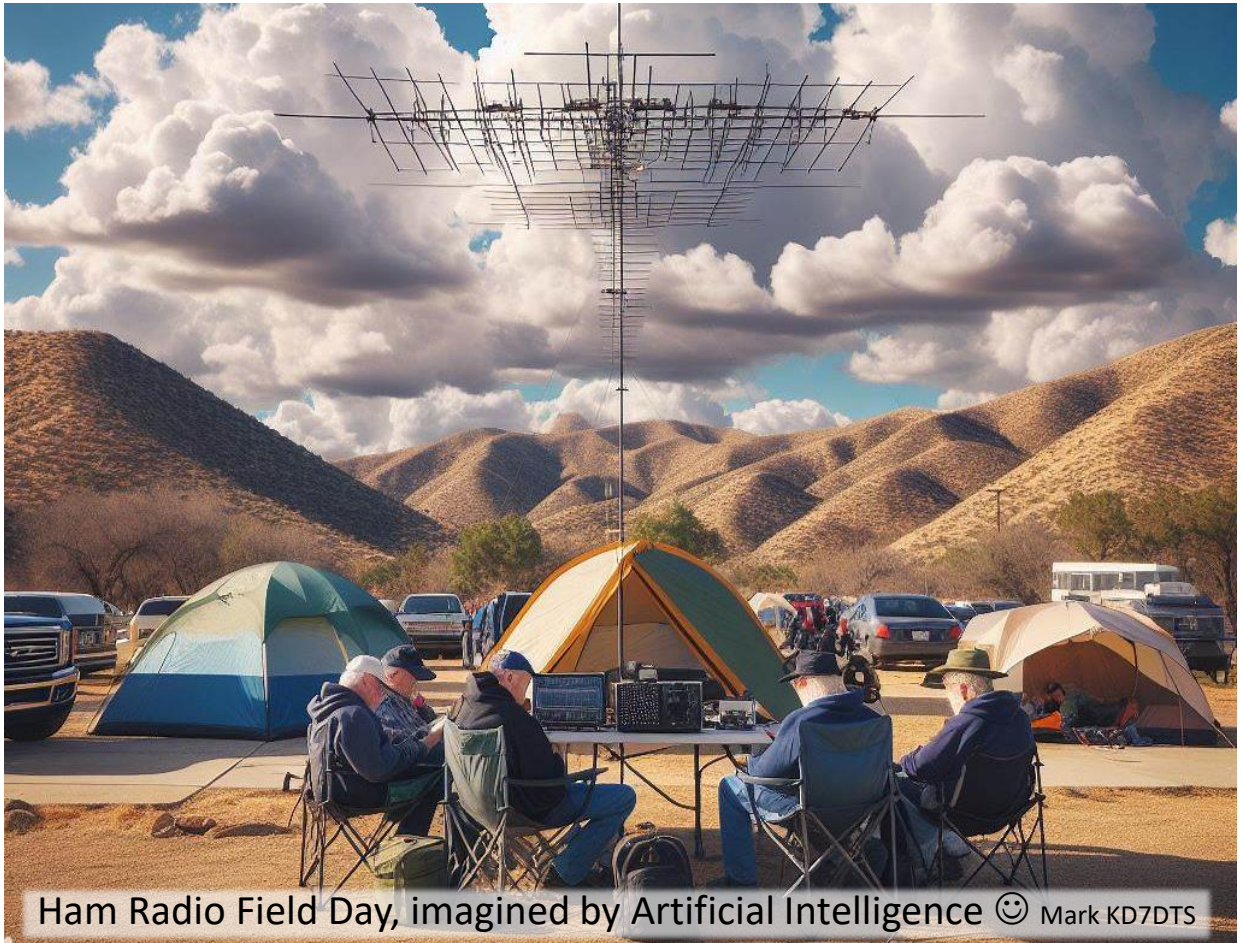




W6TRW **CROSSTALK**

Monthly news bulletin of the W6TRW Amateur Radio Club

March 2024



Ham Radio Field Day, imagined by Artificial Intelligence ☺ Mark KD7DTS

What's Inside

- General Club Meeting
- News & Announcements – RSVP for Owens Valley Radio Observatory Visit
- Membership – 2024 Application
- Repeaters & Nets
- About Us

Monthly General Club Meeting

When: Tuesday, March 12th at 5:30 PM

Where: S Cafeteria & Virtual Meeting on Zoom

The 2024 W6TRW Club Meetings are being held as hybrid in-person & virtual via Zoom. In-person meetings take place in the Northrop Grumman Cafeteria (see map, page 3).

