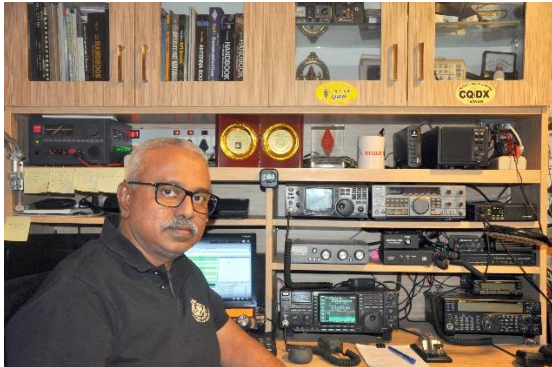


IOTA QSL cards – from VU2TS collection

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President's message



Home, but Never Alone

World Amateur Radio Day is on 18 April 2021. It was on this day in the year 1925 that the International Amateur Radio Union was formed in Paris.

This year, IARU has chosen “**Amateur Radio: Home but Never Alone**” as the theme for the World Amateur Radio Day. Due to COVID-19, many amateur radio events and gatherings got cancelled, however, amateur radio kept us connected.

From the 25 countries that formed the IARU in 1925, the IARU has grown to include over 160 member-societies in three regions. IARU Region-1 includes Europe, Africa, the Middle East, and Northern Asia. Region-2 covers the Americas, and Region-3 comprising Australia, New Zealand, the Pacific island nations, and most of Asia.

The International Telecommunication Union (ITU) has recognized the IARU as a body representing the interests of Amateur Radio. Today, Amateur Radio is more popular than ever, with more than three million licensed operators! Amateur Radio still makes use of the oldest form of digital communications: Morse Code or CW. In addition, the Amateur Service utilizes a number of digital modes for weak signal HF and VHF/UHF propagation including many which have been developed by radio amateurs, such as Nobel Prize winner, Joe Taylor, K1JT.

Over the years, the Amateur Service has been at the forefront of developing new modes of communication and will continue to do so in the future. World Amateur Radio Day is not a contest but rather an opportunity to “talk” about the value of amateur radio to the public and also to our fellow Radio Amateurs.

Here are a few ways we can celebrate this day - Get on the air with your own personal event station involving family and friends; Organize a special “Net” to observe the World Amateur Radio Day and generate interest to talk and discuss about the hobby. We need to recognize very well that, what amateur radio means to one generation may not mean the same thing to a younger generation. But it is our prime responsibility to educate and guide the newer hams about the true values of this great hobby.

73, de Ramesh Kumar VU2LU

From the Editor's desk



The annual **Hilltopping & Field Day** event was a grand success this year with 53 teams participating. It is always nice to witness good participation in the club events; I hope the trend will continue. Results and a few reports received along with photos are included in this issue.

Band conditions on HF has not improved much; the sunspot number has not risen beyond 30 or so, with 32 days without any sunspots during the current year. Strangely, 10 meters showed some activity a few days ago.

Hope you enjoy reading this issue of HRN

73, de Ganesh VU2TS

Ham Radio forms a planet-sized space weather sensor network

Considerable interest exists in developing space weather forecasting technologies that use Earth's ionosphere as a sensor for events in its neighbouring atmospheric layers. The ionosphere occupies a privileged niche in the geospace system, as it is coupled into both the terrestrial weather of the neutral atmosphere below and the space weather of the magnetosphere above.

Although we have a good understanding of ionospheric climate—diurnal and seasonal variations are well known, as are the rhythms of the sunspot cycle—there are new and vital areas of research to be explored. For example, it is known that the ionosphere—and near-Earth space—experiences variability (*e.g., radio signals can fade in and out over periods of seconds, minutes, or hours due to changes in ionospheric electron densities along signal propagation paths*), but samples and studies of this variability has not been carried out adequately on regional and global scales. To fully understand variability on small spatial scales and short timescales, the scientific community will require vastly larger and denser sensing networks that collect data on continental and global scales. With open source instrumentation cheaper and more plentiful than ever before, the time is ripe for amateur scientists to take

distributed measurements of the ionosphere—and the amateur radio community is up for the challenge.

