
W6VIO Calling

JPL



Jet Propulsion Laboratory Amateur Radio Club
PO Box 842, La Canada CA 91012-0842

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Secretary:	Rob Smith, W6GRV	3-7937	W6JPL Trustee:	Eric Archer, N6CV	4-7350
Treasurer:	Chuck Sarture, KG6NF	4-2706	WR6JPL Trustee:	Jim Lux, W6RMK	4-2075
Director at Large:	Jim Marr, AA6QI	626-794-9805	WR6AZN Trustee:	Bill Wood, W6FXJ	760-256-9576

Upcoming Events:

- Every Monday: Emergency Communications Net: Noon, on WR6JPL 224.08/(-)/156.7 & 445.20/(-)/103.5, or WR6AZN 223.96/(-)/156.7 on Table Mountain.
- JPLARC Board of Directors (BOD) meetings: Normally, the first working Friday, every month, from Noon to 1pm in 180-703C. Call-in: 818-354-4044 ID 992 285 811 (without the spaces). **Next is May 8th.**
- **QST, QST, QST**: JPLARC Regular Membership meetings: Second working Friday every month from Noon to 1pm in 180-703C. Call-in: 818-354-4044 Meeting Number: 992 285 811 (without the spaces). Slides (if any) broadcast via JPL WebEx. **Next is April 24th. Guest speaker: Steve Townes WB4ILW, "Issues facing the JPLARC"**

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President's Message

By Steve Townes WB4ILW

It was noted in our Board of Directors meeting last week that the Club activity that gets the most participation is the Emergency Communication Net on Mondays at noon. The reason for this is that it is easy for Club members both on-Lab and off-Lab to participate – no parking problems, no hassles getting access to the Lab, etc. I would like to thank everyone who checks in and particularly Chris, KE6ABQ, for his dedication as Net Control every week as well as others back him up from time to time. Emergency Comm at JPL in the time of need is one of the key reasons that the JPL Amateur Radio Club continues to exist and be supported by the Lab.

I would encourage those of you who haven't checked in to do so. You don't have 220 MHz or 440 MHz equipment you say? No HT? These days one can find shiny new HTs under \$50 so it's pretty easy to get on the air. Hope to hear you on the Net soon.

Regular Meeting Mar 27

By Rob Smith W6GRV

Present were: Gary Block† KJ6IZX, Vaughn Cable† K6ZTA, Bob Dengler† NO6B, Courtney Duncan† N5BF, Jorge Gonzalez† KI6BJB, Jim Marr†* AA6QI, Steve Noland† WA6KLC, Charles Rhoades† WB6KZE, Lew Soloway† KK6QJE, Steve Townes†* WB4ILW, Bill Weber† N6CI. On the Phone: Walt Mushagian† K6DNS.

Note: † indicates a 2015 regular member (i.e., JPL/Caltech/Retired & 2015 dues paid), and * Indicates a BOD member. For a regular meeting quorum, the JPLARC Bylaws require a majority of the BOD (four or more) and at least five other regular members. We had two BOD members and ten other regular members, so we did **not** have a quorum (two BOD members short).

Steve Townes welcomed everyone to the meeting, followed by around-the-room introductions.

Treasurer's report (presented by President Steve Townes): Balance is currently \$4,504.19. [ed: See last month's issue of W6VIO Calling for the full report].

Secretary's Report (also presented by Steve Townes): We currently have a total of 37 members, of which 33 are voting

(regular) members and 78.8% of which are ARRL members. Also discussed some of the reasons to join or renew ARRL membership through the club [ed: see the "ARRL Membership" article later in this issue].

New Shack: The new shack has now been moved into place next to building 86 (see Figure-1) but not yet permanently installed (still up on blocks). We have been told that it will be numbered as building 329. Generators, patch panel and power switches are still under discussion. Cables to the antenna farm up on the Mesa are also still to be purchased and installed. There will be lots of work parties in the near future getting the shack configured once this work is finished. We are also told that there will be an adjacent storage trailer. We need to think of the shack as being tied to emergency communications. Chris Carson is doing an excellent job of coordinating the shack change. Thanks Chris!

