

FEBRUARY 2002

THE MONTHLY NEWSLETTER of the SANTA CRUZ COUNTY AMATEUR RADIO CLUB

SHORT SKIP



Coordinator Needed for SCCARC/SLVARC Field Day 2002

Our clubs are seeking an individual to act as a coordinator for our premier outdoor operating event, Field Day 2002. Ideally, this position requires an individual with good organizational skills, who is not afraid to delegate the various duties involved. It does not require a lot of time, but does require good arm-twisting skills, the ability to send out lots of email reminders, and the ability to beg, borrow, or steal the various pieces of gear needed. The reward is the satisfaction of putting together the most fun radio event of the year for our clubs!

If you are interested in being Field Day Coordinator, or want to help out with Field Day in any organizational capacity, please talk to one of the club officers or board members. If you want to find out more of the specifics of what is involved, contact Tom Ginsburg, K6TG.

February Meeting CAP on APRS

APRS was developed by Bob Bruninga WB4APR for tracking and digital communications with mobile GPS equipped stations with two-way radio. In the 9 years since its introduction, APRS has grown to encompass just about every aspect of amateur radio. Cap KE6AFE has been playing with APRS for most of those 9 years. Cap will give us an introduction to APRS at our meeting on Friday night.

Solar Cycle 23 Update

It now clearly appears that this solar cycle (#23 for those counting!) is a "double peaked" cycle. The official peak of this solar cycle occurred in May-June 2000 as the sunspot count and solar flux peaked, then began to decline. This coincided with a reversal of the magnetic polarity of the sunspots on the sun, the "legal" definition of when a solar cycle begins, ends, and peaks. Since last summer, the sunspot numbers and solar flux went on a decline for a few months, then mysteriously began to rise again in mid-late 2001, and it's still on the increase. Of course calling this "mysterious" is a mis-nomer, as the last 2 solar cycles also had double peaks, but this one could be more marked. The only thing mysterious about it is why some solar cycles are single peaked events, and others have two.

Solar flux peaked in the summer of 2000 with smoothed, monthly averaged flux in the 215 range (with a few occasional peaks around 240), then declined to 190, 180, etc. For the past several months, we are seeing solar fluxes in the 200-230 range again. Today (Jan. 22) it is 223. Of course the actual solar flux fluctuates over the 28-day rotation of the sun, going from a minimum (right now around 170) to maximum (220 or more), for a smoothed monthly average of about 195. But right now, the average is over 200, and about what the summer 2000 peak was. Will it peak out soon, or go even higher over the next few months? Nobody knows yet.

But it does mean this solar cycle is not yet over, and the "Twin Peaks" will sustain the higher bands, like 15 and 10M, by another 18 months or so over

what was originally predicted. By the original cycle 23 models, 10M would be virtually useless by summer of 2002. Instead, we'll probably get another year of 10M propagation out of this solar cycle.

As a general rule-of-thumb, 10M is open with solar flux above about 150, and certainly open for good skip propagation and low path losses with fluxes around 200 or higher ... like where we're at again right now. So don't give up on 10M and 15M yet!

Historically, some of the most dramatic solar activity occurs AFTER the peak, on the down-hill side. Like even this solar cycle ... declared on numerous internet sites to have peaked out in May-June 2000, which was followed by the largest flare ever recorded (X.21) a few months later, and another flare that produced glorious aurora in June 2001 throughout the southwest, AZ, NM and TX. Then it got boring as the 2nd peak began. So my quasi-scientific prediction is this 2nd peak will continue for another 2-3 months before it begins to decline again, which will be followed (on the down-side) by another period of some dramatic, major flare activity.

But the real point is: this will extend this solar cycle in terms of keeping the higher HF bands "open" for a year or so longer than originally believed -- certainly throughout 2002 and into 2003. So for the upcoming FYBO and CQC Winter QSO Party, don't neglect trying 10M during daylight hours.

What goes on inside the sun to produce this approximate 11-year solar cycle is being understood better as new instrumentation becomes available, but still largely

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CLUB MEETING FRIDAY FEBRUARY 15, 7:30P.M.



Published 12 times per year.
Free to members.