The Ham Radio Science Citizen Investigation (*HamSCI*) is a collective that unites amateur radio operators with the research community in the space and atmospheric sciences. This confederation of scientists, engineers, and hobbyists holds annual workshops during which ham radio operators and space scientists share findings. A new HamSCI effort, the Personal Space Weather Station project, aims to develop a robust and scalable network of amateur stations that will allow amateurs to collect useful data for space science researchers.

The last HamSCI virtual workshop was held between 19–21 March 2021, and it focussed on midlatitude ionospheric measurements. Read the full story at:

<https://eos.org/features/ham-radio-forms-a-planet-sized-space-weather-sensor-network>

Eos is a source for news and perspectives about Earth and space science. Readers can find coverage of new research, analyses of science policy, and scientist-authored dives into their ongoing research and issues in the science community. -Ed

VHF HILL TOPPING & NATIONAL FIELD DAY 2021

Takes place during last weekend of February every year – Saturday 0330Z to Sunday 1230Z

This year's event was very successful with **53 teams** taking part. The results were announced a few hours ago:

Category A All HF bands

First place: Team VU2IIH - 225 points
Second place: Team VU2SBJ - 198 points
Third place: Team VU2UPX- 102 points

Category B 6 met, 2 met, and 70 cm bands

First place Team VU2ASH - 223 points
Second place Team VU2UPQ – 198 points
Third place Team VU2TFG - 191 points

Category C HF, VHF, UHF, 6 met

First place Team VU2PYN – 3,048 points
Second place Team VU2TIV - 2,355 points
Third place Team VU2GRM - 1,370 points

Congratulations to the winners! Ed/

PUNE HAMs AND AMATEUR RADIO CLUB - VU2PHQ

ARSI HILLTOPPING & NATIONAL FIELD DAY 2021



28th Feb 2021

PUNE, Maharashtra

18 members of the Pune Hams and Amateur Radio Club **VU2PHQ** participated in the ARSI HILLTOPPING & NATIONAL FIELD DAY event 2021. They independently set up and operated 18 field stations from 8 different locations. Of these 16 stations were located at 7 Hilltops and ridges located in and around Pune and operated VHF, UHF & 6M stations.

Two other stations were setup and operated by members of the club who were in their hometown and operated HF VHF and UHF under the banner of the club. One station was in **Satara District** of Maharashtra & the other station was close to **Jabalpur** in **Madhya Pradesh**.

The stations located in Pune met for lunch after the event to share their experiences.

This is the second field day in two months that they were participating. They all unanimously agreed that they enjoy operating the field stations and felt that operating a field station has a lot of new learning to offer.

VU2PHQ – ON FIELD DAY

16 members of the **PUNE HAMS AND AMATEUR RADIO CLUB-VU2PHQ** participated in the club's field day event on January 17th at the **temple town of Jejuri - 60kms south east of Pune city**.

Eight QRP stations were set up and different types of antennas were tried out. There were inverted Vee, the end fed long wire, end fed dipole, and the vertical antenna. Of these five stations were using the **uBitex** Radio. By the time the stations got setup it was noon. At that time of the day the band conditions didn't look favourable, but by late afternoon they were able to work a few VU & YC with their just 5 watts of power.



VU30OL
Vipul Ashtekar



VU30FN
ROHIT
CHAUDHARI,
VU30FU
NEERAJ
DHOKE,
KUNAKI ARAI
(AKI -
JH0FYK)
VU3KXA

One of our club members Devendra Vishwakarma VU2DVI who couldn't participate in the field day as he was yet in his hometown near Jabalpur in MP, set up a field station and made contact with those participating in the field day at Jejuri.



VU2TGG - Ajay tuning in his radio while
VU3HUW- MANGESH, VU30OL - Vipul, VU2ASH - Ashok
& JH0FYK - Aki look on.



VU2TFG -
ANIL
SHARMA
in qso

We were able to study the performance of various antennae that were used and the importance of antenna orientation. It was an interesting day full of learning and fun.

