dates -- in an effort to determine the cause of the reported interference created within the Merced County Fire Department radio communication equipment and to resolve it -- the agents requested an inspection of Jones' CB radio station. Jones denied both requests, despite the fact that at both inspections, the agents explained the violations to Jones, and provided him with repeated verbal and written on-scene warnings of the consequences of refusing to allow an inspection of a radio station.

Jones must pay the \$7000 forfeiture by April 9, 2011 or file a written statement by that date, seeking a reduction or cancellation of the proposed forfeiture.

—Amateur Radio Newsline

parachute industry as "super tack". Item T1050 at <http://www.paragear.com>"

So, there you have it. Links to show you how to do it, and a couple more links for where to find the lacing material. I now expect all of our homebrew to look a lot neater.

When not worrying about how to lace cable instead of using zip ties, Dan, KB6NU, blogs about ham radio at www.kb6nu.com, teaches ham radio classes, and operates CW on the HF bands. Look for him around 7.030 MHz or e-mail him pictures of your beautifully-laced cables at cwgeek@kb6nu.com.



By Art Lee WF6P

CHATTER

Well, it finally happened, I'm a professional male model! As Santa Cruz Sentinel subscribers saw, I was featured in a full-page ad for Doc Auto on February 23rd. When I consented to the photo op, I thought it was for a simple presentation within the business, perhaps a photo for posting on their reception room wall --- sort of a satisfied customer testimony. Oh well, I guess one can't get too much publicity!

Piracy on the high seas resulted in the death of four American citizens aboard the yacht Quest. (Thanks Peter, AB6WM, for info via the K6BJ reflector.) Two of those killed were ham radio operators; Scott Adams, K9ESO, and his XYL, Jean, KF6RVB. I had not followed the website of Quest, although I knew about it over the MM Nets. <http://svquest.co>. As of this writing, I don't know if the website has been discontinued.

As a sailor, I have been watching the alarming news of worldwide pirate attacks for many years. The question about carrying weapons aboard a private sailing vessel for protection has long been debated. According to the *Navy Times*, a policy of catch-and-release has been going on for a while off the coast of Somalia. The problem seems to be the disposal of captured pirates on the open seas. Where do we put them? My brother, a bos'n aboard MSTs tankers, received special small arms training with the rest of the crews before proceeding through the Straits of Malacca and other pirate infested waters.

My friend Perry Olson is sailing in Mexican waters and to Hawaii aboard his 50 foot Hunter sailboat *Bobby McGee*. He's a ham but not using his Tech license yet. Would be helpful if he buddy boats or in an emergency

and within range of repeaters. He also uses Sailmail, but it has limited use. He has SSB and all manner of electronics aboard, but I favor HF communications. Guess I'm just old-fashioned. CW seemed to always get through when nothing else would.

On March 1st, my piano teacher, Velzoe Brown, celebrated her 101st birthday. Velzoe was brought in her wheel chair to the Kuumbwa Jazz Center by her caregiver, Natalie Adams. With about 50 guests in attendance, we were treated to great band music performed by Velzoe's many musician friends. One surprise for us was the drummer, "Red" Malone, who brought his favorite singer, our very own Club Treasurer Kathleen, KI6AIE. (A few years ago at one of our SCCARC Christmas parties, Red entertained us with his magic show.) Kathleen did a bang up job singing "One Meatball!" in her rather sultry nightclub voice. Few of the younger celebrants remember that highly popular WWII song. She received a fine round of applause for her performance. Donna, AB6XJ, and I had to leave for another event so don't know if Kathleen finished out the set. If so, we missed out. Here's the good part: when I tried to photograph scenes of the party, my digital camera lost power. As an always-ready ARES member, I had two fresh AA batteries in my camera case. Then, upon opening the battery compartment, was dismayed to see that it required four! Not to worry as Kathleen simply reached into her purse and came up with an emergency pair of AAs for me. It's nice to have a fellow ARES member around who is truly prepared!



Club Treasurer and torch singer, Kathleen McQuilling, KI6AIE, belts out a tune

Notes from other Clubs

•Monterey Bay ARA (N6IJ): Officers for 2010/2011 are: President: Donald Kerns AC6RF; VP: Rocky Braudrick W6DNE; Treasurer: Jeff Ackerman KG6UYZ; Secretary: Richard Hillbun AF6TP; Member At Large: Scott Avery WA6LIE.

•Santa Clara County ARA: On Jan 22 Rob Goodson N2RAG gave a talk on the San Bruno gas pipeline explosion from a Red Cross and ham radio perspective. The slides can be found at http://www.bay-net.org/docs/arc_first_40.pdf.

APRS Balloon Launch

February 12, 2011 at 11:34 pm

The fill and launch of K6RPT-15 went well today. The flight was doing well until it reached an altitude of 54,475 feet. Then we stopped receiving APRS packets at 60 second intervals.

We only received two more packets after that, 75,465 and 110,889. The Stratofox tracking & recovery teams were in the Central Valley for the recovery, one team in a plane and teams on the ground. They reported being able to see the balloon burst at 10:12 a.m. That is 17 minutes after the last packet we received at 110,889 feet. The average ascent rate between 75,465 and 110,889 was 1265 fpm.

If the flight continued at that rate for 17 more minutes, we should have reached an altitude of 132,394 feet, but since we just can't seem to catch a break lately, we'll never know. The tracker that we used has worked perfectly on two other flights, so we have no idea what happened on this one. The tracker has not been recovered.