For Zoom, click on the link below on your computer, tablet, or smartphone.

Same meeting link every month, 2nd Tuesday of every month, 5:30 PM Pacific Time.

FREE PIZZA ☺ !

<https://us02web.zoom.us/j/82794654895>

Phone dial-in: 1 669 900 6833, Meeting ID: 827 9465 4895

Speaker Topic for This Month:

"Test Equipment for Hams, including Vector Network Analyzers (VNAs) Explained"

Doug Millar, K6JEY

K6JEY explores practical, affordable choices for hams with the latest test tools and equipment from the lesser known to the more familiar instrument operating capabilities, and alternatives to help you make the right decision.



Doug Millar, call-sign K6JEY, has been a ham since 1957 and since 1990 likes to operate EME (Moon Bounce) on the sidewalk in front of his home. He is the ARRL Technical Advisor in Metrology, having written the 26th chapter in the ARRL Handbook on Test Equipment and Procedures (1995-2014), and keeps a home lab for measuring frequency, resistance, and RF power. K6JEY enjoys HF CW, AM, boat anchors, and microwaves. Doug has radios on bands up to 122 GHz. He holds an EdD in Educational Technology and is a semi-retired professor.

Is your multimeter accurate?!

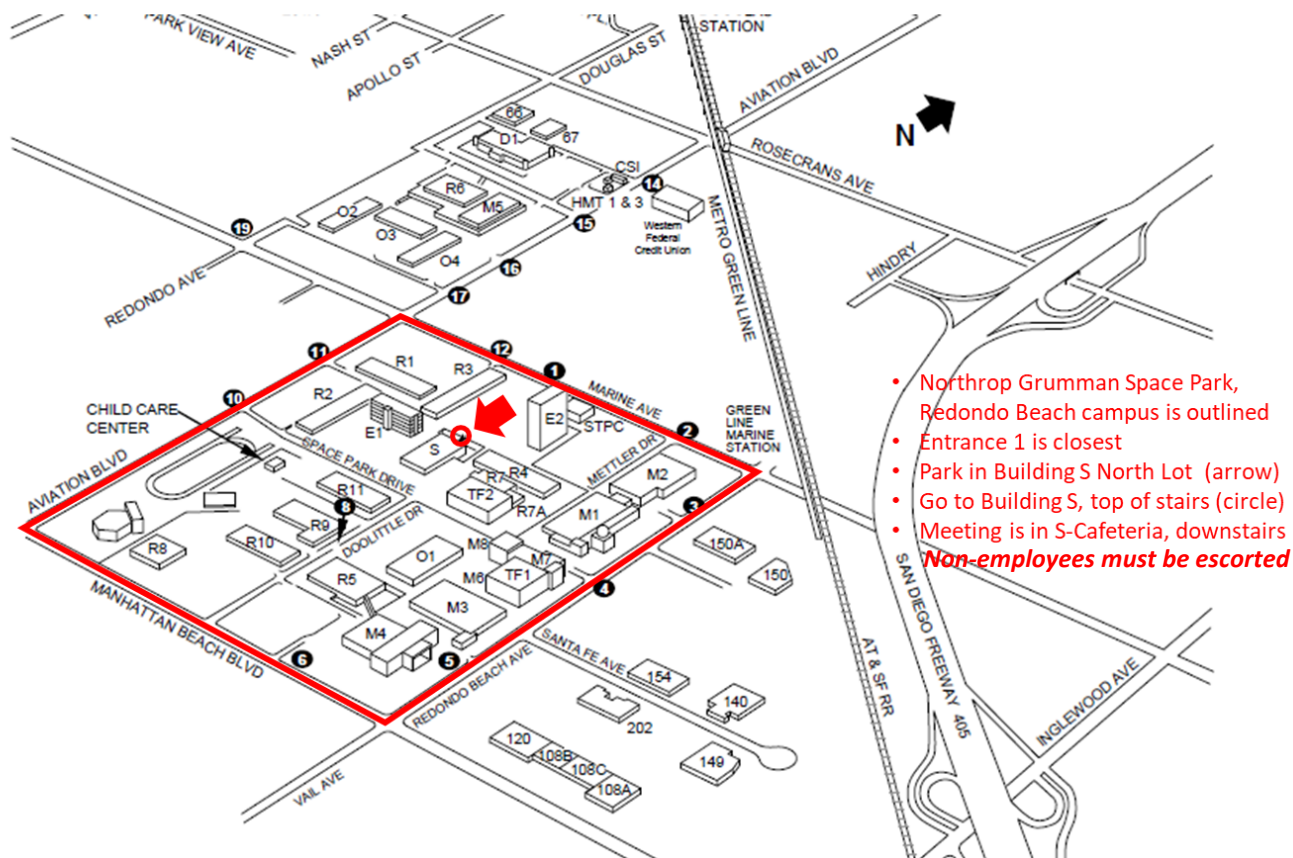
Bring yours to this month's meeting, for a test using Doug's voltage and resistance standards!