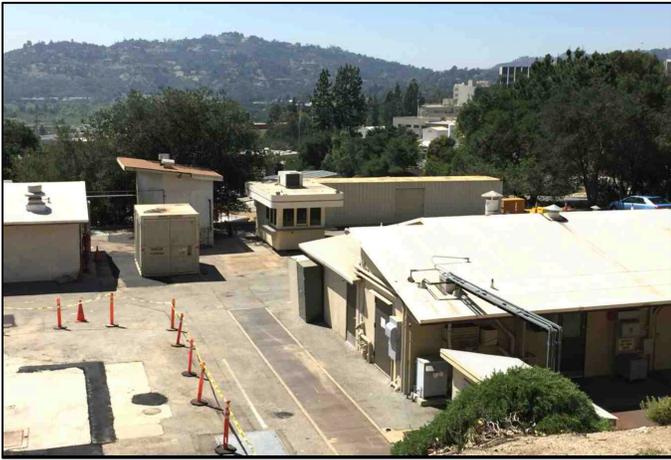


Figure 1: New JPLARC shack (designated building 329) moved into position (it's the former guard shack, now located just above center in the image above).

Field Day (FD): Time is getting close (coming up June 27-28). Last year went well and we would like to do something similar this year with the Pasadena Radio Club and Caltech at the Art Center in northwest Pasadena. While Jim Marr did a great job of pulling together FD last year, he will be retired before this year's FD so we will need someone else at JPL to lead the FD effort this year. Jim will be glad to coach this year's FD leader and help with the planning and execution to the extent that he can with the limited JPL access available to a JPL Retiree. Without an active JPL'er to lead the club's FD effort, it isn't likely to happen. Please consider volunteering. Contact Jim if you want to know more about what's involved in leading the FD effort. You can also look over last year's W6VIO Calling issues (available on the jplarc website: <http://jplarc.ampr.org>) to see what was done last year and how it worked out.

Equipment Sale: We had two offers on the ICOM IC-281H 50W, 2m, VHF transceiver with 70cm receive. The radio was brought to the meeting for all to look at prior to bidding. As advertised, the highest bidder at the end of the

meeting would be the successful bidder. [ed: Chuck Baker WB6CWI was the successful bidder].

Building 310 HF noise: No change. Still need to coordinate with Will Michael to continue the identification of the source.

Future Guest Speakers: Will be discussed at the next JPLARC Board meeting.

Fluke Scope Meter: Charles Rhoades WB6KZE showed a Fluke scope meter that he offered free to a good home but said that it will need new rechargeable batteries. [ed.- Don't know whether anyone took Charles' offer. If interested, check with Charles.]

Guest Speaker:

Courtney Duncan, N5BF, (Figure 2) gave an outstanding talk on the use of the Automated Packet Reporting System (APRS) while Bicycling (talk title: Bicycle APRS).

Courtney began with an overview of amateur packet radio that began in the early 1980's, largely screen-to-screen on 145.01 MHz FM at 1200 baud or BBSs on 145.09 MHz. Then BPSK packet satellites at 1200 or 9600 baud and HF FSK at 300 baud. 16 Service Set Identifiers (SSIDs) allows one call sign to have lots of unique stations. The Tuscon Amateur Packet Radio corporation (TAPR) provides an outstanding packet radio tutorial, at http://www.tapr.org/pr_intro.html.



Figure 2: Courtney Duncan N5BF with his APRS-equipped 1991 Ryan Recumbent bicycle. His Byonics Micro-Trak APRS transmitter is in the yellow case.

APRS was conceived by Bob Bruninga, WB4APR, a senior research engineer at the U.S. Naval Academy, in the late 1980's. Largely mobiles on 144.39 MHz FM at 1200 baud or HF LSB at 300 baud on 10.151 MHz. Also seen elsewhere, like satellites on 145.825 MHz from the Naval Academy. Does a lot more than positioning: weather; local repeater info; and brief text capability. Positioning can be one way and usually is. Supports

ASCII and binary modes. A readable and fairly short APRS tutorial can be found at: <http://www.g4ilo.com/aprs.html> and much more information at <http://www.aprs.org>.

