



THE VALLEY HAM NEWS



"The Voice of the Yuba Sutter Amateur Radio Club"

A California Non-Profit Organization

May 2011



Bike Around The Buttes Highlights

Another "Bike Around The Buttes" bicycle ride has come and gone. As always, the YSARC has provided all of the emergency event communications. There were the usual bike break downs requiring tube changes. Some riders were bucked off of their steed. Rest stops needed restocking. There were also items left on the course that were found and returned. Oh, did I mention the lost riders, tired riders, and the really exhausted riders that needed a lift back to headquarters?

The weather was absolutely beautiful which contributed to the 1,348 riders showing up.

Here's a little event history with the BATB and the YSARC.... The first year we participated, helmets weren't required. A lady fell off her bike and suffered major head trauma. A local rancher decided to move his flock of several hundred sheep on Pass Rd the morning of the ride delaying several hundred riders. Paul, N6XVL worked at rest stop #3 which was at Pennington and Township Roads. There was a yard sale at his location, so he adopted the tactical call sign "Yard Sale". The first year, our "net control" was inside the side room of the building. When the live band started playing outside, we had to put on the headphones because we couldn't hear the radios! The 100 mile ride is a fairly new addition. For years, there was only the 17.5 and the 40 mile ride. A chihuahua doggy was found

near rest stop #2. No collar, and covered with ticks. He was adopted by friends of KB6YAF and is doing well to this day. A group of riders were being stung by bees from a hive that was placed on Township Rd. Bob, N6BOB and Russell, KB6YAF have both peddled the 40 mile route more than once! Net Control placed a mag-mount 2m antenna on top of the air conditioning unit of the building. Lastly, during the first few years that YSARC provided the event communications, we worked SIMPLEX !!

The Bike Around The Buttes started out as a fund raiser for the local chapter of the American Diabetes Society. Now, it is the major fund raiser for the Yuba Sutter Children's Type 1 Diabetes Support Group & Resource Center.

I want to say thanks to the 23 ham radio volunteers who volunteered their time and resources for the BATB. Over 1,300 miles were logged along with over 200 hours of service to the community. Well done !!

73, Russell Decker, KB6YAF
Coordinator for the Bike Around the Buttes
Emergency Communications & YSARC.

(check out the BATB photos at the end of the newsletter)

YSARC

PO Box 1169, Yuba City, CA
95992

President

Lonnie Moore, KI6ZYY

Vice President

Alfred Herrmann, KD6NSQ

Secretary

Meg Burgin, KI6TLS

Treasurer

Clara Ansley, N6VRH

Board Members

Herb Puckett, W6HBU

Andy Boone, KJ6IYM

Barry Barnes, KE6LW

Lee Sheffield, KC6MCI

Russell Decker, KB6YAF

VHN Editor and

Webmaster

Russell Decker, KB6YAF

Repeater Trustee

Dave Gartner, WD6AXM

MONTHLY ACTIVITIES

1st Wednesday: Club Meeting

3rd Wednesday: Board Meeting

**(Check the minutes for details
on the Club and Board Meetings)**

*All newsletter submissions are due
on or before the 4th Wednesday of
the month*

UPCOMING EVENTS

May 4th - Wed. @6pm - **YSARC Dinner Meeting** at 2 Bits Cafe
in Yuba City, CA

May 18th - Wed. 7:00pm - **YSARC Board Meeting** - Place TBA

CLUB ACTIVITIES

Monday Night Net - (7 PM) - Weekly net w/swap shop
(146.085 + PL 127.3)

Monday Night Net - (8 PM) - Butte Co. ARES Net
(146.850 - PL 110.0)

Tuesday Night Net - (7 PM) - YSARC ARES Net
(146.085 + PL 127.3)

2nd Wednesday - (7 PM) - ARRL Sac Valley Net

PRESIDENT'S CORNER.....

Hello from the shack of KI6ZYY. We have just about finished up the month of April, and it was a busy one. Our Potluck at Meg's QTH was a success, and we had a good time. There were lots of good food as well. We had several tables loaded with mostly second hand gear and a few new things. We offer a big vote of thanks to Meg, KI6TLS.

