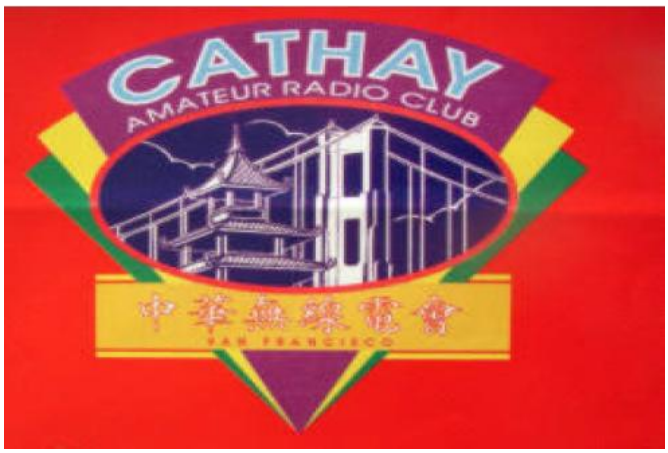

Cathay September 2026

www.cathayradio.org

President North: Leonard Tom, *NX6E* **email:**nx6e@sonic.net
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Web Master: Edison Fong – *WB6IQN* - **email:**edison_fong@hotmail.com
Mission: The Cathay Amateur Radio Club is basically an active social club of Ham Radio Operators and their spouses. We support local community requests for HAM emergency communications. Several of us are trained in CPR/ First Aid and are involved with community disaster preparedness.

Monday Night Net Time: 9 PM Local Time/PST, As of 8/21/2023 we are switching over from using Repeater: WB6TCS to **Nick Cassarino's Repeater: WA6GEL UHF 444.800 Mhz, Offset +5 Mhz, CTCCS/Tone PL 179.9 Hz on Monument Peak, Milpitas. If you are in the North Bay, one can use the WA6GEL repeater North Bay located on Mt. San Bruno - 444.8 MHz offset +5 Mhz, CTCCS/Tone PL173.8 Hz**

The CARC Monday night net is the best way to find out the latest club news. All check-in are welcome.

Message on Behalf of the President: Leonard Tom, *NX6E*

Hello CARC Members and Friends;

Many thanks to both Nick Cassarino for the use of repeater – WA6GEL for our CARC Monday Night Net.

Additional folks are needed to help out with conducting the CARC radio net on Monday nights. Please contact Ed Fong (edison_fong@hotmail.com) if you are interested.

Tech Article Introduction:

Astronomers using the **European Southern Observatory's Very Large Telescope (VLT)** have reported find a **exomoon** orbiting a **brown dwarf** in the **CD-35 2722** system, about **73 light-years** from Earth. An **exomoon** or **extrasolar moon** is a natural satellite that orbits an exoplanet or other non-stellar extrasolar body.

Very Large Telescope (VLT) is a top ground-based astronomy facility operated by the European Southern Observatory (ESO). Located on Cerro Paranal in Chile's Atacama Desert at an altitude of 2,635 meters, it uses four massive 8.2-meter (26.9 feet) unit telescopes that work together to capture clear views of space.

For more information, please read the Tech Article Session of this newsletter.

Tech Session In Sunnyvale Introduction:

Ed Fong is hosting his much-anticipated lecture on topic: Milestones in the Walkie Talkie. This much anticipated talk will take place on Saturday September 12th – 12 noon – 3PM at Ed Fong's home.

Wrap Up

I wish to thank our CARC members that set aside their valuable time to participate in our Monday night's nets.

Chat sub s'em to all you CARC members! - Leonard Tom, *NX6E*

Public Service Announcements

HAM CRAM / HAM Licensing

For upcoming HAM Licensing locations please refer to:
http://www.arrl.org/find-an-amateur-radio-license-exam-session

Auxiliary Communications Service (ACS)

The Auxiliary Communications Service (ACS) is a unit of trained professionals who supply communications support to the agencies of the City and County of San Francisco, particularly during major events/incidents. ACS goals are the support of gathering and distribution of information necessary to respond to and recover from a disaster.

The ACS Net begins at 1930 hours (7:30 p.m. PT) local time each Thursday evening, on the WA6GG repeater at 442.050 MHz, positive offset, tone 127.3 Hz. The purpose of this net is to practice Net Control skills,practice checking in with deployment status in a formal net, and to share information regarding upcoming ACS events. Guests are welcome to check in. ACS members perform Net Control duty on a regular basis. On the second Thursday of each month, the net is conducted in simplex mode on the output frequency of the WA6GG repeater, 442.050 MHz no offset, tone 127.3 Hz.

ACS holds its General Meetings on the third Tuesday of each month
from 1900 hours to 2100 hours local time. Currently meetings are exclusively conducted over Zoom during the COVID-19 pandemic, ACS looks forward to meeting in person again as soon as possible.

