

W6VIO CALLING

MAY



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Jet Propulsion Laboratory
W6VIO CALLING M/S 264-419
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BOARD

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EDITOR: EILEEN MCKINNEY KA6DGV

Club Meetings:

Everyone is encouraged to attend - Bring your lunch.

12 Noon

Program - Second Wednesday of month in 238-543

Business - Fourth Wednesday of month in 180-703B

Newsletter Article Deadline: The 5th. day of each month. If the 5th. falls on a weekend, the following Monday will be the deadline.

Your articles, ads, photos, diagrams, Letters to the Editor, or technical instructions should be submitted to Editor at address above.

EXCHANGE CLUBS: PLEASE NOTE ADDRESS ABOVE

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PRESIDENT'S MESSAGE by Art Zygielbaum, WA6SAL

I am sitting in a hotel room in State College, PA, home of Penn State as I write this. Amazing what modern telecommunications can do.

This will be short. First of all, the feed-back I've gotten from Gil Yanow's presentation has been very positive. I am sorry that a review board kept me from being there. Gil is one of those people that is not afraid to tackle difficult areas and to apply incredible enthusiasm in solving problems. He has certainly used Ham radio to advantage to broaden the horizons of the students of our friends and colleagues on the Navajo and Hopi reservations. This is, of course, one very important aspect of Ham radio. Peter, KK6QP, and I have been involved in building parts of a controller for a 440 MHz repeater to be part of newly formed Navajo group. And I understand that Gil has proposed that the club cooperate to build a 220 MHz repeater for the reservation. I encourage your participation in these worthwhile ventures. This can generate the kind of publicity that could offset some of the "band-trimming" plans held by others.

Carl, KG6LG, your illustrious VP, and I have worked out the programs for the rest of the year. Let me give you an indication of what's coming. Next month, June, we will look at planning for Field Day, and, if time permits, I'll show the new ICOM video on Ham Radio. In July, Jay Holladay, W6EJJ, will get us up to date on happenings in the ARRL. Rod O'Conner from Motorola will join us in August. Rod will speak about Iridium, the new satellite based "cellular" phone system that will literally blanket the globe. September's meeting will be an update on the club's facilities and repeaters. Jan Tarsala will be talking about our repeater system (and maybe the Kendecom will be up by then???) In October, Chuck Northcut, W7SRZ, the head of ICOM's amateur radio division, will tell us about the latest and greatest from ICOM. He'll also answer all of those questions like, "How do I modify my 220 rig to run on 10 meters?" November's meeting will be an experiment. This will be a dinner meeting to wrap up this year's activities. I am still negotiating with the "dinner speaker." He is being a little reticent, but I'll keep at it. (More next month.) The last month in my tenure, December, will herald Courtney Duncan talking about amateur satellites and amateur satellite operations.

We are working with JPL's facilities organization to find a better home for the Ham Shack. They are working hard to be accommodating within their constraints. I hope that I'll know more by next meeting.

It's going to be a busy year. We still need volunteers. Don't worry about your lack of experience or lack of time. We all have those problems. Please give me a call at X4-3564 if you can help.

73 until next time, Art

SATELLITE NEWS by Courtney Duncan, N5BF

Satellite operating position upgrades have been moving rapidly. The new Az/El rotator system, a KR-5400B set from Yaseau, has arrived, has been assembled and calibrated, and is ready for mounting. Unfortunately, the push-up mast used up to now for the satellite antennas is not large enough to accept the new rotators, nor strong enough to safely support the system once reinstalled. Strategic Planning Committee workers are looking into the possibility of using the tower recently retired from TH-6 support service on the mesa or finding some other replacement support structure. The tower, a crank-up, will be used cranked all the way down - permanently - if we are able to adapt it for this service. Height above the ground is not critical in satellite work so long as there is sufficient turning clearance, height of the satellite is what counts! Indeed, too much height makes coax runs too long, a serious problem when the main frequencies used are 435, 1269.5, 2400, 145, and 29 MHz.

In parallel, the computer control system for these rotators has been ordered. This purchase used all but about \$7 of the ERC grant of \$930 for station automation that I mentioned last month. The "Kansas City Tracker/Tuner" system is manufactured by a small company (in New Jersey, nobody is sure where the "Kansas City" name comes from...) specifically for the satellite operator's market. It provides the necessary hardware to control rotators, such as our new ones, directly from satellite tracking programs, such as the one (Instant Track) that we have already acquired from AMSAT. Once the system is installed and calibrated and the software set up, a single keystroke will move the antennas to the appropriate headings in azimuth and elevation. The automation software actually runs in a background process in the computer (yes, even on an IBM-PC-XT!) such that the tracking program need not be running to keep the antennas in place once started. Although we have a second XT at the satellite position for digital satellite work, it will be possible to use the computer with the tracking hardware for backup if needed without losing our automatic antenna control ability. Use of two computers makes it possible to have the satellite tracking map and the digital activity on display on two screens at once, much nicer and simpler to understand for the operator.