SCIENCE DAY 2021

Pune Hams **VU2RCP** celebrated "**Science Day**" by participating in ARSI Hill Topping & National Field Day scheduled on 27/28 February 2021. 15 Amateur radio operators & SWLs from Pune exchanged radio contacts from Pune's highest spot ***Vetal Tekdi*** grid locator MK68VM as a part of ARSI Hill Topping and the Science day activity being a ***Star Party*** - sky watching program on the night of 27th February.



Vetal Hill is 2600 feet above mean sea level and it is the highest point in the rocky region of Pune. The Hams and SWLs conducted a few experiments with all kinds of radio communication modes using G5RV and End Fed Antennas for HF and Diamond X30 for VHF & UHF. The contest started at 9:00 a.m. on Saturday, February 27, 2021, and continued uninterrupted for 33 hours, ending on Sunday evening by 6:00PM. There was good participation this year; there were 48 such teams operating from different regions of the country.

The importance of Ham Radio communication in case of emergency is underlined. Hams always rehearse it on such occasions and keeps their skills intact.



In an informal meeting on Saturday 27th February around 11:00 AM Umesh Zhirpe – the noted mountaineer of Giripremi, Everest Winner, Shri Ekbote of the Pune Fire Brigade, and Sujata Kodag of NGO ELF Pune - all shared their experiences on the importance of Radio

Communication in their fields. Every one confirmed the importance of Ham Radio and this movement to be taken forward.

JVP (Jyotirvidya Parisanstha) & Pune Hams VU2RCP organised a Star Party and as a Part of Science Day celebrations on ARAI hills. Being a full moon day more than 50 participants including children watched the craters of the Moon through the VU3OUM's 6" telescope (Newtonian Star Tracker) and gain some interesting insights about the night sky in the Star Party. Radio Astronomy and Ham Radio are complimentary hobbies. Thanks to JVP Team for excellent support.



Pune Hams made a good score on HF as 40 Meter band conditions were favourable. During night the FT8 mode using the ICOM IC7300 made a lot of DX contacts. The most important gain of this exercise was we could train two SWLs viz. Mayuresh and Aniruddha who are passionate about Ham Radio. OM Ajit Karnik VU2AMK's comeback after licence renewal also strengthened Pune Hams.

OM R Mohan VU2MOA from Chennai visited us during the contest with his daughter and grandson and enjoyed eyeball QSO and the fresh weather on the hilltop. Pune Hams appreciated OM Mohan's visit

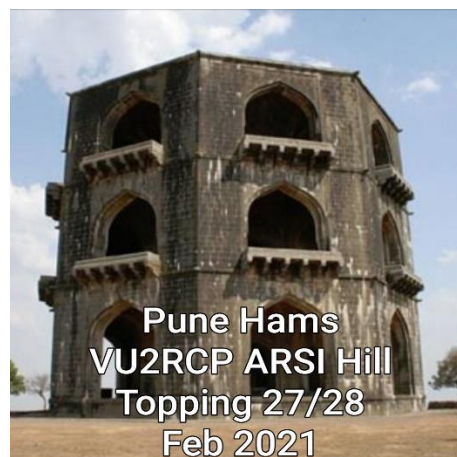
We packed up around 5:45 PM on Sunday and went home with pleasant memories

Report from: Vilas Rabde VU2VPR

Pune Hams VU2RCP Field day at Devgad & Ahmednagar

8th and 9th January 2021. The hosts for the Pune Hams VU2RCP Field Day were "**Shirdi Amateur Radio club**" & **Versatile Ham Radio club** Ahmednagar. On 8th Jan Shirdi Hams gave welcome by arranging Hurda Party. The following Hams from Handi Nimgaon, Rahuri & Newasa participated. 1) Dr.Karan Ghule-VU3HGN, 2) Parshuram Kute VU2GPE, 3) Jayramj Thakkar-VU3YBR, 4) Vasant Kurhe- VU3YWW, 5) Appa. Dhus -VU3HGE 6) Shivaji Ghadge VU3HGM, 7) Vaishali Kute - VU3HGD, 8) Tijore Madam - VU3, 9) Chandu Patel- VU3YWX

SWLs participated were, 1) Arun Kachre 2) Nilesh Sarode - both waiting for callsign., 3) Shubham Kute and 4) Suresh Vable – both asoc.exam- candidates- 2 Jan -2021.