-Ron K6RPT"

Treasurer's Report

The 1/31/11 Treasurer's Report presented to the Board of Directors showed that the SCCARC treasury had \$3,609.44 in cash and bank accounts (total less encumbrances: \$2,696.35). At that time all financial obligations for which invoices had been received had been met. The full Report, incorporating the current working budget as well as actual and projected income and expenditure figures for the full calendar year, will be available for review at the March 18 Club meeting.

SCCARC Board - 2011

President	Bruce Hawkins	AC6DN	689-9923
Vice President	Brandon Bealer	KJ6DKK	
Secretary	David Copp	WS2I	708-2206
Treasurer	Kathleen McQuilling	KI6AIE	476-6303
Board	Christopher Angelos	KG6DOZ	688-3562
	Mike Doern	KM6IKE	477-1161
	Rich Olsen	W1WUH	464-7474
	Cap Pennell	KE6AFE	429-1290
	Doug Burklo	KI6ZIB	
K6BJ Trustee	Allen Fugelseth	WB6RWU	475-8846

MONTEREY BAY REPEATER ACTIVITY

Santa Cruz County	K6BJ 146.790- PL 94.8 Santa Cruz (linked to KI6EH) KI6EH 147.945- PL 94.8 Watsonville (linked to K6BJ) K6BJ 440.925+ PL 123.0 Santa Cruz (not linked) • SCCARC Net Monday 7:30 PM 146.79- /147.945- /147.180+ linked • SCCARC 10 Meter Net Monday 7:00 PM 28.308 MHz USB
ARES Net	SC County Wide ARES Tuesday 7:30 PM on 147.180+ PL 94.8 and 443.600+ PL 110.9 linked
San Lorenzo Valley	WR6AOK 147.120+ PL 94.8 Ben Lomond • SLV Net Thursday 7:30 PM
Loma Prieta	AB6VS 440.550+ / AE6KE 146.835- PL 94.8 (linked for net) • LP ARES / LPARC Net Tuesday 7:15 PM
Monterey	K6LY 146.97- PL 94.8 / 444.700+ PL123 (linked for net) Monterey • Monterey Co. ARES Net Wednesday 7:30 PM K6LY 146.970- (PL 94.8) • NPSARC Net Wednesday at 8 PM on K6LY/R
LPRC	WR6ABD 146.640- PL 162.2 / 442.900+ PL 162.2 (winsystem.org) • LPRC Net Tuesday 8:00 PM 146.640-(PL 162.2) • Amateur Radio Newslines broadcast Tuesday

• Santa Clara Valley Section Traffic NET Tuesday 9:00PM 146.640- (PL 162.2)

FOR MORE INFO SEE: <http://www.k6bj.org/freq.html>

SCCARC Calendar of Events

ARES Meeting (prior to club meeting)	Friday	Mar 18
SCCARC Meeting	Friday	Mar 18
Cake Meetings	Sat	Mar 12, 26
Board Meeting	Thursday	Mar 24
Short Skip articles due	Mon	Apr 4
SCCARC Meeting	Friday	Apr 15

MONTHLY MEETINGS.

The SCCARC Meets at 7:30 PM, on the **THIRD FRIDAY** of the each month (except December). Meetings are at Dominican Hospital, Education Center, 1555 Soquel Drive, Santa Cruz.

NET CONTROL SCHEDULE

(Subject to Change)

3/14	Tom K6TG
3/21	Byron N6NUL
3/28	Phil KE6UWH
4/4	Tom K6TG
4/11	Chris KG6DOZ

Short Skip is published 12 times per year. Free to members.

Santa Cruz County Amateur Radio Club, Inc.

Post Office Box 238, Santa Cruz, CA 95061

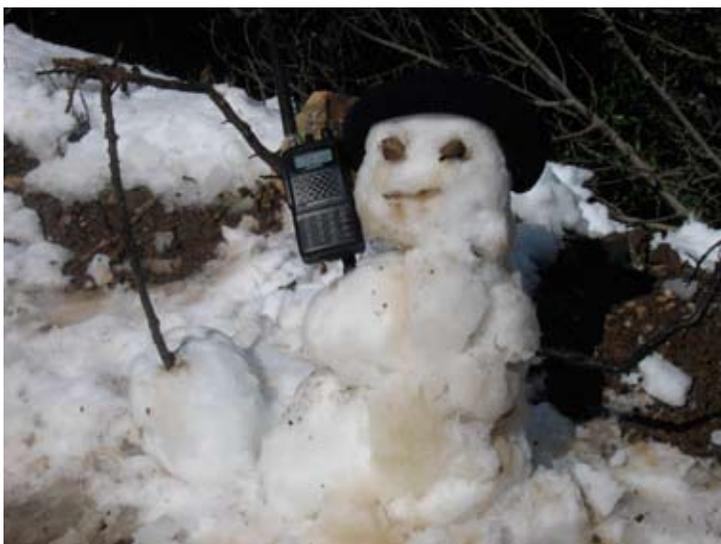
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These are photos from up at Loma Prieta. WB6DWP Dave, KI6TKB Becky, KI6TKA Stuart and Bria (no call) all went up one Saturday to play in the snow. We got cool reception for K6BJ.

Dave - WB6DWP