Another big vote of thanks to all those who helped out with Bike Around The Buttes. This is one of our big events for the year. We have been helping with this event for more than 20 years. Russ Decker, KB6YAF, did a great job of making it happen this year and I hope he will speak a bit about how well it went. I will say that after a very long day, Russ and Debbie had put all their gear away and were getting ready to take the "Silver Twinkie" back home when he discovered a flat tire on the aft port side of the "Silver Twinkie". After calling for help, Eleanor, KI6CSO, responded and dug out her manual air pumps and headed toward Sutter. Mike, KM6EBY, who lives in Sutter offered his air compressor. Lee, KC6MCI, picked it up and brought it to BATB headquarters where we got that darn tire aired up long enough for Russ to make it home. Whew, what a day and thanks to KI6CSO, KM6EBY, and KC6MCI. Ok, I helped a bit too.

The MS Walk is another event we take care of, but this year it happened on the same day. This date had been forced on them by the powers that be, and they had no choice. Since Russ had done such a great job of recruiting for BATB, not many were left to help out with MS. Of course, this is typically what happens in an emergency. Most of our hams will be busy getting their families to safety or trying to find out where they are after a levee breaches and floods the valley. A few stepped up to the plate. Russ sent a few of his extra help, and we got it done. Special thanks to Sean, K6SCM, for his willingness to act as Net Control and all the neat things he did as NCS. It was good to have him back in harness.

May will be a busy month for us. Our club meeting will be at the 2 Bits Café at 6pm with the program by Bob, N6BOB. He's put a nice program together on his family's trip to Central America. It's not a full blown radio presentation, but I am looking forward to it.

Preparation for Field Day will be under way. Your President has been working on getting the club tower/trailer/yagi ready. I built outriggers for it last year and it made a big difference for Field Day 2010. This year, I built homemade fenders for it and have work to do on the tower. This year, I don't want to scramble to find a mast like I did the last two years. I'm working on bushings and a heavy duty mast that will stay with the tower. I'd like to put a rotor on too, but that remains to be seen. I'd just like it to be easier to use. I'm toying with the idea of mounting an operation table along each side and using several Bimini hoops to hold a Bimini top in place for a little shade. Not sure I'll use the dark blue top that came off a house boat. Too hot. I'm thinking white.

Bob, W6BO, has offered to set up a VHF station, and I've offered my 35' military mast and an 8 element two meter yagi. Sean, K6SCM has offered to set up the GOTA station. Lee, KC6MCI, will set up his digital station again this year on 20 meters. Russ, KB6YAF, will set up his 40 meter SSB station. Your President, Lonnie, KI6ZYY, can set up a 10/15 meter SSB station using the club tower/trailer/yagi. Meg, KI6TLS, and Ramona, will be fixing breakfast Saturday & Sunday. Russ is planning on cooking something on the BBQ for Saturday evening, and we hope you will bring a dish of something and join us. I'll act as safety officer unless someone else is willing to step up to that plate. What would you like to do? What would you like to bring?

We are planning to run 3A. That means three stations running on battery/solar power. It looks like we'll have around 5 hams bringing solar arrays and as many batteries as we can muster. More is better, and if you can bring yours, let me know. If you have any questions about Field Day or how you can get involved, please call me on the repeater or via the phone (530-473-3228). If you'd like to make it 4A, give me a call. We can talk.

Lee, KC6MCI, helped get a question answered concerning charging batteries with a generator. We can run 3A and we can charge batteries with a generator as long as they are not hooked up to any piece of radio equipment. The penalty is you are reduced to 2 multipliers for your operation. A total of 5 multipliers is available, but we are already down to 2 multipliers by using more than 5 watts. Good call on that one Lee, thanks!

"Honing" our heritage with CW continues on 146.460 FM simplex at 7:30 pm Sundays & Tuesdays. Lee, KC6MCI, is our Elmer and does a great job. We had 6 hams on frequency last Sunday and find the word is getting out.

Join us.... if you dare!

Thank you & 73,

Lonnie Moore, KI6ZYY
"CU on the air"



MEG'S MEETING MINUTES

YUBA SUTTER AMATEUR RADIO CLUB - Board of Directors Meeting - April 20th, 2011

A regular Board of Directors meeting was held at the QTH of Herb Puckett, W6HBU on Wednesday, April 20th, 2011. The meeting was called to order by President Lonnie Moore, KI6ZYY, at 1905 hours. All present stood for the Pledge of Allegiance.

Club officers present were: President Lonnie Moore, KI6ZYY; Secretary, Meg Burgin, KI6TLS, Treasurer; and Clara Ainsley, N6VRH. Vice President, Alfred Herrman was absent.