Doug will be leading a visit to Owens Valley Radio Observatory on the Weekend of June 7. The visit will include a tour of the observatory and nighttime astronomy. You can bring your own scope or look through others. More information is available if you email him at drzarkof56@yahoo.com. See the flyer and RSVP on following pages.

In-person W6TRW meetings - Map

Here is the map for the location of the Northrop Grumman Cafeteria. This building is in the NG Space Park campus, in the northwest corner of Redondo Beach.

Space Park Map – W6TRW Meetings



Classified Ads

Amateur Radio Ads

No new ham classifieds this month. If you have ham equipment to sell, please send the info to Greg KE6YEX as a reply to the Newsletter email; thanks!

INVITATION - Owens Valley Radio Observatory

Owens Valley Radio Observatory (OVRO) - Invitation and RSVP -

Astronomers setting up for nighttime astronomy.



Dr. Doug Millar, K6JEY from San Bernadino Microwave Radio Club, invites current members of W6TRW to the Cal Tech **Owens Valley Radio Observatory (OVRO)** near Big Pine in early June 2024.

Date: If you want to come **Friday June 7, 2024**

We will have an evening of astronomy to the south of Building #10 at the west end of the observatory. You can bring your own telescope and there will be a number of telescopes set up to share their views. 120V AC is available.

Date: Saturday, June 8, 2024

The main program will be on Saturday afternoon, starting in the dining area in Building #10. Please arrive by 1:00 pm Saturday June 8th.

We will go to the Pizza Factory in Bishop for dinner. -TBD

Saturday Night: We will also do Astronomy. You can bring your own telescope.

Date: Sunday, June 9, 2024

Gather for breakfast at a local restaurant (more info available on Saturday).

Leave whenever you like.

Check websites about the area and the Highway 395 for sightseeing opportunities.

[cont'd next page]

RSVP - Owens Valley Radio Observatory

OVRO Visit RSVP Form

This is an invitation from OVRO. W6TRW will collect and provide an RSVP list to Dr. Millar. Please send your RSVP in reply to the W6TRW Newsletter email; thanks!

Please provide current club member name, callsign, phone #, email with a name of non-member guest with their cell phone.

Current Club Member* Name: _____ **Call sign:** _____
Cell Phone #: _____ **Email:** _____

Non-Member Guest Name1: _____; cell phone #: _____
Under 18 years old: Yes/No

Non-Member Guest Name2: _____; cell phone #: _____
Under 18 years old: Yes/No

Non-Member Guest Name3: _____; cell phone #: _____
Under 18 years old: Yes/No

If you have more guests, please list.