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CHECK YOUR MAILING LABEL

There should be a date of 12/31/02 on your Shortskip mailing label if your membership is up to date for 2002. If the date on your mailing label says 12/31/01 then we don't have any record of your renewal yet. Please renew!

Dues for the 2002 calendar year are still \$25 for a regular membership, \$6 for each additional family member at the same address. You can renew with cash or check at our February 15 club meeting. Or make out a check to SCCARC and send it to

SCCARC

PO BOX 238

SANTA CRUZ CA 95061-0238

Treasurer's Report

Balances on hand as of February 6, 2002:

Money Market \$2975.05

Checking \$1414.71

Petty Cash \$ 31.23

2001 Members: 145

2002 Members: 85 (so far)



Pres. Sez.

imagine a world without women. That would be a nightmare wouldn't it? Here I am on a planet and there are no women. I'm walking around and all I see is men.

The men are all walking around talking on radios. (Kind of reminds me of amateur radio right here on Earth). I'm going to talk to my analyst about this one.

I'll let you know what she says!

—73 Richard KG6AXD

Board Minutes

MINUTES of the BOARD from the SANTA CRUZ COUNTY AMATEUR RADIO CLUB

A regular meeting of the board was called to order at 1840 hours on Friday, January 18, 2002 at Dominican Hospital in Santa Cruz.

The president, Richard KG6AXD, was in the chair. Also present were the vice president, James KF6YRD; the treasurer, Cap KE6AFE; the members of the board Tom KQ6DV, Allen WB6RWU, Ron W6WO, Mike KF6UXB and two guests, Sue Ann KG6BXD and Claudia Fugelseth.

There were no minutes from the previous meeting.

The treasurer's report was a financial statement that showed financial activity for the period from December 1 to December 31, 2001. The report, showing a balance on hand as of December 31 of \$3031.42, was accepted unanimously upon motion by Ron. The desire to have the financial records of 2001 audited was agreed to. James volunteered to audit the 2001 financial records for the club.

During committee reports, Tom gave a report on the club-station committee. The committee has yet to hold their first meeting but the station is usable. Tom presented a thank-you letter he had written on behalf of the club and would send to Mary Duffield WA6KFA for her generous donation of an Icom IC-720 HF radio for the club station. Richard nomi-

Well that amplifier did work after all. I had a blown fuse in my amp meter and so it looked like an open circuit (gasp). I'll bring it in to the next meeting so you can see and tell me what you think.

It's that time of year again, with Valentine's Day around the corner and all. Reminds me of a dream/nightmare I had the other night. Just

nated Tom to chair the club station committee. Cap reported for the newsletter committee that Dave W6TUW would be presented with a certificate of appreciation made by Shortskip editor Ron K6EXT for Dave's many years of service in preparing and mailing Shortskip. Sue Ann announced for the refreshments committee that she would be trying to find a replacement person to provide club-meeting refreshments this year. Richard said we would discuss 2002 committees in more detail at our February meeting. During new business, Richard led a discussion of fund-raising ideas. There was general agreement that the club needs additional funds. No specific action was taken. The meeting was adjourned at 1930 hours.

LICENSE TESTING

16-Feb-2002

02-Mar-2002

16-Mar-2002

Sponsor: SILICON VALLEY VE GROUP

Time: 8:00 AM (Walk-ins allowed)

Contact: EMMETT F FREITAS

(408)243-8349

VEC: ARRL/VEC

Location: TANDEM COMPUTER CO

19333 VALLCO PKWY BLDG #2

AE6Z@ARRL.NET

START TEST ANYTIME BETWEEN 8&11

CUPERTINO, CA 95014



By Art Lee WF6P

CHATTER

I felt pretty good when I received an e-mail from an east coast ham saying he had enjoyed my article in the "Up Front" section of the February issue of QST. It was a short piece about a little stunt that backfired when our "secret" code (Morse) failed to produce the desired results. Page 20 shows some trivia that hams discover.

Was enjoying my listening to our K6BJ net on January 28th. Bill Lawrence, KB6QAQ, checked in to correct the announcement that he was 92 years old. Bill, bless his heart, is only 91! I think he was only 81 when he completed my ham class at Cabrillo College. Bill passed the Morse code test with flying colors and was, perhaps, the most senior student I ever taught.