Board of Directors present were: Barry Barnes, KE6LW; Andy Boone, KJ6IYM; Russell Decker, KB6YAF; Herb Puckett, W6HBU; and Lee Sheffield, KC6MCI.

Guests introduced were: Wade LaRue, KN6WX, and Ramona Traub.

Officers Reports:

Minutes of March 16th meeting were approved as corrected.

The Treasurers report was approved as read by Treasurer Clara Ainsley, N6VRH. Clara also passed out current membership cards to those who were present. No new bill were presented.

Under Old Business, President Lonnie Moore, KI6ZYY, reviewed the happenings of the April Pot Luck and Swap meet that was held to raise \$? funds for the club.

Meg Burgin reported that invitations to Field Day for public officials had been mailed out the previous week.

Russell Decker, KB6YAF, reported the Bike Around the Buttes was a success, although it was a smaller event than usual. He thanked the 23 members who turned out to monitor the events safety and progress. 1,300 miles were logged in during the day. Members who would like to be reimbursed for fuel should turn in their mileage to Russ.

Lonnie Moore, KI6ZYY, reported that the MS Walk from Sam Brannon Park was also a smaller event than usual. He expressed thanks to those who were able to step up to the plate at the last minute to lend a ham. He also reported that CW on FM is growing in popularity on Sunday and Tuesday evenings.

Russell Decker, KB6YAF, mentioned presenting a CW Certificate for students once a given level of proficiency was achieved.

Under New business, The May 4th Membership Meeting will be held at 2-Bits Cafe at 1800-hours. Dinners may be selected from the regular menu. The program will be provided by Bob McClard, N6BOB, on his families trip through Central America and the Panama Canal.

Under Unfinished Business, future Club Activities were discussed.

Lee Sheffield, KC6MCI, suggested a special event station marking Memorial Day, July 4th and Field Day; then something about going nuts in October? QSO Certificates and QSL Cards may be presented to those who participate.

PIO Officer, Clara Ainsley, N6VRH, will be writing up an article about “This Day in History”.

Wade LaRue, KN6WX, mentioned a “Mystery Activity” and will work up something for that.

Herb Puckett, W6HBU, recalled the fun he had as a member in the “Rag Chewers Club”.

The Lincoln Ham Fest to be held on Saturday, September 10, will include VE testing. Lee Sheffield, KC6MCI, will need help with the testing and a new trainee for next year. 4-5 clubs will participate in an “Antenna Activity” the same day. 3 to 5 YSARC members are asked to volunteer to help with traffic control and space/sales.

Finally, under New Business, The June 1st Membership Meeting will again be a Pot Luck and Burgin’s QTH to finalize layout plans for Field Day, June 25-26. Setting up stations will be:

Lee, KC6MCI - 20 meter PSK 31	Dipole/Colinear
Russ, KB6YAF - 40 meter SSB	Dipole / Chef
Lonnie, KI6ZYY - 10 / 15 meters SSB	Club Tower / Yagi
Bob, W6BO - VHF SSB	8 Element Yagi/35’ mast
Sean, K6SCM - GOTA Station	R7000 / 30’ Mast
Andy, KJ6IYM - TBA	

The meeting was adjourned at 2030-hours.

Respectfully submitted, Meg Burgin, KI6TLS, YSARC Secretary

WELCOME NEW YSARC MEMBERS

The Yuba Sutter Amateur radio club welcomes our newest members!

Wade LaRue, KN6WX - Yuba City, CA
Keith Edwards, WB6GCL - Sutter, CA

CLARA'S CALCULATIONS

YUBA SUTTER AMATEUR RADIO CLUB TREASURER'S REPORT APRIL 20, 2011

CHUCKING BALANCE: APRIL 20, 2011: \$3,112.23

RECEIPTS DEPOSITED:

4/20 SALE: TEN TEC RADIO: 75.00

MONTH'S RECEIPTS: \$ 75.00

TOTAL RECEIPTS: \$3,187.23

BILLS:

NONE

CHECKING BALANCE THIS DATE: \$3,187.23

LESS SPECIAL ACCOUNTS:

REPEATER: \$620.30

VE 86.43

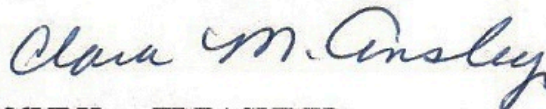
CHRISTMAS DRAWING: 176.44

MEMORIAL: 65.10

BALANCE: \$943.27 LESS: \$ 943.27

CLUB BALANCE: \$2,243.96

SUBMITTED BY:



CLARA M. ANSLEY N6VRH TREASURER

YOUR CW'S WORTH (AN SOS STORY)

BY WADE LARUE, KN6WX

I must admit, I've been off the air for quite some time now. Some may even think I've become a silent key, but I'm still alive and I have a story to share... A true story...