All tried to hit Pune VHF as well as UHF Repeaters from *Chandbibi Mahal Hills*. (Salabat Khan's Tomb) which is 3080 feet MSL. Pune Hams could trigger UHF Repeater VU2DYQ from Chandbibi Mahal Hill (Salabat Khan's Tomb) The aerial distance is 150Kms. The hills MSL is 3080 feet.



Ahmednagar & Pune Hams



Shirdi Ham Club members

OM Gajanan VU3YWB had already triggered Pune VHF Repeater VU2ETD located at Ajeenkya DY Patil University near Airport using his 14 Elements Yagi from ground level.

Ahmednagar, Shirdi & Pune Hams have planned to participate in ARSI's Hill Topping & Field Day event scheduled on 27/28 Feb 2021 on same hill. The focus will be on E & TC Engg. students with an aim to popularise Ham Radio Hobby among youngsters. A star-party is also planned on 27th Feb night by VU2DSI and local Astronomy enthusiasts.

-O-O-O-O-O-O-

Pune Hams VU2RCP along with Marati Vigyan Parishad TTA, Muktangan Exploratory Science Center, Padmini Electronics & IETE Pune, jointly celebrated **World Radio Day** on Saturday 13th February 2021 at 409-410A, Shivaji Nagar, Bharatiya Vidya Bhavan Chowk, Off, Senapati Bapat Rd, opp. J W. Marriott Hotel, Pune, Maharashtra 411016. The evening's activity included the following speakers:

Design & Development of SDR Radio by Dr Vishwas Udpikar, Sicom Pune with a demonstration

“What is DRM?” - DRM broadcast from AIR Pune - Mrs Chitrarekha Kulkarni, Asst. Director AIR Pune with live Demo*

“Radio Listening is my Hobby” by VU3UEL OM Dilip Bapat from Alibag with a demonstration.

There was also a ***Vintage Radio*** Exhibition by OM Shripad Kulkarni VU3YBU open to public from 10:30 AM to 7:00 PM.

-O-O-O-O-O-O-

Pune Hams VU2RCP organized their usual **Sunday TechTalk** on Sunday 7th March, ending with a grand Eyeball QSO and dinner with Mr. Siddharth Bhange, the young MD of M/s Cyronics Pune who gave us a very interesting talk on **SDR Applications in 5G & Electronic Warfare**.

https://youtu.be/ezYj5lFt3ZU?fbclid=IwAR35yh1qXQ-yCdLJ29sIOc9vakWg5MXLOx3VeqHhlpSNdcx5NMN-Oba_KTc

-O-O-O-O-O-O-O-

PALAKKAD, KERALA

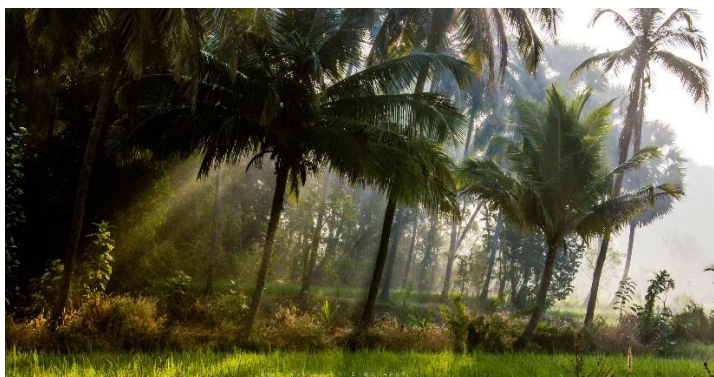
The Palakkad Amateur Radio Technical Society (PARTS) received a special event call sign **AU2PHC** to commemorate their founding day, and to mark the occasion, a HF SSB 40 meters contest was organized. The contest was between 20:00 local time on 07th February and 20:00 local time on 08th February.

The first prize was awarded to XYL Bharathi VU2RBI

The second prize went to OM T S Prasad VU3YFD

The third prize was taken by OM Sanil VU3SIO

Congratulations to the winners.