The digital half of the committee has also made great progress this month. W6VIO now has a fulltime BBS for club members use and information. It has outlets on 2 meters, 220, and 30 meters. Look for more information on these developments in Jon Adams' report in this W6VIO Calling.

Courtney Duncan, N5BF
238-600

PACKET ATTACK! By Jon Trent Adams, NW6H

Introduction

NASA Space Project News! California Earthquake Reports! Just two of the new categories of updated-daily information available on the new JPL ARC packet BBS! The Strategic Planning Committee (formerly autonomous) has finished their initial installation of the AA4RE Packet BBS software on a donated IBM XT computer.

Since fall of 1990, the Strategic Planning Committee, consisting of Jon Adams NW6H, Courtney Duncan N5BF, Steve Jenkins N6UNI, Gerry Walsh KB6OOC and Cliff Yamamoto KA6JRG have been actively assembling the hardware and collecting or writing the software that now provides amateur radio access to specific newsgroups on the

INTERNET network. This will now provide JPL Amateur Radio Club members and the local amateur community a source for timely information on the events that shape our lives here at the lab. In addition, the sophisticated AA4RE BBS software allows Club Member to leave mail messages for other Members; soon this ability will be expanded to allow forwarding mail to anywhere in the Amateur Radio NTS world!

What is an Amateur Radio BBS?

The AA4RE Amateur Radio BBS (Bulletin Board System) is similar to most BBS's that you may have encountered in the past. Like the proverbial cork bulletin board, the BBS allows posting of information for the interested to read. Not only can general information be posted for the benefit of all, but specific messages to other BBS users can be posted almost like a personal mail service.

In the case of the new JPL ARC BBS, software written by Cliff Yamamoto fetches NASA and JPL space news on a daily basis via an INTERNET telephone connection to a local JPL node run by Gerry Walsh. It also collects the generally-weekly California earthquake news when available. Several other news feeds are being considered for inclusion into the BBS news service.

Individual Club members and local hams may connect with the BBS and read this information at their leisure. Additionally, hams may leave messages to other Club members or to the sysops. Eventually, Club members will be able to send mail automatically from the JPL ARC BBS to anywhere in the world that NTS traffic can reach.

BBS Hardware and Abilities

For those members who have been to the Club's radio shack near the East Gate of the Lab, the computer and its attendant radios are set up along the southwest wall of the shack. Hardware includes the XT computer, a color monitor, and three radios, one on 145.010MHz, a second on 223.420MHz, and the last on 10.144MHz. The antennas used are located either immediate to the shack or up on the Mesa next to the water tanks.

The BBS software allows communications on any one of these three ports. The current plan is to support end-user (live, breathing hams) communications on the 145.01MHz port; with the current band plan for 220MHz, the 223.42MHz channel is more of an internode digital link channel as is perhaps too congested for human operators. And as there is currently no 200MHz frequency that really does support individual hams, we felt that the 223.42MHz frequency was the best choice for the near-term. The 10.144MHz frequency is the 30-meter packet forwarding channel; packet traffic from all over the country runs on this frequency along with a couple of channels in the 40 and 20 meter bands. We chose the 30-meter channel to reduce interference to Club members who use the 40 and 20 meter bands for voice or CW communications.

A Brief Primer On BBS Operation

The 145.01MHz channel operates at 1200 baud; the user will need some sort of 2-meter FM radio, a terminal program for their computer, a TNC and, most importantly, a good path to the Club's antenna up at the water tanks.

Issue a command to connect to W6VIO-1. You will get back a message welcoming you to the BBS, and if you are a new user, you will also be recognized as such and asked to register to the BBS if you wish. If so, follow the instructions and in the future, the BBS will reward you by addressing you by name! (oh boy) Then you may list

the subject headers of the accumulated mail and news with the command "L". Any news or mail addressed to you may be read with command "R" followed with the number of the message of interest. As far as personal mail, you may read only mail that is addressed to you or from you. More complete help for the commands is available by typing "H" for general help.

Lastly, if you find that you are unable to get the BBS to behave as you expect it to behave, you can call either Gerry Walsh at x43913 or myself, Jon Adams, at x43445.

