

Sierra Signals

Sierra Foothills Amateur Radio Club
Auburn, CA
An ARRL Special Service Club

<http://sf-arc.org>

November 2006

P.O. Box 1005, Newcastle, CA 95658

A Peek into Eagle – AMSAT's Next Satellite

(Reported by Greg, KO6TH)

The weekend of October 7, 2006, was an exciting time for AMSAT. The board of directors had just met and approved the communications package for Eagle, the organization's next satellite. The 2006 AMSAT Symposium was in full swing, and Bob McGwier, N4HY, the head of the design team, was giving the Symposium attendees a summary of their decisions.

AMSAT's last effort in satellite building created the very successful AMSAT Echo, now known by its official designator AMSAT-OSCAR 51 (AO-51). AO-51 is a LEO, a Low Earth Orbit satellite, which orbits some 400 miles above the planet. On board are two primary transponders – an FM Voice mode and a digital packet bulletin board. But the lack of altitude limits the satellite's field of

At the Key of S.F.A.R.C.

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REPORTERS

Satellites: Greg, KO6TH

History: Gary, KQ6RT

Digital/VE: Rob, WW6G

WEBMASTER

Marc North, W6SQL
marc@marcnorth.com

RESOURCES

REPEATERS

145.430 (-0.6 MHz/PL 162.2)
440.575 (+5.0 MHz/PL 94.8)
223.860 (-1.6 MHz/PL 100.0)

CLUB NET

Thursdays, 7:30PM, K6ARR/R
145.430

CLUB MEETINGS

Second Friday of the month,
7:30PM at the Library, 350
Nevada St, Auburn CA

CLUB BREAKFAST

Last Sat of the month at Susie's
Café, Cirby at Riverside, Roseville
– 8:00 AM

NET CONTROL OPS

Dave Jenkins, WB6RBE
Gary Cunningham, KQ6RT
Joe Sylvia, KF6OQY
Casey McPartland, W7IB

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view to a small portion of the planet at any one time, and the two transponders, especially the digital one, are primitive compared to what they could be. So, what to do? The first order is to design a satellite that can be launched into a high orbit, one with a peak altitude tens of thousands of miles up. From up there, Eagle can see half the planet at one time. But that won't answer the primary question – what communications services to put on the bird?

(continued on page 2)

2006 Calendar of Events

(Operating Events in Italics)

[Dates are local unless otherwise indicated]

Nov 10

Regular Meeting-Elections

Nov 25

Club Breakfast

Dec 8

Regular Meeting-Christmas Party

Dec 30

Club Breakfast

We encourage members to receive Sierra Signals via email to save the Club the cost of reproduction and mailing

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Forty Years Ago At The SFARC

(Reported by Gary, KQ6RT)

Forty Years Ago at SFARC

November 16, 1966

Seven members present. Had movie & eyeball QSO.

Dick

Thirty Years Ago at SFARC

November 11, 1976

Held a surprise dinner party in honor of Jim Carman (Trustee) at Pinnacle Peak steak house. Many of the local Hams showed up and many paid their contributions.

73,

Gary, KQ6RT

Eagle

(Continued from front page)

Bob described their plans. Two primary sets of radios; one dedicated to traditional SSB/CW communications, the other supporting an advanced digital communications package. But even the traditional SSB/CW package was to get an update.

SSB and CW are a very efficient means to communicate, both in terms of their bandwidth and power required. But because the transponder power is shared among the users, either mode can be very hard on a satellite if improperly used. The problem is that it can be difficult for operators on the ground, with their wide variety of equipment and skills, to get enough signal into the uplink to be heard, but not so much that they take more than their share. The solution is a dynamic signal shaper – a sort of programmable notch filter – made possible by the Software Defined Radio subsystem that is the basis of the transponder. Something like this was tried on AO-40, a system called “Leila”, and it helped a bit. But this new system is a whole generation further advanced. We got a chance to see and hear a demonstration of the prototype during a Symposium presentation. It was amazing.

The digital side of the new spacecraft is planned to be completely new and different than anything flown before. Utilizing the latest in digital signal processing, the engineering

team proposes to offer a number of advanced services, including digital streaming video, voice, email, and other bandwidth-hungry items. Because of the design complexity, the team is designing both the spacecraft and ground stations, with affordability in mind. They also envision a ground station which can operate an instant-messaging service similar to Jabber. The lower bandwidth requirements should make it possible to run low power, putting the service within reach of battery-based portable stations that can be deployed in remote or disaster areas.