Speaking of Cabrillo College. In the late 1980s, Allan Handforth, KC6VJL, helped erect the tower and beam at the Electronics Building. We set up a ham station there and students made many round-the-world CW contacts. I assume that the tower has long since been removed as the building is now the Computer Science Building. In the passing parade of time, the student ham shack, electronics program and instructors are long gone. In about 1962, Eddy Pollock, W6LC, reestablished the Santa Cruz Amateur Radio Club

EVENTS

Livermore Swap Meet - 1st Sunday of each month at Las Positas

College in Livermore, 7:00 AM to noon, all year. Talk in 147.045 from the west, 145.35 from the east. Contact Cliff Kibbe, KF6EII, (209) 835-6715, e-mail: larkswap@usa.com.

and set up a station in a classroom in the Math, Science and Engineering Building. If you peer over the railing outside the classrooms, you will still see the concrete base for the original tower. Doing the math on that, it has been forty years since Eddy set the club back in motion. Allan is now in the process of taking down Leon Fletcher's tower and beam at Leon's QTH in Ben Lomond. Leon, AA6ZG, donated his ham gear to a worthy organization and will not be on HF. You will hear him on the 2 meters, however.

In the last week of January, we experienced our winter "cold snap." Worked a CW station in Canada during that time and mentioned how cold it was here. "We're down to 32 degrees," I told him. This didn't elicit much sympathy. He said they were at -6 deg C. Now, let me see, $F = 9/5C + 32$, works out to be -22 deg F. Brrrrrr My XYL Donna, AB6XJ, is from Minnesota where temps drop as low as -60 deg F. Next time it turns cold I'll work a Honolulu station.

Where are they now? In November I received a nice e-mail from Jeff Kenzli, KA6LAF. Jeff was one of WA6KFA Mary Duffield's students about 10-15 years ago. As a young boy, he was a good and fast CW operator. Here are notes from that e-mail: Jeff is trying to get back into ham radio again and wants his XYL Toni to get her ticket. After high school Jeff attended Cal Poly, obtaining his degree in Physics. Returning to Santa Cruz he worked in a computer company in Sunnyvale, then TGV Software in Santa Cruz. TGV was bought by Cisco where he now works. Jeff is on a worldwide team managing a very large internal website and is quite busy, "I'm a sysadmin, webmaster, coder, etc. I like it a lot but it keeps me quite busy." (I guess so!) Married 5 years ago, he and Teri (she works at Lick Observatory) built a house on the East side of Santa Cruz near Harbor High. "But I'm going to have to do a little working on Toni to get any aluminum up in the air." His trusty Kenwood TS-830S is in the closet awaiting future use. Jeff says he is interested in helping with ARES. Maybe Rich Hanset, KI6EH, will give him a call and sign up a new team member. Jeff can be reached at kinzle@cisco.com.

NEXT MONTH: Art Lee's Tech Tips.

RadioFest 2002

Newsflash! Monterey, CA The Naval Post-graduate School Amateur Radio Club's annual hamfest has had a schedule change. RadioFest 2002 will now be held on the last Saturday in February, the 23rd. It is being held at the same great location, General Stilwell Community Center on the old Ft. Ord (now the campus of CSUMB). This event is attended by a large population of amateur radio operators from throughout California and the West Coast. This year marks the tenth event of this kind, it is getting a reputation as the amateur radio event of the year on the Central Coast. The NPSARC in the past has had entertainment, which is a rarity for an event of this type, and the entertainment has been quite successfully received. There are also a number of speakers lined up, including Mr. Jim Maxwell, ARRL Director for the Pacific Division. Please mark your calendars to attend RadioFest 2002 on February 23rd, the last Saturday in February! Brian Broggie, W6FVI Chairman, RadioFest 2002 subscribe mobile On the second line enter end Send your email, respond to the confirmation notice that you will receive, and you're a member. To unsubscribe, follow the process above, but substitute unsubscribe in place of subscribe. If you need assistance with the listserv you can contact- Ed W6DBL at w6dbl@arrl.net