Upcoming meeting dates in 2026 are:

- September 16, 2026
- October 21, 2026
- November 18, 2026

Location of in person future ACS meetings are yet to be determined as the regular location is under reconstruction. All interested persons are welcome to attend. For further information contact Corey Siegel KJ6LDJ <kj6ldj@gmail.com>.

For more information, please attend an ACS meeting, check in on the ACS radio net, or call 415-558-2717.

Free Disaster Preparedness Classes In San Francisco – NERT Taught by San Francisco Fire Department (SFFD).

https://sf-fire.org/nert/nert-calendar-meetings-trainings-events

Training Classes: see above website. TBD

+ Recertifications
TBD

***SFFD DOT** is the Fire Department Division of Training. All participants walking, biking or driving **enter through the driveway gate on 19th St.** between Folsom and Shotwell. Parking is allowed along the back toward the cinderblock wall.

Visit ***www.sfgov.org/sffdnert*** to learn more about the training, other locations, and register on line. Upcoming Special NERT Events.

San Francisco Police Department: Auxiliary Law Enforcement Response Team (ALERT)

The Auxiliary Law Enforcement Response Team (ALERT) is a citizen disaster preparedness program designed. The ALERT program is for volunteers 16 years of age or older, who live, work, or attend high school in San Francisco.

Graduates of the San Francisco Police Activities League (P.A.L) Law Enforcement Cadet Academy are also eligible to join.

ALERT volunteers will no longer need to complete the Fire Department's Neighborhood Emergency Response Team (NERT) (www.sfgov.org/sfnert) training and then graduate into two 8 hour Police Department course specifically designed for ALERT team members.

ALERT members will work closely with full-time and/or Reserve Police Officers in the event they are deployed after a disaster. The Basic ALERT volunteer will have no law enforcement powers other than those available to all citizens.

SFPD ALERT Training (New Members)

The next SFPD ALERT training class has been scheduled for: TBD

*Class date indicated are only for new members

IMPORTANT- All participants must complete the background interview process in order to be eligible to attend the ALERT training class.

Eligible ALERT participants may register fora training class by contacting the ALERT Program Coordinator, marina.chacon@sfgov.org, or by telephone at 415-401-4615.

SFPD ALERT Practice/Training Drill

All active/trained ALERT members are asked to join us for our next training drill, via scheduled for on TBD

For more information on the San Francisco Police Department ALERT Program, email us at sfpdalert@sfgov.org, or call Lt. Marina Chacon (SFPD Ret.), SFPD ALERT Program Coordinator, at (415) 401-4615.

For additional information on the web please refer to:
https://sfgov.org/policecommission/alert

Tech Section:

European Southern Observatory

Press Release

New ‘exomoon’ detection challenges cosmic labels

Date: 22 July 2026

https://www.eso.org/public/news/eso2610/

Artist’s impression of CD-35 2722, a system with a moon-like object (Credit: ESO/M. Kornmesser)

Observations made with the European Southern Observatory’s Very Large Telescope (ESO’s VLT) have revealed evidence for a moon-like object in the CD-35 2722 system. Unlike moons in our Solar System, the newly found object does not orbit a planet, raising questions about what to name it. Instead, it circles a brown dwarf, an object larger than a planet, that orbits the CD-35 2722 star. If confirmed, this could be the first ‘moon’ discovered outside our Solar System.

Kevin Hoy, an ESO student in Chile and lead author of the study published today in *Nature*, describes the system he spent months analysing as “*super weird*” compared to our own. The biggest and most massive object in this young system is the star CD-35 2722, which has about half the mass of the Sun. The star is being orbited by a brown

dwarf, an object too massive to be a planet but too small to be a star. The newly discovered object orbits this brown dwarf.

"*This system is somewhat hard to define using Solar-System-based words like 'planet' and 'moon'*," states Hoy, who is also affiliated with the Universidad Diego Portales and the Millennium Nucleus of Young Exoplanets and their Moons (YEMS) in Chile. The new object, which the team call an exosatellite, is at least as massive as Jupiter while the brown dwarf has more than 30 times the mass of Jupiter. "*The exosatellite is clearly massive enough to be a planet, but it does not orbit a star, though it orbits an object that orbits a star,"* says Hoy. *"Being the third wheel in this system makes us want to call it a moon, even if it is nothing like the small, rocky moons we have in our system*."

This exosatellite or 'exomoon', a natural satellite outside our Solar System [1], is difficult to label, given the differences in this system compared to our own. Alice Zurlo, YEMS Director and collaborator on the study explains: "*The satellite we report is a giant gaseous body orbiting a highly massive companion, itself several times the mass of Jupiter*."