BENGALURU, KARNATAKA

On February 21, OM Sreevathsa VU3SPD, accompanied by VU3NXI and VU3MDO set up the FIELD DAY station on Gopinatha Betta -MK83uj – located in the vicinity of Nandi Hills.



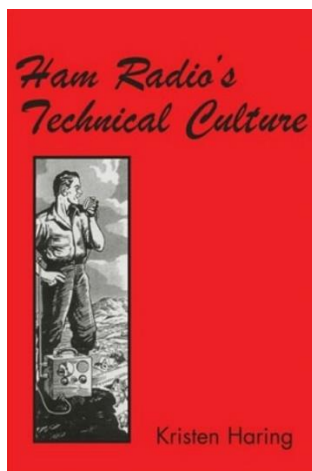
The station was in a tent, solar powered battery power, self-cooked and had visitors from ADA - scientist engineer, Medical Student and her 12yr old brother interested in Ham Radio, Kids and other visitors, my Colleagues visiting our event, where Amateur radio was explained to them along with demo.

Ham Culture in Movies and Songs

By Daniel Romila VE7LCG

After ham radio is extinct, researchers will still be able to find out about radio amateurs through whatever there will be left as a cultural thing. I intentionally used the term “Ham Culture”, which I could not find used anywhere up to now. Maybe my legacy in the history of adult and higher education will not be through my Ph.D. studies in Education, not through the research papers I published, but only through this article, published in a ham radio magazine.

I found the term “Ham Radio’s Technical Culture” in many places, which is a more limiting term, referring mostly to the technical aspect. In 2006 Kristen Haring wrote a book with this name, which can be viewed and bought at: <https://mitpress.mit.edu/books/ham-radios-technical-culture>



By “ham culture” I want to address not only the technological advances that were made based on ham radio experiments, but also the community and general social aspects involving the hobby, even including the relations and disputes that our hobby generates with neighbors, spouses and relatives. While for us, certified ham radio people, there is a clear distinction between classic CB (around 27 MHz) and ham radio, I do not think that the general public knows any difference between the two of them, neither now, nor when whatever will be left of ham radio as community emergency services and a new kind of citizen band(s), spread on several bands and most probably also spread on several satellites.

While I grew up directly into ham radio because in the country where I am from CB was illegal, CB has the clear advantage of instant gratification; one can see it used by someone else, decide to buy it and get active on it. A CB radio can be bought without any license, without any exam, and put into operation right away. It is simple to operate.



A ham radio transceiver requires license, that means exams preparation and exams. One has to be technologically savvy enough to operate it. It can even be scary for a beginner.



There is also a huge difference in price. So I am launching the idea that “ham culture” will be remembered as being in fact the CB culture, or at least to incorporate it, and a big part of the ham culture to actually be about CB radios.

While there are many movies in which ham radio appears and ham radio gets some action, the only movie that I know of that it is centrally based on ham radio communication is “Frequency”, a science fiction thriller written by Toby Emmerich and directed by Gregory Hoblit, released on April 28, 2000.



The science-fiction movie is about a father and son speaking through ham radio equipment by somehow breaking a 30 year difference in time. The son is in 1999, and talks to his father who is already dead, living in 1969.

CB radio was generally presented in movies as the communication tool between truck drivers. The truck driver was a kind of favorite hero in the 1970s – 1980s but faded away after that. In 1978 the movie called “Convoy” was released. It is a movie completely based on a single country song, also called “Convoy”, written by C. W. McCall, in 1975.



Above is C. W. McCall, from his videoclip that can be seen at: <https://www.youtube.com/watch?v=FlxUp4RY5Ps>

In the movie, (as in the song) - a truck driver with the call name "Rubber Duck" gets in trouble with a dirty cop. Through the CB truck drivers communicate and come across Arizona and New Mexico in the help of Rubber Duck.



The trailer of this movie can be seen at: <https://www.youtube.com/watch?v=uDUXvR79wS4>

The song was also used in GTA V (Grand Theft Auto 5 video game):

<https://www.youtube.com/watch?v=Dnt5zeiW1Rs>



One country song, "Convoy", made so much publicity for CB, it remains in history. It is difficult for ham radio to compete with such glory.