Courtney has been on packet radio since 1986 using an MFJ-1270 TNC-2 and on satellites AO-16, WO-18 and LO-19 since 1990. He made a major cross country trip in 2004 using borrowed APRS gear and again in 2006 using his own APRS gear, for which he showed maps with APRS "bread-crumbs" tracks.

His bicycle APRS adventures began with the purchase of a 1991 Ryan Recumbent bicycle in 1996. His initial bicycle APRS station consisted of a TinyTrak3 APRS transmitter (see <http://www.byonics.com/tinytrak>) with an external GPS receiver and driving an ICOM IC-02AT transceiver. His current APRS approach uses an All-In-One Byonics Micro-Trak AIO (see <http://www.byonics.com/mt-aio>) that combines the GPS, TinyTrak, transmitter, antenna and batteries all in one weatherproof unit (the yellow box in Figure-2).

APRS transmitted position data is received by digipeaters and passed via the internet to <http://aprs.fi> where maps of active APRS stations are continuously displayed.

Courtney described (over a series of slides) the evolution of his experience learning how to get reliable APRS position information recorded along his bicycle commute path from home to JPL, describing challenges he experienced, changes in configuration (equipment, reporting period, antennas, etc.) and showing lots of breadcrumb trail maps displaying various degrees of success in obtaining reliable APRS reporting along different routes.

Now can do it all from your SmartPhone [ed.- There are several apps that allow licensed amateurs to participate in APRS via their SmartPhones. Check your app store.]

While Courtney has now "kinda stopped doing this" due to the time involved in record keeping and equipment maintenance, he does feel that the Crescenta/Canada Valley needs is an I-Node receiver in building 180 or on the Mesa (something that the JPLARC could do). This has been discussed in the past but not implemented.

For those who missed Courtney's talk and would like a copy of Courtney's presentation, either contact Courtney directly or ask Steve Townes for a copy.

Thank's, Courtney, for another great talk!

Board Meeting Apr 10th

By Jim Marr AA6QI

Present were: Jim Marr^{†*} AA6QI, Steve Townes^{†*} WB4ILW. On the phone: Chris Carson^{†*} KE6ABQ, Merv

MacMedan N6NO, and Mike Tope W4EF.

Note: † indicates a 2015 regular member (i.e., JPL/Caltech/Retired & 2015 dues paid), and * indicates Board member. For a Board meeting quorum, the JPLARC Bylaws require a majority of the Board (four or more). We had three Board members so we did **not** have a quorum.

Steve Townes opened the meeting with introductions around.

While Treasurer Chuck Sarture was not present, Steve Townes reported that Chuck had communicated that the club still has a Caltech Credit Union account balance of \$4,504.19, as reported last month.

Jim Marr reminded Steve Townes that after the April 24th Regular Membership meeting but before the May 8th Board meeting, he will need to set up a new JPLWebEx meeting for the club because the one that we have been using that Jim set up will go away after he retires at the end of April. This new meeting number would then need to be communicated to the membership before the May 8th Board meeting so those interested can call in.

Steve reviewed the tentative Guest Speakers list for the rest of this year. During this discussion, the issue of club interests came up and Jim reminded everyone about Bill Weber's membership survey during the summer of 2013 (for Bill's summary of the survey, see the June 2013 issue of W6VIO Calling at <http://jplarc.ampr.org/calling/2013/Jun2013.pdf>).

This survey showed emergency communication as the top interest area for those responding to the survey as also evidenced by the significant number of check-in's to the Monday Noon JPLARC EmComm Net, which typically runs between 10 and 20, with nominal about 15, and the good turnout for last year's October Great Shakeout exercise (see the EmComm articles in the Oct & Nov 2014 issues of W6VIO Calling).

Steve Townes then shared a number of pictures of the new shack (Building 329) showing trenching for power and antenna cables around the rear of the building. The input parameters for the JPL RF Safety survey for the new shack was also briefly discussed and it was agreed to use the highest power and highest gain antenna for radios above 100 MHz that might be used there.