RF CONTROL OF BIOMOLECULES

Scientists from the Massachusetts Institute of Technology Media Lab report that they can now control biomolecules with radio frequency energy. Bruce Tennant, K6PZW, reports: -- Biomolecules such as proteins and nucleic acids are basic building blocks in nature. They carry out a wide variety of nano-scale functions, many of which have proven useful in drug discovery, drug delivery, biocatalysis, and bio-materials. But to optimally exploit these capabilities, researchers must be able to rapidly control their activity. Now in the paper, titled "Remote Electronic Control of D-N-A Hybridization Through Inductive Coupling to an Attached Metal Nanocrystal Antenna, researchers describe a unique method to do this. One that employs the phenomenon of inductive coupling to metallic nanoparticles by radio frequency energy to specifically and remotely control DNA molecules. And they say, it works.

Amateur Radio Newsline

SOLAR Cont.

misunderstood. It is believed that the intense heat leaving the thermo-nuclear engine at the center of the sun slowly rises to near the sun's surface in the scale of thousands of years. Near the surface, the heat stops rising and forms a convection wall, where the heat is transferred by convection to another layer. Now this layer, called a convection zone, also rises as it heats up, rises, then cools as it nears the sun's surface. Upon cooling, this thick solar plasma then sinks until it nears the convection wall, where it is re-heated and rises. It is believed to take about 11-years for this convection cycle to occur, and while the majority of the gases are rising, and hot, occasional pieces burst through the surface, like rising bubbles in boiling water, to burst just below the surface to trigger a major flare.

Perhaps a better illustration is watching the behavior of a "lava lamp," as this happens in slower motion than boiling water. The hot blob of wax rises, breaks off, and hits the top of the water, where it cools, then slowly sinks to the bottom, where it is heated again. And such with the hot gasses in the convection zone near the sun's surface, taking 8-11 years to make a cycle. Of course why this rising gas produces two peaks in solar activity in some solar cycles is not understood at all.

Perhaps as new instrumentation comes on line, some of these questions will be answered. For example, right now we are re-designing the VLA radio telescopes (the EVLA project) to convert our IF channels from 50MHz to 4 GHz wideband, and other changes, to make the instrument more sensitive, give it a higher dynamic range, and improved polarization stability (between LCP and RCP) ... with one of the goals to vastly improve the VLA for solar observing. We should be able to make very detailed maps of the sun's surface to plot actual currents and magnetic fields to understand these processes better. A very low frequency solar array is also being proposed to map the plasma characteristics of the sun, more evident at VLF frequencies (10's of KHz). Perhaps this will allow better flare and CME predictions some day. Right now, it's still "iffy" at best. Solar cycle 23 is NOT over yet.

—72, Paul NA5N National Radio Astronomy Observatory Socorro, New Mexico

NEW CLUB STATION

Hi Hams:

I am very excited about our Club Station. We now have an ICOM transceiver, donated by Mary Duffield, WA6KFA, which we intend to install in the station as soon as we work out the details of granting access to the station. Richard, KG6AXD, has designated me temporary chairman of the Club Station Committee. I would like to hold an organizational meeting within the next month or so: I'm thinking of meeting at Eric's Deli on Soquel Drive by Dominican Hospital on either a Saturday morning or Sunday Afternoon. If you are interested in joining the Club Station Committee please reply to this email (sender only) or mailto:kq6dv@arrl.net and let me know which of these times would be most convenient for you, or if you have other suggestions for a meeting place and day.

I would also like your input right now on my current thinking on an "access plan" to the Club Station. This plan is the result of my discussion with Jeff, AC6KW, after visiting the shack with him. I'm thinking of replacing the combination lock with a key lock, and then selling keys to authorized members for a nominal fee: \$5 - \$10. The fee would cover the cost of making the key plus contribute a little extra to the club which would be earmarked for maintenance costs for the clubhouse. I haven't decided whether this would be an annual or one time fee. Any member currently paid up in dues would be eligible for access: we would simply issue the key along with a defined set of regulations concerning operating protocol from the shack and entrance / exit / check in protocol, etc. The member would keep one copy for themselves and we would keep a signed copy on file so that