While it is a big temptation to write about ham radio communities and social aspects, and eventually to build on the experiential learning model of David A. Kolb, I want this article to be only about movies, videos and songs that will give ham culture a place in history. Once it is digital, it is there to stay.

Country music was also used to promote ham radio. The song "Join Us On the Airwaves", by Andrew Huddleston (from The Ham Band) can be seen at: <https://www.youtube.com/watch?v=52NGdr1QE7k>



The singer wears a kind of 1920 – 1940 jazz/Charleston outfit, while singing country music. Initially I had doubts about mentioning this song because of some unclear words in the lyrics, but it really seems to be a good-hearted song. I quote:

“You’re looking for adventure?

Well, you could become a ham.

Come and join us on the airwaves

Surf the skies and find new friends

Let the world unfold before you

You’ll be the one who sets the trends.”

Some songs go more for a jazzy style than the country style. The song “Ham Radio Hoarder” describes a YL who has relations with men just to steal their ham radio equipment from them:

<https://www.youtube.com/watch?v=OidowSpbxJo>



Andrea Vadrucchi (Vadrum) modified the song "Morse Code Music" made by VE1VAC into a drum session:

<https://www.youtube.com/watch?v=6XHwygN9CKM&list=PLfZnJfwRdrxyxPIDc7Xvbp2fWL5GIU13q&index=6>



If this is not “metal” enough for you, there is a *metal* song at:

<https://www.youtube.com/watch?v=qaHgdFH3jgs>

If none of the above resonated with you, maybe a blues? "Ham Radio Blues" is a track from the album "When The Wolves Go Blind".

<https://www.youtube.com/watch?v=nzKpoX1QfZw&list=PLfZnJfwRdrxyxPIDc7Xvbp2fWL5GU13q&index=13>



Some people use ham radio songs even when they get married. I mention it here because it is also different than all the above songs, being a ham radio rap.

<https://www.youtube.com/watch?v=01g3nXeSsPk>



But there is nothing new under the sun. Ham radio songs date back to at least 1960. One souvenir of May 7th, 1960, the Dayton Hamvention, is Joyce Hahn and the VE2QS orchestra recording of “CQ Serenade”: <https://www.youtube.com/watch?v=lOqe0oouN2s>

It seems the song covers a previous French Quebec version.

Somehow, finding all those ham radio song videos on the Internet makes me feel safe that ham culture will not be remembered only as CB radio. I am sure there are many others. The zombie mode (FT8) and many other gizmos do not encourage me much about future generations remembering that ham radio was something other than CB.

By Daniel Romila VE7LCG



The **Amateur Radio League of Finland (SRAL)** is celebrating its 100th Anniversary.

Finland is a small, modern Republic of 5 million inhabitants located on the very northern frontier of Europe. Finns live life between the East and the West, belonging to the alliance of the European Union. SRAL's strength lies in having one of the highest membership percentages among the IARU R1 membership societies. So, this is all of us OHs welcoming you to our centennial year activity.

EARN THE HIGHEST RECOGNITION FROM YOUR OH FRIENDS -- Just contact 100 (one hundred) of your OH friends during 2021 and 10 (ten) specially featured Finnish stations to earn the OH Northern Light 100-year certificate (OH-NL-100) and the featured story, explaining the magic of the OH-land and the Northern Lights:

Your 100 contact should include 50 OH stations and 50 OF stations, a total of 100.

A special OF prefix will be launched to all OH stations on September 15th, 2021. Your maximum point value can be 100. The number of your OF/OH contacts.

TEN SPECIAL ACTIVITY MULTIPLIERS -- SRAL and its members are active in a wide range of Amateur Radio activities and each of the ten multipliers represent some of those activities. The multiplying stations are:

OH1ØØSRAL, OH2A, OHØW, OJØC, OF2HQ, OH2YOTA, OG2B, OH6SRAL, OI3AX and OF9X.

Multiplying your QSO points (maximum 100) by your multiplier value (max 10) will give you your score - maximum of 1000 points.

All who score 1000 points and the top-ten continental highest scorers will receive their OH-NL-100 certificate signed by **Santa Claus** himself. A special lottery will feature additional special prizes that will be announced later.