- *Must be a current W6TRW member; **Non-member guests must sign the liability form.**
- No ID requirement for entry into OVRO for the tour.
- You must provide your own **transportation and lodging.**

You can stay at a motel nearby, camp in a campground, bring a tent or trailer and stay at the OVRO site. If you decide to camp at OVRO, you must provide your own bathroom, as the buildings will be locked. There are places to eat in Big Pine and Bishop.

Millimeter Wave Array dishes at the site.



[cont'd next page]

Directions - Owens Valley Radio Observatory

DIRECTIONS TO OVRO

- The observatory address is: **100 Leighton Lane, Big Pine, CA.**
- Please **arrive at OVRO by 1:00 PM on Saturday** for the program.

The directions from the LA area:

Drive north on the 5/14 through Palmdale and Mojave.

Continue past Inyokern and join 395. Continue on North through Little Lake, Lone Pine and Independence.

Continue through Big Pine.

Just as you get to the end of town turn right on Highway 168 towards the Westgard Pass.

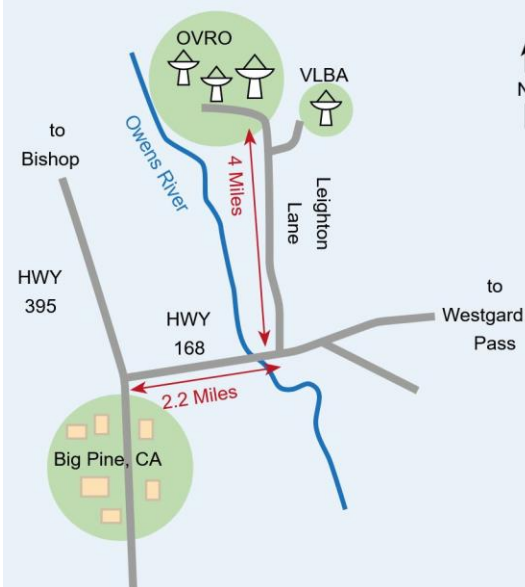
Go about 2 miles and turn left onto Leighton Lane, the observatory road.

You should be able to see the 40m dish in the distance, but it is 4 miles away!

Continue through the gate onto the property and follow the blacktop road.

Go past two 90-foot telescopes to the west end of the site and park.

Directions to OVRO



Located southeast of Bishop, the Owens Valley Radio Observatory is 6 miles from the town of Big Pine. The only public access road to OVRO is via Highway 168, which begins at the northern end of Big Pine, by a large pine tree. Turn east onto Highway 168. After approximately 2 miles you will cross the Owens River Bridge. 1/4 mile past the bridge, turn left on a paved road, Leighton Lane.

Our main dish to explore is the middle one at 40m in diameter.



[cont'd next page]

Tech Article - 20-10 Meter Portable Vertical

20-10 Meter Portable Vertical

Bill Shanney, W6QR

Bill got a lot of interest in this antenna at the W6TRW February 2024 meeting. Here are the details!

There are a lot of portable verticals available today. Some are quite expensive, and most do not provide full $1/4\lambda$ performance. To be fair the best ones only lose 25-35% of your transmitted power, but why suffer losses when you have a good alternative. The photo below shows a full $1/4\lambda$ vertical mounted on a camera tripod about 3' off ground with 2 sloping $1/4\lambda$ radials.



The vertical is a 17' telescoping whip available from MFJ or Chameleon for ~\$80. It can easily be adjusted for resonance on 20-6M. There are no coil losses like many of the commercial antennas.

Two radials are sloped towards ground which increases the feedpoint resistance to around 50Ω. No tuner is required. Each radial is a 25' metal tape measure with a short alligator clip pigtail soldered to the end. It is a simple matter to adjust the radial length using the ruler scale. The measure is also used to adjust the whip length. I got my tape measures from Harbor Freight for \$5 each.

[cont'd next page]

Tech Article - 20-10 Meter Portable Vertical (cont'd)



Tape measure radial with alligator clip.



There are many mobile mounts available for 3/8" studs. The photo shows one I found on Amazon for \$13.

You will have to get a metal plate to attach to your tripod to hold the stud mount and attach the radials. I used some old hardware from my junk box plus a camera quick release plate.