we would have a record of who had keys. It would NOT be a requirement to have paid the "key fee" in order to operate out of the shack or participate in club sanctioned events from the shack. But only those having keys would be allowed access at their discretion. Please reply with your comments concerning this plan. At this point I'm just "thinking on my feet" - if the feedback I get is generally positive and there's not a lot of controversy I just may go ahead and buy a new lock and get started. If there are a lot of different ideas and feelings about this I'll wait until the Club Station Committee convenes to work out the details. On my immediate wish list of equipment needed is a reliable computer capable of running a windows based logging program. Anybody got a machine gathering dust in the closet? Also at this point the station is set up for HF operation, but I would like to see UHF / VHF also. Any donations of working rigs or antennas in those areas? TNC's? Please let me know. My dream for our club station is that it will become a fully operational station in all modes of Amateur Radio which we could use for contesting, demonstrating Amateur Radio, and casual operating by club members. At this point the dream is darn close to reality. Thank you all who have spearheaded this effort to date and helped assemble the station. (I don't even know who you all are!) I believe Richard, KG6AXD, Cap, KE6AFE, Mike, W6YDG, Ben, N6FM, and Fred, KF6N, have been instrumental in cleaning up the shack and stringing antennas. Anyone else who has contributed, or knows of others who have worked on the station, please let me know so I may acknowledge you.

—73, KQ6DV

**TRADE or SELL TABLE
at FEBRUARY MEETING**

Bring your surplus radio gear to sell or trade. The table will be set up before the club meeting. Put a price on your goodie and have fun trading or selling: mics, connectors, handhelds and related equipment, receivers, transmitters, etc. Let's have fun!

—Dan AA6GD

Member Profiles- Beth and Norm, W6RYL and N6DAC

When Beth and Norm Peterson agreed to provide our member profile this month I anticipated that it would be rather special and it did not take long to realize just what a remarkable couple they are.

Norm was first licensed in 1932 and so is celebrating 70 years as a ham this year. On behalf of all club members please accept our most hearty

****CONGRATULATIONS****

We might also have recognized their golden wedding anniversary but that was 2 years ago. Who said that blind dates don't work? Nice going both of you !



Beth received her general license in 1983 and said that she owed a lot to Hank KG6EE for his code practice sessions. Beth is an expert swimmer and world class scuba diver but hasn't tried underwater ham radio yet.

Norm received an EE from UC Berkeley and had a 40-year career with GE. Beth, a native of Texas, received a

degree in economics from SMU. A piano is prominent in their living room so once again we discover two more members with musical talent in the SCCARC.

Norm amused me with a description of his first TX. This used a single type 71 tube as an oscillator with its tank circuit connected directly to an antenna for 80 meters—CW naturally. Later on a second type 250 tube was added as a modulator for AM phone. With

this simple rig VK and ZL QSOs were common.

Their 2-element beam antenna for 10,12,15,18 and 20 is unusual, Norm designed it based on a W8JK driven array, two 40 ft elements spaced 10 ft and the boom does double duty as the phasing line. It is fed with open wire line and tuned by an old Johnson "Matchbox"

Ham radio is a big part of life for Beth and Norm with weekly skeds with family members and old friends that include W6VG who introduced Ham Radio to Norm while still at high school.

It was a real pleasure to learn more about this amazing couple, please join with me in wishing them good health and lots more fun ahead.



Low-Cost Satellite Has High-End Aptitude

Working with a shoestring budget of \$50,000, students at the Naval Academy in Annapolis built the Prototype Communications Satellite (PCsat), which is among our latest Amateur Radio Earth-orbiting satellites. Bob Bruninga, WB4APR (bruninga@usna.edu), the "father of APRS" (Automatic Position Reporting System), supported the project. As a result, PCsat is APRS-oriented and serves as an APRS digipeater, which means it is intended to relay UI (Unconnected Information) packets only. Connections are not permitted. Uplinks are at 1200 and 9600 baud on 145.827 and 435.250 MHz, respectively. All downlinks are at 1200 baud on 145.827 MHz.



Bob Bruninga, WB4APR (center), looks on as ensigns Dan Boutros (left) and Brad Schwenzer (right) describe PCsat's telemetry submodule. The PCsat Web page describes how to send and receive unconnected packets through our newest Amateur Radio satellite. In addition to supporting the project as Satellite Project Engineer, WB4APR built the PCsat Web page, which contains heaps of information regarding PCsat. There, you can find out about PCsat's emergency status and reporting (SAR) capability which permits a ham located anywhere in the world to use an APRS-capable handheld or mobile transceiver to send an emergency message to the satellite. Instead of digipeating the packet immediately, PCsat stores it and retransmits (stores-and-forwards) the packet at regular intervals as it orbits the Earth, in order to alert others of the emergency.