Before I get started, and before I get into trouble, I need for you to see how I view Ham Licenses. Actually, I view them much like a Driver's License. Everyone who has one, seems to have a preference. Some like pickups, others cars and still others motorcycles or some other type of transportation. Some like a manual transmission, others only an automatic, still others only care about the color. None the less, it's your license and as long as you stay within the boundaries set forth by our great State of California, you're free to drive whatever you like or whatever you can afford. So, be my guest....

Ham Operators are no different. Some prefer to only work certain bands, others only like certain modes, still others only like one brand name of radios. I met a No Code Technician in Grass Valley, California once and the only aspect of Ham Radio he cared to operate on was SSTV and WHAT A STATION! The only time he used phone communications, was when he was coordinating with another Ham either sending or receiving the pictures he transmitted or received. Like I said, it's your license, you earned it and as long as the FCC don't mind, be my guest...

Just a little background, so you know where I'm coming from. I became a Novice Class Operator in 1991. My friend and Elmer, Jim Wyland (KC6PLY/ SK), called me on the phone and said, "Wade, I'm hearing a lot of brand new call signs on 2 meters today. Have you checked your mailbox lately?"

"No", I said, "I haven't been to town (7 miles away), but I'm going now!"

As I checked the mailbox that afternoon, I was very happy to see the FCC was on the job and their letter came in the mail. I quickly opened it, setting all the other mail aside. Sure enough, it was my license and I couldn't wait to tell Jim.

I used to love to watch Jim work CW on his radio, but this night would be special and Jim would make sure it was memorable. "Let me see your license", he said, "KD6DFZ, here's a pen, make sure you sign both licenses and put one in your wallet."

After a moment of chit chat, Jim said he was just getting ready to play on the radio, so I stayed to watch. He began by looking for someone with a solid signal and he had a computer attached to his rig, which helped copy CW when the pros got a bit too fast for us Novices. We finally found one and his speed was just about right too....

Jim sent him a greeting by responding to his call. I was able to copy along, and then he did it. It was my call sign he was responding with, not his. "Jim! What are you doing to me!?" He just giggled and kept sending the rest of my call sign. As soon as he sent the K, he jumped up and left me to do my best on my first CW QSO. Yes, I was sweating under the pressure, but it was a night I will never forget...

Yes, those were fun times, but I wouldn't keep my Novice Class ticket for long. I wanted the big boy! The ticket that offered everything Ham Radio could give me in modes and bandwidth. I wanted...the Extra Class, but to get it, I was going to have to do a lot of practice. After all, I was going to have to pass a 20 WPM CW exam and it would take me the better part of three years to do it.

During those three years (what I call my training years), I spent most of my radio time in the CW mode. At least once every day, I would scan the frequencies in search of at least one operator to share my day with. I also would do at least one practice session with my computer's CW practice program. Never once did I hook up my computer to my radio to help me copy CW. I wanted to train my brain and that would require all the exercise I could give it. It was all in fun, but there was one night, things got a bit more serious.

It was late at night. Typically, I was just getting off work at 11:00 PM and I would get home at a good time to play on the 80 Meter band. At that time, my Ten Tec Argo QRP rig and a Skelton Cone Antenna made operating all the more fun and I was able to work many places in the world with this set up. This night, however, seemed a bit slow. I had made about three contacts or so, but there didn't seem to be a lot of activity. So, I decided to move into the phone section of 80 Meters.

AHA! There was a group of "7" calls chatting with each other in the General Class SSB section of the band, maybe I'll spend a little time with them and give my Vibroplex a break. "KN6WX QRP" I sent on the quiet moment.

"Hey, we have a QRP rig out there, go ahead KN6WX..."

We spent most of the next hour talking about the usual things that "7" calls like to talk about. If it's not about Ham Radios and Antennas, then it's about Californians and how they want to cement everything and destroy the natural beauty of their beloved State. You just got to love them, but then it happened.....