"*We have a clear delineation between the planets and the Sun in the Solar System, so defining things like moons is simple. In the CD-35 2722 system, where we are blurring the lines between stars, planets, and moons, the whole thing becomes more complicated to describe*," adds Zurlo, who is also an astrophysicist at Universidad Diego Portales.

Regardless of what to call this object, astronomers have been trying to detect satellites outside our Solar System for years, but none has yet been confidently detected. Therefore, despite the over 6000 exoplanets discovered to date, only a few exomoon candidates have been spotted and the evidence to support them is limited. Just a few months ago, a team led by Quentin Kral reported on observations with ESO's Very Large Telescope Interferometer in the HD 206893 star system, which revealed hints of a satellite, but no firm detection.

For the CD-35 2722 observations, Hoy, Zurlo and their team used the CRIRES+ instrument on ESO's VLT, employing the method that was used to find the first exoplanet around a Sun-like star. They applied this radial velocity method to detect small wobbles on the brown dwarf caused by the object orbiting it, finding what the team believe to be strong evidence for this 'moon'. "*As exotic as it is, this system is truly unique and represents a breakthrough: the first plausible detection of an exosatellite*," says Zurlo.

Beyond the excitement of discovering new types of objects, detecting satellites in other planetary systems can help us understand how diverse their formation and evolution might be. With its 39-metre mirror and advanced instrumentation, ESO's upcoming Extremely Large Telescope (ELT) will allow astronomers to detect smaller exomoons. Discoveries with the ELT will make us further reconsider how we label planetary objects from systems different from our own.

Notes

[1] A satellite is an object that orbits another object and it can be natural (like our own moon) or artificial (like a spacecraft). An exosatellite is a satellite outside our Solar System. An exomoon is generally considered to be a natural satellite orbiting a planet or another object outside the Solar System, though there is no officially accepted definition for exomoon.

More information

This research was presented in a paper titled “Planetary-Mass Exosatellite Detected Around a Star’s Substellar Companion” to appear in *Nature* (doi:10.1038/s41586-026-10751-w).

The team is composed of K. Hoy (Instituto de Estudios Astrofísicos, Facultad de Ingeniería y Ciencias, Universidad Diego Portales, Chile [Diego Portales]; European Southern Observatory, Chile [ESO Chile]; Millennium Nucleus on Young Exoplanets and their Moons, Chile [YEMS]), A. Zurlo (Diego Portales; YEMS), P. A. Peña R. (Diego Portales; Centro de Astrofísica y Tecnologías Afines, Chile [CATA]), J. Köhler (TLS Tautenburg, Germany), S. Desidera (INAF Osservatorio Astronomico di Padova, Italy [INAF Padova]), R. Gratton (INAF Padova), C. Lazzoni (INAF Padova; YEMS), S. Petrus (NASA Goddard Space Flight Center, USA; YEMS), F. Rodler (ESO Chile), J. Smoker (ESO Chile), V. D’Orazi (Dipartimento di Fisica, Università degli Studi di Roma Tor Vergata, Italy; INAF Osservatorio Astronomico di Roma, Italy), I. Carleo (INAF Padova), I. Giovannini (Dipartimento di Fisica e Astronomia, Università degli Studi di Padova, Italy; Diego Portales; INAF Padova; YEMS).

The European Southern Observatory (ESO) enables scientists worldwide to discover the secrets of the Universe for the benefit of all. We design, build and operate world-class observatories on the ground — which astronomers use to tackle exciting questions and spread the fascination of astronomy — and promote international collaboration for astronomy. Established as an intergovernmental organisation in 1962, today ESO is supported by 16 Member States (Austria, Belgium, Czechia, Denmark, France, Finland, Germany, Ireland, Italy, the Netherlands, Poland, Portugal, Spain, Sweden, Switzerland and the United Kingdom), along with the host state of Chile and with Australia as a Strategic Partner. ESO’s headquarters and its visitor centre and planetarium, the ESO Supernova, are located close to Munich in Germany, while the Chilean Atacama Desert, a marvellous place with unique conditions to observe the sky, hosts our telescopes. ESO operates three observing sites: La Silla, Paranal and Chajnantor. At Paranal, ESO operates the Very Large Telescope and its Very Large Telescope Interferometer, as well as survey telescopes such as VISTA. Also at Paranal, ESO will host and operate the south array of the Cherenkov Telescope Array Observatory, the world’s largest and most sensitive gamma-ray observatory. Together with international partners, ESO operates ALMA on Chajnantor, a facility that observes the skies in the millimetre and submillimetre range. At Cerro Armazones, near Paranal,

we are building “the world’s biggest eye on the sky” — ESO’s Extremely Large Telescope. From our offices in Santiago, Chile we support our operations in the country and engage with Chilean partners and society.