Steve brought up the club's information infrastructure, which still needs attention.

Field Day 2015 is almost upon us and we still don't have a Field Day (FD) chair. Both Caltech and the Pasadena Radio Club (PRC) are interested in working with us again, though the PRC also is still looking for a FD chair. Mike Tope mentioned that the Caltech radio club's antenna trailer still needs to have the tower winch wire rope replaced before we use it again.

Finally, Merv brought up the subject of special events. He suggested that we could do some from home stations (using the W6VIO call) if the W6VIO trustee authorized it, so we could do some immediately without needing to wait until the feeds from the new shack up to the Mesa antenna farm is completed. Everyone thought that was a good idea and it was suggested that we look for some appropriate special events to consider doing this for.

The meeting was adjourned at 1 PM.

Past Time to Renew for 2015

By Jim Marr AA6QI

The JPLARC Bylaws (<http://jplarc.ampr.org/Bylaws-2014.pdf>) specifies annual membership renewals are due by the end of January each year.

Membership renewal consists of filling in the membership application form (<http://jplarc.ampr.org/applic.pdf>) and submitting the form along with your annual dues to our Club Secretary, Rob Smith W6GRV.

Note that the Board voted to increase the annual dues to \$20 for members but left family members at \$5 as before. This is the first dues increase since January 1991.

Recall that the liability waiver on the back of the membership application form does NOT need to be signed by active JPL or JPL Contractor employees. All others need to sign the waiver.

Also recall that newly licensed members do not pay dues for the first year of club membership.

2015 Committees?

By Jim Marr AA6QI

Operation of the Club depends upon the active workings of a number of committees. Committee chairs are appointed by the President. Club members interested in those committees volunteer to participate (just let any Board member or any member of that committee know that you'd like to participate).

Please consider volunteering to support one or more committees that are of interest to you. The Club needs your help!

Committees include:

Repeater Committee. Operates, maintains and improves the club's many VHF/UHF repeaters, with some exciting developments coming in 2015.

EmComm/JEARS Committee. Works with JPL emergency operations to provide support to JPL during emergencies. Includes organizing participation in the annual Great ShakeOut exercise in October.

Station Facility Committee. Maintains and improves the club's four operating stations and antennas. The big news in 2015 will be the move of the main shack (building 173) to its new location next to building 86 (just east of and on the other side of the road from The Mars Yard) and restoration of feed lines to our antenna farm on the JPL Mesa.

Field Day Committee. It is already past time to begin planning our 2015 ARRL June Field Day participation. This committee will lead those activities. Last year's field day committee chairman won't be able to serve as chair this year due to his retirement, so this is your chance to make field day what you would like it to be.

Publicity/Membership Committee: Maintains membership records, advertises activities and special events, and coordinates with other area amateur radio clubs.

Internet Services Committee: Operates, maintains and improves the JPLARC internet-based services, including our web site, email exploder, and ARRL affiliated club web presence.

Club Bulletin: Prepares and publishes the monthly JPLARC club bulletin: W6VIO Calling.

Meeting Program Committee: Arranges for interesting guest speakers at the monthly regular membership meetings.

Nominating Committee: Recruits the slate of officers for the next calendar year (starts activities in October).

Education Committee: Provides training for the use of club facilities and license upgrades. Volunteer Examiner credentials are a plus for membership in this committee.

Public/Special Events Committee: Arranges for special operating events (e.g., commemorative operating events like landings, launches, flybys, etc.). We could begin doing these anytime from our home stations using the W6VIO call (if authorized by the W6VIO trustee).

Refreshments Committee: While we list this committee, it did not operate in 2013 or 2014 and may or may not operate in 2015 unless someone is interested in doing it.

Holiday Banquet Committee: We haven't had a December holiday banquet for the past couple of years. These used to be held at a local restaurant and were a lot of fun. It would be good to get these going again.

Historian: Bill Wood W6FXJ (retired member) has been implicitly serving as the club historian but has indicated a desire to pass this on to someone new.