In the field you simply setup your tripod, measure the whip for your band of choice ($234/f$ in ft), pull out the tape measures to that same length and clip them to the plate and you are on the air. In practice better results may be had with slightly shorter radials. A VSWR meter should be used to confirm the VSWR minimum is centered on your frequency. A VSWR of 1.5:1 is considered excellent and should be easy to achieve.

###

W6TRW Discord Channel

Did you know W6TRW has an active online discussion of ham radio adventures, build projects, and event planning? This is an excellent way to keep up with hot topics in the club. If you haven't already, please join your fellow club members on Discord. You can sign up here: <https://discord.gg/9JMY9SydV3>

Recent posts on the W6TRW Discord:

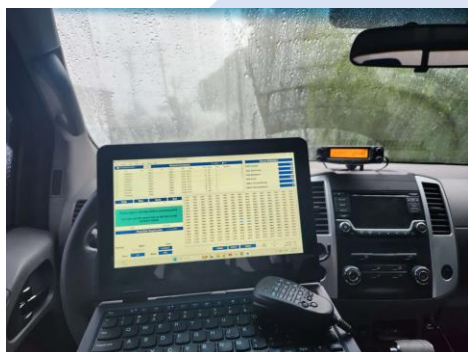
10 GHz contact S+20 over 9, Devin KN6PHZ to Dylan N6MX, in San Pedro:

Mark KD7DTS — 11/12/2023 9:30 PM

[W6/CT-004 Mt. Baden-Powell \(11/2023\)](#)



Dylan N6MX — 01/20/2024 4:39 PM
Anyone doing the VHF contest today?
CQ de N6MX 146.580



Greg KE6YEX — 06/04/2023 1:01 PM

Here are the latest thoughts on the QSL card.
Should we have any more info on the front?
Should all the contact details be on the back?
What are your preferences?



Practicing iPhone SSTV decoding in prep for ISS downlinks:

Dylan N6MX — 12/17/2023 9:50 PM

@Ashley KO6BKR @Bill KO6BHZ I made a W6TRW holiday SSTV card that I'm ready to try transmitting on the repeater.

Ashley KO6BKR — 12/18/2023 9:19 PM

Thank you Dylan! This was great practice

QSLs from the Past – September 1967

Longtime W6TRW member Mike Semos, K6HF, as a young ham, contacted our original Amateur Radio Club, in its first day on the air!

Hi Dylan,

See attached QSL card I found (yes amazing).

When I had novice license, WN6WFM and I contacted WB6WPO for their first day on the air on 2M AM with my Heathkit Tower!

Didn't seem like much then and I had no idea would be working at TRW 9 years later.



55 years later the card is cool!

73,

Mike, K6HF

PS

I found a copy of a 1967 printed call book page with my Novice license listed when I was kid! WB6WPO was listed as the TRW Systems Group ARC.



ORBITING GEOPHYSICAL OBSERVATORY (OGO) fully deployed is 60 feet long and 24 feet across. Total weight is about 1100 pounds or more with some 200 pounds of experiments. The data handling system stores up to 86 million bits of data and can transmit all of it in 23 minutes at rates up to 128,000 bps. 400-mc solid state transmitters (4 watts and 500 mw) have a range in excess of 100,000 miles.	
RADIO <u>WN6WFM</u>	Confirming
QSO OF <u>23 SEPT</u>	19 <u>67</u>
AT <u>1334</u> PST, GMT, ON <u>145</u> MHz	
UR <u>QW</u> AM/2KSSB SIGS RST. <u>5-9 +10</u>	
XMTR <u>PAUN05</u>	PWR <u>18W</u>
RCVR <u>PAUN05</u>	ANT. <u>G-P.</u>
Pse QSL Tnx <u>CARL, WB6WYC</u>	

ARS WN6WFM

"FIRST DAY"

"What we do in life, echoes in eternity." -- Gladiator (2000)

Crosstalks from the Past – May 2007

For fun, a page from W6TRW's past. See <https://w6trw.com/crosstalk-newsletter/> for newsletters.