At the PCsat Web site, you can also download Bob's DOS software to monitor PCsat's telemetry in real time and send and receive one-line messages via the satellite. Climb aboard Bob's van and see his mobile satellite command station with its unique beam antenna system built from plumbing fixtures purchased at Home Depot. See who is using PCsat to relay APRS packets by linking over to K4HG's live "Amateur Radio Stations heard via PCsat" Web page or obtain PCsat orbital information at the Heavens Above Web site.

Stan Horzepa, WA1LOU Contributing Editor ARRL

SCCARC Officers - 2002

President	Richard Trebbien	KG6AXD	426-0169
Vice President	Jim Welty	KF6YRD	685-9225
Secretary	Elaine Pennell	KE6FRA	429-1290
Treasurer	Cap Pennell	KE6AFE	429-1290
Board	Bruce Hawkins	AC6DN	
	Tom Johnson	KQ6DV	464-3120
	Allen Fugelseth	WB6RWU	475-8846
	Mike Doern	KF6UXB	477-1161
	Ron Skelton	W6WO	477-1021
K6BJ Trustee	Royce Krilanovich	AC6Z	475-4798

MONTEREY BAY ACTIVITY

SCCARC Repeaters: K6BJ 146.790- PL 94.8 Santa Cruz (linked w/Watsonville full time)
K16EH 147.945- PL 94.8 Watsonville (linked w/Santa Cruz full time)
K6BJ 440.925+ PL 123.0 Santa Cruz
• SCCARC Net Monday 7:30 PM 146.79- /147.945- /440.925+ linked
• SCCARC 10 Meter Net 28.308 MHz USB Monday 7:00 PM
• SC ARES Net Monday 8:30 PM 146.835-(PL 94.8)
• Watsonville ARES Net Thursday 8:30 PM 147.945-
SLVARC Repeater WR6AOK 147.120+ PL 94.8 Ben Lomond
• SLVARC Net Thursday 7:30 PM
SLV ARES N6IYA 146.745- PL 94.8 Felton
• SLVRC Net Thursday 7:30 PM
• ARES Net Monday 7:30 PM
NPSARC K6LY 146.97- PL 94.8 / 444.700+ PL 123 (linked) Monterey
• Monterey ARES Net Wednesday 7:30 PM
• NPSARC Net Wednesday 8:00 PM
• Monterey Bay Traffic Net Nightly 9:00 PM
• Newslite (Ham News) Broadcast Wednesday 8:30 PM
6 Meter Local Net 52.8 MHz (PL-114.8) Sunday 8:00 PM
Mont. Bay Chapter 191 QCWA :Tuesday, 7:30PM,AA6T repeater, 146.700- PL 151.4
FOR MORE INFO SEE: <http://www.k6bj.org/freq.html>

SCCARC Calendar of Events

SC ARES	Tuesday	Feb.12
SCCARC Board Meeting 6:30	Friday	Feb. 15
SCCARC Meeting	Friday	Feb. 15
Short Skip Deadline	Monday	Mar. 4
SC ARES	Tuesday	Mar. 12
SCCARC Meeting	Friday	Mar 15

MONTHLY MEETINGS.

The SCCARC Meets at 7:30 PM, on the THIRD FRIDAY of the each month (except December). Meeting are at Dominican Hospital, 1515 Soquel Drive, Santa Cruz.

Visit the SCCARC Website at -
www.k6bj.org

CLUB E-MAIL: yourcall@k6bj.org

NET CONTROL SCHEDULE (Subject to Change)

2/11	Ron W6WO
2/18	Dave W6TUW
2/25	Tom K6TG
3/4	Jeff KF6BKG
3/11	Allen WB6RWU
3/18	Phil KE6UWH



SANTA CRUZ COUNTY AMATEUR RADIO CLUB
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Meeting: Feb. 15, 7:30PM

First Class