And then to top it all off, the engineering team is aiming to solve one of the fundamental problems in spacecraft operations, that of keeping the bird positioned properly so that the antennas are aiming in the right direction (i.e. towards the operators). Traditionally, a spacecraft's antennas are useful for only a portion of the orbit, when they are aimed at the planet below. This time can be extended through complex systems added to reorient the craft, called 3-axis stabilization. But the team has decided to use a different approach – electronic antenna steering. Using a phased array of 36 antennas, they will be able to re-aim and de-spin the antenna to continuously adjust the antenna pattern so that it is aimed towards Earth. This is done by electronically adjusting the phase relationship between the antennas. By timing the changes with the spin of the spacecraft, the pattern can be made to continuously aim towards us down here. This should make the transponder useful during 70% of the approximate 12 hour orbit, and it eliminates the need for complex, expensive, heavy, and failure-prone 3-axis stabilization.

As I left the Symposium I glanced back at the conference room. On the wall over the displays was a large banner that identified the event. “2006 AMSAT Space Symposium”. Below was a fitting subtitle: “We are rocket scientists.” Indeed.

73s,

Greg KO6TH

Treasurer's News

(Reported by George, KG6LSB)

The White Elephant sale was a huge success. Besides being a lot of fun the Club took in \$403 for the Christmas Dinner on December 8th. Many thanks to all who donated the treasures and more thanks to those who contributed the cash to make this such a successful event.

I will start collecting dues for the year 2007 at the Christmas dinner. Save yourself \$.39 postage and bring your payment on the 8th of December. Remember to include the renewal form from the back page of the newsletter so that your information in the Club database can be updated.

A special thanks to ED AHLSTROM KQ6CK for his generous contribution to the Club. Ed is one of our 4 life members and makes a yearly contribution to the Club to support all its events. Many many thanks, Ed.

October Meeting Minutes

(Reported by Joe, KF6OQY)

General Meeting of Oct. 13, 2006

Meeting was called to order at 1930 hours by president Casey W7IB followed by the pledge and introduction of officers, members and guests. President Casey reminded the membership of the coming elections which will take place the November meeting and the need for more candidates. A need for a club VP is also still open. A reminder also of the club Christmas party coming up on Dec. 8 at the Newcastle United Methodist Church was announced. George KG6LSB made a motion to set the grand prize raffle at a \$250.00 gift certificate. Motion passed. Birton, N6UG made a motion to authorize payment for the use of meeting room for 2007. Motion passed. Birton also made a motion that a \$200.00 donation be made to the Newcastle Church for use of their facility in Dec. Motion passed. George KG6LSB also announced that the MS walk in Auburn has been cancelled however the Rocklin MS walk will take place as scheduled. Dottie K6DMS made a motion that the club send a package to our troops in Iraq. Motion passed. A collection followed and the generosity of the membership and guests yielded \$281.00. Dottie K6DMS and Joe KF6OQY volunteered to get the supplies and mail them. Thank you to the members and guests for making this happen. A total of 37 people attended this meeting. The white elephant sale took place and was a success, however at this writing it is not known what the results were. Everyone seemed to have a good time with lots of laughs.

Thanks to the auctioneer – Len Taylor, WB6HGS for a job well done.

Military Care Package

(Reported by Joe, KO6TH & Dottie, K6DMS)

At the general meeting of Oct.13, Dottie K6DMS suggested that the club send a package to our military overseas. After a short discussion with membership approval a collection took place. The generosity of the membership and guests attending the meeting yielded \$281.00. Dottie and I (Joe KF6OQY) volunteered to put the packages together and mail them. While this took place we found out that Birton N6UG has a nephew stationed in Afghanistan. It was decided to send the package to him for distribution to the personnel there. His name is Myles Gilbert. After 3 days of shopping we had 3 boxes sealed and ready for shipping. We mailed them out on Oct. 19 and were told that it would arrive there in 2 weeks. We would like to thank everyone for their support.

Dottie, K6DMS

Joe, KF6OQY

Jettie Hill

Hi:

As I turn over my ARRL position as the Section Manager for the Sacramento Valley, to Casey, W7IB, at the end of November, I would like to thank the members of Sierra Foothills for their help and friendship for all of these years. I first joined SFARC in 1986 and served two terms as President. Casey has been SFARC's President for a couple of years and I know he will do an excellent job as your Section Manager. I will be here to guide?? him the first few months, if required.

It is very important that we support the American Radio Relay League, as there are many commercial entities that would like to use or interfere with our frequencies. Do your part and join or continue your membership and donate to one or more of their funds to protect amateur radio.

Again many thanks, 73, Jettie, W6RFF

Jettie B. Hill, W6RFF

Section Manager, Sacramento Valley

American Radio Relay League

306 St. Charles Ct. Roseville, CA 95661-5008

916-783-0383

Note: Jettie was awarded "Ham of the Year" by Pacific Division Director Bob Vallio, W6RGG at the banquet at Pacificon in San Ramon in October.