Working Scarborough Reef DX-pedition from the W6TRW shack, April 2007

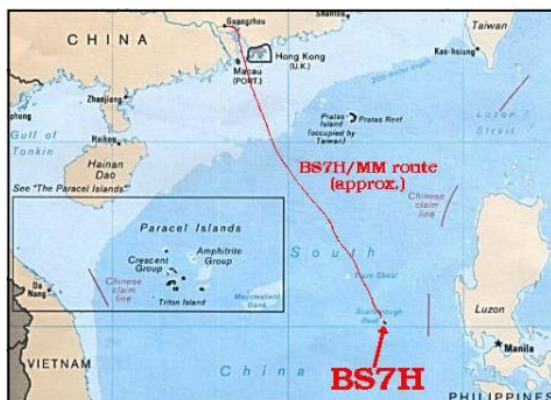
W6TRW Works The Rarest DXstation

April 29th, 2007

-----NEWS ITEM-----

W6TRW and two of its members Craig Gullickson N6ED and Pete Livingston W3CRI worked the world's rarest DX station!

Scarborough reef, a very small treeless coral atoll in the China Sea off the coast of the Philippines, was the site for a 10 day DX-pedition, starting on April 29th, and operating under the call BS7H.



'Man, he was booming on 40 meters—five nine plus,' Craig, N6ED reports. In fact, I (W3CRI) also worked him on two bands (40 and 20), but Craig worked him (and logged W6TRW's call as well) on 40, 30 20 and 17 meters. And indeed, last Friday morning at about 0630, he was coming in 599 on 40 meters. The pileups were the fiercest I have encountered in a long time, but the 40 meter beam certainly did its job—lobbing our signal into the China Sea with telling effect. Neither Craig nor I had to call long—we got through the immense pileup only after a few minutes.

The last time this godforsaken piece of coral was radiating was in 1997 and then, I've been told, the DXpedition ended under the guns of the Philippine navy in some sort of dispute. This time, however, all ended peacefully.

Daytime temperatures were in the 100's; the island is no more than four or five feet above sealevel, and the rigs and operators received doses of salt spray along with plenty of solar photons. No natural cover. In short, it seems a hellish place.

But those are not the only hazards—. "There's rain, there's wind, there's lightning, there's piracy," as one member reports.

Antennas include a STEPPIR beam and verticals, although the 80 meter balloon-borne antenna didn't work because of high winds (An idea solution would be our phased array and the aerostat balloon which 'likes' wind because it provides lift and stabilizes the balloon). A reported 80 meter BS7H was a pirate.



The Shack Master!
Pete Livingston W3CRI



Craig Gullickson N6ED

News and Announcements



Membership

The W6TRW 2024 Membership Form is on our [Membership](#) page. Be sure to renew for the 2024 club year! **Our annual participation fee for the W6TRW club is still \$5, as it always has been! You can now send the participation fee ELECTRONICALLY to Dylan N6MX – see the note in the new 2024 W6TRW Membership Form! And you can scan your signed ink signature pages and send to Dylan's email address on the form. We're going electronic!**

Our durable, high-tech magnetic club badges are now \$30, the real cost of making them. The badge, with your call sign, name & W6TRW logo, will last for many years!

Each year, when you renew or join the W6TRW Amateur Radio Club, we will send out a physical membership card via regular mail, as confirmation that you are a member for the year.

W6TRW Swap Meet – Last Saturday of Every Month !

Our club puts on the largest monthly amateur radio swap meet in the Los Angeles area. The W6TRW Swap Meet has been held monthly for almost 40 years. The W6TRW Swap Meet is well known throughout the western US and even the world! It is always held the last Saturday of every month, rain or shine, holiday or not, from 7:00 AM until 11:30 AM, in the R2 parking lot near the southeast corner of Aviation Blvd. and Marine Ave. where the cities of Redondo Beach, Manhattan Beach, and Hawthorne meet. Talk-in on 145.320 -600 PL 114.8.

If you wish to sell at the swap meet, please visit our [swap meet sellers' webpage](#) for all the necessary information.