SAREX STS-37 by Mark M. Schaefer, WB6CIA

Well with a good push, GRO is on its way to mapping the Gamma-Rays of the Universe. With five Hams aboard as well as a former JPLer, Jay Apt, Amateur Radio was bound to get some excellent exposure. The Astronauts were able to perform many of the educational sessions with schools through US ham stations as well as Australia and Brazil. These question and answer sessions were also broadcast live on NASA Select. So we were able to retransmit this over the W6VIO 224.04 MHz machine with the rest of the shuttle audio without having to pay a big phone bill to autopatch the conversations on WB6IEA 224.08 MHz.

Congratulations to Jim Steffen KC6A who was able to transmit Fast Scan Video up to the Shuttle. The picture had a bit of snow but it was good copy. His station ran about 600 watts output into an antenna which was pointed in real time via a hand on the rotator control. Other stations using ERPs of one megawatt did not come through as clear. I wish to thank Tom OHara W6ORG for his gracious offer to bring KC6As equipment to JPL to uplink to the Shuttle, but I think it worked out for the best. The setup was KC6As and he deserves the credit for the contact. Considering that the W6VIO shack has yet to contact the shuttle, from the lowest elevation point in the Laboratory, would have increased the risk. Because of the nature of Shuttle and Sarex scheduling, it is difficult to plan for a large amount of press and to get school kids involved. For more info see L.A. Times Monday April 8th.

W6VIO was prepared to contact the shuttle via voice, packet, and SSTV. On one pass SSTV was heard and the Robot 1200C attempted to sync to the signal but that was the extent of the reception. Next time our dual axis tracking system will be ready to help make it easier. The Shuttle orbit did not allow too many passes over Pasadena and most of those were during working hours. Hopefully the shuttle will not have problems with their audio cable allowing more packet and SSTV QSO's. There are 2 more Sarex missions on the Shuttle manifest.

SSTV at W6VIO

Slow Scan Television at the shack is a whole new picture. The Robot 1200C has been converted to expand its capabilities. We are now able to send and receive pictures in AVT (Amiga) modes, SC1 (Scoty) modes, Martin modes and FAX. If you don't know anything about these modes, join the club, read the documentation down at the shack. If you power everything up to get on the air, and you're the only one in the shack, just tune to 14230 or 14234. Usually there is a conversation about SSTV going on and they will be more than happy to walk you through using the equipment (especially if you promise to send them a few frames of Neptune or Magellan Venus). In the near future the software will arrive which will allow you to store and retrieve pictures from an IBM PC. This PC will also be tied to other sources of captured pictures and our packet BBS so LOOK OUT.

DX NEWS By Bob Polansky, N6ET

Conditions continue to be the greatest I've ever experienced, especially on 20, 15, and 10 meters. Only one major solar flare wiped the bands clean of DX for 2 or 3 days. These conditions are something to exploit while they're with us. "The DX Bulletin" again contains a large list of rare DX that is yours for the taking. I've listed the more exotic of those in this month's DX News which follows:

ANDORRA - C30EUA plans a major operation from 10 to 20 May from this small European country. They will be on cw, ssb from 6 to 160 meters as well as via satellite.

BANGLADESH - A Bangladesh operation again appears probable as VK9NS makes his way there after his Bhutan DXpedition during the first half of May. (He hadn't been heard yet as of 6 May.) If all goes well and the country dries out sufficiently from its recent major storm, Jim may get on the air for several weeks on 80 through 10 meters.

CROZET ISLAND - FT4WC is available on both the short and long path most mornings around 14012 kHz from 1200 to 1600Z. The DX Bulletin says Wednesday, but I've heard him other days also.

JERSEY - GJ/PB0AFQ will supply 10 meter only QSOs from 17 to 24 May from this famous WWII island.

JORDAN - JY9SR puts in a mean signal from Jordan from 2300 to 0100Z around 21020 kHz.

OMAN - A41KJ has been very active on the 15 meter long path with few takers. Look for his strong signals over the South Pole from 1200 to 1500Z around 21240 kHz.

REUNION ISLAND - FR5DN and FR5EL have both been reported from 28500 to 28525 kHz around 0700Z on the long path. Now that's fantastic!

SEYCHELLES - S79QZ can provide you with a 10 meter QSO if you're lucky around 28480 kHz on Sundays at about 1830Z.

TROMELIN ISLAND - FR5AI/T has been showing up around 14005 kHz from about 1300Z on the long path. He's very weak, but readily workable by W6's in spite of the large pile up.

TURKS AND CAICOS - Look for VP5W during the 25,26 May contest as well as VP5VEB and VP5VED before and after the contest.

Until next month, enjoy the DX. By the way, I got out of the sack at 4:30 AM yesterday and sure enough, the long path on 20 meters was already wide open. QST predicts show that 20 meters stays open all night most of the time now!

Bob, N6ET