From Fred, K6DGW

ARRL President Airs Concerns About Required Red Cross Background Checks

(Reprinted from ARRL Letter, Vol 25, No 43)

ARRL President Joel Harrison, W5ZN, is urging Amateur Radio Emergency Service (ARES) and other ham radio volunteers to tread cautiously when submitting information for background checks the American Red Cross (ARC) now requires. The ARC, with which the ARRL has a Statement of Understanding

(SoU) <<http://www.arrl.org/FandES/field/mou/redcro.html>>, this summer notified local chapters that volunteers and staff members must submit to criminal background checks by October 31. Harrison says the requirement extends to ARES volunteers who support Red Cross disaster relief efforts. In a statement <<http://www.arrl.org/FandES/field/RC-Background-Checks0610.pdf>>

October 24, Harrison said the League recommends that anyone submitting personal information for a background check very carefully read what they are giving the ARC permission to collect.

"The Red Cross is requiring volunteers to grant permission for more than just a criminal background check," Harrison asserted. "They are also requiring permission to draw a consumer and/or investigative consumer report on the volunteer." Harrison said that could also include credit and mode-of-living checks.

"The Red Cross has stated that they will not use credit reports," he noted. "Requiring that volunteers authorize the procurement of a credit report is inconsistent with this assurance."

The ARC has contracted with MyBackgroundCheck.com LLC (MBC) to handle the on-line background checks. Prospective volunteers visit a secure, encrypted Web site <<http://www.mybackgroundcheck.com/>>, click on the ARC logo and submit name, address, Social Security number (or other acceptable government ID), telephone number, and date of birth. The Red Cross says the overall results of the background check are not shared with the ARC.

In the course of applying, prospective volunteers must agree to let MBC obtain a wide range of personal information bearing not just on criminal background and creditworthiness but, MBC says, "character, general reputation [and] personal characteristics." MBC advises, "The nature and scope of this disclosure and authorization is all-encompassing . . ."

The Red Cross says its new policy is aimed at safeguarding clients, volunteers and employees alike. "Unfortunately, in this day and age it is critical that the American Red Cross and other agencies, employers and organizations perform due diligence in researching the people who will represent them," the ARC said in a statement supplied to ARRL.

The ARC apparently has not disseminated policy specifics at the national level. The only reliable information on what the background checks will entail is that on the MBC site. Various chapter-level memoranda the ARRL has obtained contain conflicting information about the program.

ARRL Field and Educational Services Manager Dave Patton, NN1N -- whose department supports the ARRL Field Organization -- is among those who believes the Red Cross stands to lose a fair number of volunteers because of the requirement -- and not necessarily just ARES volunteers.

"ARES members who are providing communications for ARC are working for ARC," Patton maintained, "and, as such, will follow their guidelines." He said the decision to go along with the new Red Cross policy is up to individual volunteers.

The SoU between the League and the ARC is ambiguous as to whether ARES members become Red Cross volunteers when supporting the ARC. While the document says "each organization retains its own identity in providing service," it further stipulates that ARES volunteers "in such cases when operators are required to carry American Red Cross identification" must register as American Red Cross volunteers. The SoU does not address the issue of background checks, however. The SoU comes up for review in 2007.

Radio amateurs who volunteered in the wake of Hurricane Katrina last year and following 9/11 in New York City were badged through as ARC volunteers. The practice still upsets some ARES volunteers.

Contact the Red Cross (toll-free 800-507-3960) with any questions regarding the background check program.


Unclaimed Badges

Our Treasurer, George, has several badges that have been ordered, but no one has picked them up. If you are one of these folks, please see George at the next meeting and pick up your badge.

Tom	KJ6MP
Art	K6KGY
Eric	KE6IKS
Tim	KF6BVU
John	KE6DK
James	WA0HYS

Pictures from White Elephant Sale





Don Tollefson
Owner

8025A Greenback Lane
Citrus Heights, California 95610-6509
Telephone 916.722-3300
Facsimile 916.722.2489
www.batteriesplus.com



Pictures courtesy of Matt, KC6RUO – Thanks Matt!

SIERRA FOOTHILLS AMATEUR RADIO CLUB
P.O. Box 1005
Newcastle, CA 95658

PLACE
STAMP
HERE

**SIERRA FOOTHILLS AMATEUR RADIO CLUB
2006 MEMBERSHIP APPLICATION**

Name: _____ Call: _____ Class: _____ e-mail: _____

Address: _____ City: _____ State: _____ Zip: _____

Associate Name: _____ Call: _____ Class: _____

Phone Number: _____ Application: (Circle One) New Renewal

Member Dues: Circle Amounts That Apply. Applications received in the middle of the year will be pro rated. Contact the President or Treasurer for exact rate.

Membership:	\$22.00	Name Badge:	\$7.00
Associate:	\$ 7.00	Repeater Donation:	\$ _____
Auto Patch Donation:	\$ _____	Newsletter Booster:	\$ _____
Miscellaneous Donation:	\$ _____	Christmas Donation:	\$ _____
Worldradio Renewal:	\$ _____	TOTAL:	\$ _____

OFFICE USE ONLY:		DO NOT WRITE BELOW THIS LINE	
Date: _____	Treasurer: _____	Secretary: _____	Roster: _____
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