Our Swap Meet Manager, Wendell KE6ASC, is always on the lookout for volunteers to help at the Swap Meet. If you'd like to get up early and help the club put on this important traditional activity, email Wendell at w6trwswapmeet@gmail.com to get more information.

The next swap meet is the last Saturday of the month, from 7:00 am to 11:30 AM. See you there!

W6TRW Club Members SHOW 'N TELL

W6TRW Club Members SHOW 'N TELL / DIY / Maker / Activity Talks

At past and recent club meetings, we've had members of our club describe and/or demonstrate projects they have created or been involved in. We'd like to continue that tradition! We're all excited to hear what you've been doing. All you need to do is put together a few slides!

If you've been building something interesting, or engaged in recent ham radio adventures or volunteering, please send a reply to newsletter@w6trw.com, and we'll get you on the agenda in 2024!

Please REPLY if interested!

News and Announcements

W6TRW Repeaters Now Playing Newsline & ARRL News

We're putting a regularly scheduled rebroadcast of [Amateur Radio Newsline](#) ham radio news and the [ARRL weekly news](#) on the W6TRW repeaters on Wednesdays and Sundays at 9:00pm Pacific time! Newsline is a free service that produces a weekly report of important goings-on in the ham radio community and is a great way to stay in the loop on current ham radio topics.

Take a listen and let us know what you think!

-- Shackmaster, Dylon N6MX

[AMSAT - Amateur Radio in Space](#)

The number of active amateur radio satellites keeps increasing. Here is the current satellite status, making it easy to find satellites you may be able to hear: <https://www.amsat.org/status/>. For many satellites, the telemetry downlink or Morse code beacon is easy to receive with a simple dual-band VHF-UHF magmount antenna.

If you have a VHF/UHF SDR (software defined radio) connected to your computer, you can see the Doppler shift of the signal as the satellite passes over.

To find out when a satellite will fly over your location, go to <https://www.amsat.org/track/index.php>. Just put in your grid square or approximate latitude-longitude. One of the most reliable and easy downlinks is the ISS (International Space Station) on 145.800 MHz.

The next step is transmitting – making amateur contacts through the satellites. AMSAT satellites for amateur communications: <https://www.amsat.org/two-way-satellites/>.

[Amateur Radio Contests - Calendar](#)

There are many amateur radio contests during the year, for the full range of different radio interest areas. Click [here \(WA7BNM's Contest Calendar\)](#) for a listing of all the amateur radio contests.

Just listening to contests is a great way to hear a lot of stations from all over the US and even all over the world – better than just randomly tuning on any given day, hoping to hear something.

One popular contest is the [ARRL January VHF Contest](#) (The third or fourth full weekend in January) and the [ARRL June VHF Contest](#). The VHF contests are easy and fun – just find your grid square at [Amateur Radio Ham Radio Maidenhead Grid Square Locator](#) and then key up your VHF/UHF FM radio on the calling frequencies – 146.52 MHz and 446.000 MHz. The calling frequencies 146.52, 146.55, and 146.58 are busy during the contest and you can make many contacts just by answering contest calls. It's a great way to check out your VHF/UHF radios!

W6TRW Repeaters and Nets

W6TRW Repeaters

VHF 2 Meters • 145.320 MHz, Offset: -600 kHz, PL: 114.8 Hz; Located in Redondo Beach, CA • All-Star node 505680
UHF 440 MHz • 447.000 MHz, Offset: -5 MHz, PL: 100.0 Hz; Located in Redondo Beach, CA • All-Star node 505681
(Our VHF 145.320 MHz and UHF 447.000 MHz repeaters are linked – but may be disconnected for certain nets listed below)
UHF MotoTRBO DMR • 446.050 MHz, Offset: -5 MHz, Color Code: 2; Located in Redondo Beach, CA

Monday K6MBC Manhattan Beach MBCERT Net

Weekly; Monday nights at 6 PM *except* first Monday of the month, on the W6TRW 447.000 MHz repeater

Monday Lomita and South Los Angeles DCS Net: Weekly

Monday nights at 7:30 PM, on the W6TRW 145.320 MHz repeater

Tuesday Absolute Tech Net: Weekly

We retransmit the weekly [Absolute Tech Net](#) on Tuesday afternoons at 4 PM Pacific time. This is a great group of knowledgeable people who are enthusiastic to share their knowledge with others. Please see the [Absolute Tech Net web page](#) for the many topics they have discussed, and upcoming topics.