Some noisy CW operator busted right into our SSB party without warning. "Hey", one of other stations said, "There's an SOS out there. I think this guy is in trouble."

... --- ... --- ... --- ...

"We can hear you buddy, what's going on?" piped one of the other stations.

"Wrecked my car, need help." He keyed.

Now it was time for vital information. "Are you OK?" asked the other station.

The letter Y was sent, which we took as a yes.

"Where exactly are you?" we asked. A list of dits and dahs ensued. Nevada State, eastbound I-80, was the reply.

I piped in, "Does he know what mile marker he last saw?" He must have heard me, because he sent three numbers after that and I well knew the area he was in. It's not a good place in the desert. There's very little water and you must know where it is to get it. The only food out there is fast food and it all "runs" faster than you. It's enough to test the survival knowledge of a professional, let alone a regular layman.

One of the Nevada stations said they were calling the Nevada Highway Patrol (NHP) and would relay this information to them. In the meantime, still not sure of his situation, the rest of us kept him busy sending to us. He told us that he fell asleep at the wheel (easy to do on a Nevada Interstate) and was (I imagine rudely) awakened as his vehicle was rolled several times. The microphone to his mobile rig was broken, as was his antenna. He was using a "bug" he had in the car as his key. Having no trees out there, he rigged a wire dipole and laid it out on the ground. He was running maximum power and wasn't sure how long his battery was going

to last, nor how damaged it was. We all felt time was crucial for this guy.

A few minutes later, the Nevada Ham said he got the message to the NHP and they were on their way, which we had to relay back to the driver (they couldn't hear each other). We all stayed there, waiting for something to happen and listening to this CW only operator tell his tale, then about half an hour later, he fell silent for a moment. At first, we all thought his battery had died, but then he returned and told us the NHP finally arrived and he was going to be OK. He thanked us for our assistance, and then signed off. We all felt relieved to hear the news...

As I near the end of this story, my mind goes back to last summer, when my twenty year old daughter asked me a rather horrifying question, "Dad, will you teach me how to drive a stick shift? I'm tired of being limited to driving cars that have an automatic transmission..." In the week or so I spent with her, I had gained a few more gray hairs, but she was a quick learner. She soon was proficient in shifting gears, but her take off was a bit jolting. We fixed that too, by terrorizing the little town of Sutter, California and all its beautiful stop signs and light traffic. (Hi Hi)

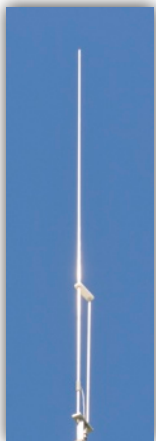
As my story comes to a close, I am reminded of the words of my former Marine Master Sergeant, "A good radio is only half the battle, a good operator is the other half." Your rigs won't do you a bit of good if you can't operate them and even if you decide to operate them in phone only mode, you never know when someone will bust up your QSO and hope you can help them. The Ham in this story was pretty lucky having his "bug" to send CW and a host of operators trained to copy this old mode of communication. Things could have been far worse for him, like tapping two bare wires, a bleeding body, a dying battery and no one who can understand a letter he's sending.

As I share this experience of mine with you, I hope it encourages many of you to see CW as a viable mode of communications and not just some obsolete piece of history from the days of spark gap transmitters and tube sets. Maybe it's a good idea to set that well used microphone aside from time to time and shake the dust off that old key that's often ignored in our modern world.....

Sincerely, Wade LaRue KN6WX

HAM STUFF to BUY, SELL, or TRADE

Here are the rules: Any YSARC member can list a ham-related item(s) to sell, buy, or trade. Give a brief description of the item(s), an asking price, and a way to contact you (email address would be a good way). Please limit the amount of items to (4) per month. The items will be run in the YSARC newsletter. Please submit your listing on or before the 4th Wednesday of the month.



FOR SALE: Aluminum J-Pole Antenna (available for either 144 MHz / 222MHz / 450 MHz

These J Poles are hand made using T6061 aircraft grade aluminum and stainless steel fasteners. These antennas are omni-directional and have around 3dB gain. They can be mounted on any camera tripod as it is drilled and tapped w/ 1/4"x 20 thread.

Cost: \$30 (locally) (or \$35 for the special collapsible model.)