ARRL Membership:

By Jim Marr AA6QI

As an ARRL affiliated club, at least 51% of our membership must be ARRL members.

As of March 31, 2015, of our 37 CY2015 members, 28 (70%) are either Life (7) or Regular (21) ARRL members, and 9 are not currently ARRL members. Note that 78.8%

of our 33 voting-eligible members (i.e., JPLARC Regular members) are ARRL members.

While there are no requirements to maintain ARRL membership, there are some clear advantages to having ARRL membership. Some of these are:

- Receiving the monthly QST magazine and having access to all back issues electronically.
- Being able to subscribe to weekly ARRL news, propagation forecasts, and satellite ephemeris notifications.
- Being able to subscribe to the electronic monthly Amateur Radio Emergency Service (ARES) newsletter that may be of interest to members who wish to stay current on emergency communications.
- Member discounts on materials and training. For example, the ARRL Introduction to Emergency Communication Course is \$85 for non-members but only \$50 for members.
- You support ARRL, the only significant amateur radio advocacy organization in the U.S. that is fighting to protect our access to the airwaves.

Should those of you who are not already members and may wish to join, please do so through the Club rather than joining directly through ARRL. Why? If you join through the Club (new members), the Club retains \$15 of your membership fee to support Club activities. From your point of view, the amount you pay is the same either way. Even if you are a member who is just renewing, doing so through the Club nets the Club \$2, again without changing your costs at all.

To renew through the Club, see Secretary Rob Smith who will help you with the paperwork (don't worry, it's really simple!).

Thanks in advance for considering joining ARRL or for maintaining your membership.

Equipment For Sale

By Jim Marr AA6QI

The sale of the following items of surplus JPLARC equipment was approved by the quorum present at the October 24 2014 regular membership meeting. Please make or send your best offers to Club Treasurer Chuck Sarture at JPL. All equipment is sold as-is with a receipt from the JPLARC.

- ICOM IC-27H 25W 2m FM transceiver, asking \$60.
- Kenwood TR-9130 all-mode 25W 2m transceiver, asking \$100.
- ICOM IC-471A 1W to 25W 70cm all-mode transceiver with external PS-30 power supply, asking \$200.
- ICOM IC-471H 10W to 75W 70cm all-mode transceiver with internal power supply, asking \$250.

- ICOM AG-35 70cm mast mounted preamp, asking \$20.
- Packet Station consisting of an MFJ-8621A 2m Data Radio with crystals for 145.01 MHz & 145.09 MHz, and an AEA PK-232 MBX TNC, asking \$30 for the pair.
- RS232 to RS422 level converter, EASY model IC456A-R2, asking \$5.

Future Meetings

By Jim Marr AA6QI

All JPLARC meetings are being held on non-RDO Friday's from Noon to 1 PM in 180-703C. Upcoming talks (subject to change, as always):

May 22nd: Marty Woll N6VI, Vice-Director of the ARRL Southwestern Division, topic still TBD (somewhat our choice from presentation topics on Marty's web site <http://n6vi.com>). *Please let any JPLARC Board of Directors member know if one or more of these presentation topics are of interest to you.*

Potential topics for the rest of the year include (although not all speakers are confirmed yet and always subject to change):

June 19th: Contest software, rig connectivity, computer logging/ADIF/LoTW/eQSL (options & how), speaker TBD.

July 17th: DX for the Beginner, Vaughn Cable K6ZTA

August 28th: Digital communications (RTTY, PSK31, JT-9, JT-65, & others), speaker TBD.

September 25th: JEARS progress update, Will Michael KC6LOK.

October 23rd: Amateur Satellite Communications for the beginner (focus on how to get started), speaker TBD.

November 20th: HRO Burbank - gear demo, HRO's Eric Christensen K6EJC. *Please let any JPLARC Board of Directors member know if there is some particular piece of new gear that is of particular interest to you.*

Advertisements:



<http://www.hamradio.com>

The Burbank HRO store may offer up to a 5% discount on some ham radio "accessories" to JPLARC members, upon presentation of a valid JPLARC membership card.