Links

- Research paper
- Photos of the VLT
- Find out more about ESO's Extremely Large Telescope on our dedicated website and press kit
- For journalists: subscribe to receive our releases under embargo in your language
- For scientists: got a story? Pitch your research

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Tech Session in Sunnyvale

Saturday Sept 12th. (includes free lunch)

By Ed Fong - *WB6IQN*

Topic: Milestones in the Walkie Talkie

Time: Saturday September 12th – 12 noon – 3PM

Place: 1163 Quince Ave. Sunnyvale, 408-245-8210

Menu – Burgers, hotdogs, salad, drinks, ice cream for dessert

Cost: FREE

Raffle Tickets: $5 each or 3 for $10

Grand Prize - uSDX+ All Mode HF portable transceiver or Lenovo i5 laptop or QB25 quad band 25 watt transceiver or Nano 1.5 GHz VNA.

RSVP: edison_fong@hotmail.com

Directions:

If you need precise directions from where you are coming from, go to www.googlemaps.com. They seem to give the best directions or give me (Ed Fong) a call on the phone.

The topic will be " Milestones of the Walkie Talkie". There will be working historical units at this Technical Session Event.

SCR 536 The first widely use of the walkie talkie was in WWII. This would be the well known SCR536 (also known as the BC-611) that we all see in WWII movies. This unit was designed at Gavin Manufacturing (later know as a Motorola).

The SCR-536 is often considered the first modern hand-held, self-contained "handie talkie" transceiver. It was developed in 1940 by a team led by Don Mitchell, chief engineer for Galvin Manufacturing (now Motorola) and was the first true hand-held unit to see widespread use.

It was carried among the first waves to hit Omaha Beach at Normandy in June 1944 (and in Italy, Sicily and North Africa before that).

Every rifle company of the U.S. 29th Infantry division had six; one for each of the three rifle platoons, two for the weapons platoon, and one for the company commander.

The Germans were deeply impressed by the SCR-536 after capturing several units in Sicily. By war's end, 130,000 units had been manufactured by Galvin (Motorola). They were also produced by other firms.

The SCR-536 weighed 5 pounds with batteries. The unit operated in AM voice mode between 3.5 and 6.0 MHz frequency range on any one of 50 channels. Plug in crystals and coils were used to control the frequency of the receiver and transmitter. The antenna was a 40 inch telescoping rod that slid into the case. The SCR-536 had an RF output power of 360 milliwatts.

Hold one in your hands at the meeting. See what soldiers experienced landing on Omaha Beach.

PRC -6 Much more sophisticated the SCR536 which used AM was the PRC-6 used in Korean War and Vietnam –

First FM walkie talkie developed at Raytheon. Signal to noise was greatly improved.

47-55MHz. 13 vacuum tubes 250 mW output.

Still in use US forces until the 1980's.

AN/URC64 - All solid state and ran on 13.5 volt battery. Experience what a downed pilot had to work with. Hold a pair of these in your hands and talk through them. Send Morse code through them.

These were used by A4 pilots and other Search and Rescue (SAR) operations in the 1960's through the 1980's.

Transmit power 200mw with a range of 100 miles from a P3 SAR aircraft. Transmits an ear piercing emergency beacon.

I have these on a training frequency so the USAF will not be knocking on our door. Used in the movie "BAT21" 1988 starring Gene Hackman and Danny Glover playing Lt. Col. Ceal Hambleton.

GE pocket mate used by the Secret Service - Ever wonder what radios those secret service folks (in the white shirts and suits) used wearing the earpieces and mic lapel? It was the GE Pocketmate - an ultra slim walkie talkie about ½ inch thick. Jack Lord used it several times in the original Hawaii 5-0.

The Secret Service chose the GE Pocketmate over the HT220 because it was half as thick. There was an attempt by Motorola to compete with the HT220 by modifying it to an HT100 with no success. In the original FBI show (1965-1974) staring Efrem Zimalis Jr. as Inspector Lewis Erskine was seen using the GE Pocketmate.

Watergate Connection: The radio achieved a surprising degree of pop-culture and historical infamy when it was found in the possession of the Watergate burglars in 1972. There were only a few thousand of these made. Put one in your hands at the meeting.

Motorola HT100 was Motorola's answer to the GE Pocketmate. It was basically an HT220 repackaged with a limited battery and 200mW.

It was never adopted by any government agency. It was just too thick to hide under a suit jacket. Nice try Moto.

The Motorola Slimline HT220 (on the right) used throughout the 1970's and 1980's was the standard used by Steve McGarid in the original Hawaii 5-0 and Angie Dickerson in Police Woman.

This radio revolutionized the concept that every police officer can have a walkie talkie and communicate away from their vehicle.

On the left is the World's first synthesized handie talkie – Tempo S-1.

See all these radios at the September meeting and hear the stories behind them. If you have a radio that has an interesting history, bring by and share your thoughts.