Call Russell at 530-821-5882 or email at kb6yaf@arrl.net



Custom Made 40 foot Poles by Lee, KC6MCI \$85.00

If you are interested in buying a custom made 40' push up poles built in sections complete with guy wire loops, call Lee Sheffield at 530-755-1004 or email him at leesheffield@comcast.net



ScrewDriver HF Antennas Under \$200.00

Lee, KC6MCI manufactures the famous Screwdriver-motor HF Antenna based on the original design of Don, W6AAQ. If you are interested in a great HF antenna that covers 10-80 meters mobile, contact Lee. He can even custom make one in different colors and his "Stars & Bars" Special

OUR MAY YSARC DINNER MEETING

If you have never been to one of our “dinner” meetings, then you are missing out on a fabulous time. Most of our “dinner” meetings are held at 2 Bits Cafe in Yuba City. They open up the restaurant just for the YSARC! Bob, N6BOB, will be sharing a DVD he made of his Panama Canal trip. You don’t want to miss this one.

The dinner meeting is Wednesday, May 4th at 6:00pm at the “2 Bits Cafe” just south of the Yuba City Mall on Rocca Way. As usual, talk-in is on 146.085+ (127.3PL)

HOW TO CONTACT US.....

Valley Ham News Editor & YSARC.ORG Webmaster - Russell Decker, KB6YAF kb6yaf@arrl.net

YSARC President - Lonnie Moore, KI6ZYY ki6zyy@yahoo.com

YSARC Secretary - Meg Burgin, KI6TLS mburgin@syix.com

YSARC Treasurer - Clara Ansely, N6VRH claraansely@openrange.net

YSARC VE Testing Coordinator - Lee Sheffield, KC6MCI leesheffield@comcast.net

WEBSITES...

www.arrl.org - This is the website to the American Radio Relay League

www.ysarc.org - This is the club website. It contains information about the Yuba Sutter Amateur Radio Club

<http://aprs.fi> - This is a ‘Google Maps’ site that contain all of the APRS activity.

www.qrz.com - Look up call signs, take practice ham radio exams, and much more.

<http://rettysnitch.org> - This website explains what those two weird things are on the front page of the VHN

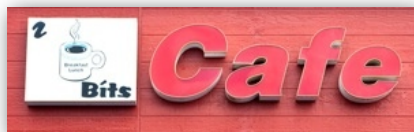
<http://groups.yahoo.com/group/YSARC/> - This is the URL to the YSARC Yahoo Group Site. Sign- Up !!!!

<http://hamslife.com/> - This is the ham radio blog of Bill, WA6OHP

www.quartzfest.org - The official website of the “Quartzfest” held on the last week of January

<http://www.wunderground.com/> - A very cool weather website

The members of the Yuba Sutter Amateur Radio Club want to thank the following businesses in Yuba City that have supported the club with their goods and services. We hope you will patronize their businesses.



The “2 Bits” Cafe

1272 Colusa Ave - Yuba City, CA

(530) 755-2012

YSARC Breakfasts
Every Wednesday
@ 8:30am



1199 Butte House Rd Suite D, Yuba City, CA 95991

(530) 671-9905

**A discount is offered to all YSARC Members*

BIKE AROUND THE BUTTES 2011

Photos by Russell, KB6YAF; Sean, K6SCM; and Curtis, KF6VFP



Curtis, KF6VFP heads out as a "SAG"



BATB Net Control - "The Big Silver Ham Shack"



Al, AA7C; Allen, W6WPF; and Andy, KJ6IYM



Bicyclists getting ready for their ride



Tom, KB6WID; Russell, KB6YAF; and Dave, WD6AXM



Lonnie, KI6ZYY and Ramona out on the course



Rest Stop #1 on Pass Rd.



Andy, KJ6IYM; and Sean, K6SCM at Rest Stop #2



The Sutter Buttes - Smallest Mountain Range in the world



Lee, KC6MCI checks out Sean's mobile



Russell, KB6YAF juggles many radios at Net Control!!



Curtis, KF6VFP; Andy, KJ6IYM



Ron, W6KJ

MS WALK 2011

Photos by Sean, K6SCM



Sean, K6SCM's Net Control Station for the MS Walk



Sean's Net Control Signage



More photo's of Sean's MS Walk Net Control Station at Sam Brannon Park - Yuba City, CA



COMING NEXT MONTH.....

WB6GCL'S ANTENNA FARM ARTICLE AND PHOTOS AND OLD WWII MILITARY RADIOS THAT ARE FULLY FUNCTIONAL !!! DON'T MISS IT