Wednesday W6TRW Emergency Communications Team (ECT) Net: Weekly

The ECT net is held weekly Wednesdays starting between 12:00-12:15pm on our 145.320 MHz and 447.000 MHz repeaters. The whole net only takes about 10-15 minutes.

The purpose of the net is to promote club participation and to increase the general awareness of hams to emergency communications resources. The net is open to all W6TRW members as well as any non-member visitors!

Check-ins reply with their name and callsign, general location, and their radio communication capabilities at the time.

During an actual emergency, the W6TRW 145.320 MHz repeater will be dedicated to DCS, and won't be available for open use, but it will be very useful to monitor! The W6TRW 447.000 MHz repeater should be available and open for use during an actual emergency, so please save a memory in your radio for our 447.000MHz repeater!

Wednesday Northrop Grumman HF Family Net

Also at noon Pacific Time on Wednesday is a long-running Northrop Grumman net on 14.270 MHz. Northrop Grumman and TRW employees / retirees are welcome to check in and represent the West Coast!

Thursday Space Net

Our W6TRW 145.320 MHz and 447.000 MHz repeaters host the long-running Space and Information Net every Thursday evening at 7:00 PM. Ronnie N6SHI (Space Hams International) is the net controller, taking check-ins and providing the best of the weekly space news, launches, and visual flyovers. Tune in and check in!!

Newsline & ARRL Weekly News – Wednesday and Sunday

9:00 PM & 9:30 PM

News released every Friday

About Us – W6TRW

The W6TRW Amateur Radio Club is a non-profit organization that started in the early 1960s.

The W6TRW Amateur Radio Club started as the TRW ARC and held the club call sign WB6WPO. The club became an ARRL Affiliated Club in 1971, and the club call sign was changed to W6TRW in 1974. The club was formed at the TRW facilities in Redondo Beach California comprised of employees of the aerospace company.

Our club station is located in Building S and includes 2 Yaesu FT-1000's, Alpha 87a amplifier, and two towers with multiple HF antennas in Redondo Beach, California. We also have all-mode capability on 6m, 2m, 440, and 1.2 GHz. We have ATV, and satellite and packet stations.

W6TRW sponsors open repeaters on 2 meters and 440 MHz that serve the Los Angeles basin. We also have a Motorola MOTOTRBO Digital Repeater in Redondo Beach. IRLP node 7067 is connected to our open 440 repeater and typically is connected to the Western Amateur Linking Association LAX Reflector 9350. Please visit our repeater page for more information!

The Amateur Radio Club (W6TRW) offers a full range of radio related activities, including contest operating events, community public service events, picnics and classes for those wishing to obtain their first license. Stop by the Amateur Radio Swap Meet on the last Saturday of the month in the R2 parking lot from 7:00-11:30am – you'll be surprised by what you will find.

W6TRW Officers 2024

Elected Officers:

President (Dylon Mutz)
Vice President (Mike Hamada)
Treasurer (Jason Fujino / Wendell)
Secretary (Mark Knight)
NGRC Commissioner (Greg Madden)

Staff Officers:

Banquet (Janice Miya)
Publicity Chair (Greg Shreve)
Training Chair (Chris Wachs)
QSL Manager (Craig Gullickson)
Librarian (Janice Miya)

Appointed Officers:

Activities Chair (Janice Miya)
W6TRW Trustee (Chris Newton)
Technical Chair (Chris Wachs)
Swap Meet Manager (Wendell Young)
Membership Chair (Wendell Young)
ECT Coordinator (Greg Madden)
Web Master (Deedee Banh)
Web Page Designer (Rich Sauer)
Equipment Chair (vacant)
S-Shack Master (Dylon Mutz)
Field Day Chair (Greg Shreve)
Past President (Chris Wachs)