Your log extract should be sent to the **Santa Claus offices at (of9x@sral.fi)** during January 2022. The same address will answer all questions relating to this centennial activity.

WHAT IS THE STORY ON THESE TEN MULTIPLIERS?

OH1ØØSRAL: This is the official SRAL centennial jubilee station which is circulating all year throughout Finland and is activated by SRAL's member societies (120) and special activity groups.

OH2A: This is the SRAL HQ station in our capital, Helsinki. It is rarely active internationally but to honour this special year you can catch it occasionally. Surely A is first in the alphabets.

OF2HQ: With the country-wide unified SRAL-team it is expected that all of Finland will be active in IARU radio sport, July 10-11th, one way or another. Mid-summer is the time when all OHs smile. OH boy!

OHØW: Aland Islands is Finland's share in the DXCC program. But also, the most beautiful archipelago to visit and enjoy. It is home to three HF superstations and the historical battlefield of all OH contesters for once winning the world -- CQWW at OHØW 1982.

OJØC: Market Reef is a rare one with adventure and challenges on right on its doorstep. So many from far and near have experienced DXotica over the barren rock in the midst of stormy seas. It is a dream for landlubbers not to see anything in the horizon.

OH2YOTA: The Finnish youth are the movers and shakers in the YOTA movement and hosted one of the early ones in Finland. At the core of SRAL activities the theme in Finland is that only youth can communicate with youth. Also, only youth would know what makes them tick!!

OG2B: The IARU/NCDXF beacon network has been supported by the SRAL and its dedicated members for almost 40 years. While OH2B is busy at work, the alternative OG2B will be its substitute during this centennial jubilee. Surely you have used the network: www.ncdxf.org.beacon/

OI3AX: Amateur Radio activity in the Finnish Signal Corps (OI prefix) have a brilliant history of cooperation with SRAL. Many well-known OHs have caught the bug while doing their service to their country. OI3AX will represent the country-wide network of 35 OI-locations.

OH6SRAL: Every Saturday at 3 PM SRAL transmits its radio news to its entire membership. OH6 is in the middle of the country and has a long history of such transmissions. The chief, Heikki, OH6ZS has done those transmissions for more than 40 years and his dedication to this duty continues.

OF9X: Old-Father-Nine-Xmas, has excited the little radio operators and their families for many years from the land of Christmas. Once Santa Claus was pushed to the North Pole but these Santa transmissions from Finland have finally proved that Finland is the same as the North Pole.

Thank You, you are most welcome to join the party as you have now made yourself familiar with Finland and SRAL, now celebrating its centennial. Just jump onto Santa's sleigh and go for 1000 points...and greet your fellow OHs along the way. Good luck and see you on our way to Cycle 25!

73 - Martti, OH2BH

Via - OPDX

HAM RADIO SIGNALS FROM MARS

Around the world, ham radio operators are doing something once reserved for giant Deep Space Networks. "We're monitoring spacecraft around Mars," says Scott Tilley of Roberts Creek, British Columbia, who listened to China's [Tianwen-1](#) probe go into orbit on **Feb. 10th**. The signal, which Tilley picked up in his own back yard, was "loud and audible." Click to listen:

The signal from Tianwen-1 is dominated by a strong [X-band](#) carrier wave with weaker side bands containing the spacecraft's state vector (position and velocity). Finding this narrow spike of information among all the possible frequencies of deep space communication was no easy task.

"It was a treasure hunt," Tilley says. "Normally a mission like this would have its frequency published by the ITU (International Telecommunications Union). China did make a posting, but it was too vague for precise tuning. After Tianwen-1 was launched, observers scanned through 50MHz of spectrum and found the signal. Amateurs have tracked the mission ever since with great accuracy thanks to the decoded state vector from the probe itself."

So far, Tilley has picked up signals from China's Tianwen-1 spacecraft, NASA's [Mars Reconnaissance Orbiter](#), and the United Arab Emirates' [Hope probe](#)--all orbiting Mars approximately 200 million kilometers away. How is such extreme DX'ing possible?



It helps to have a big antenna," says Tilley, who uses a 60 cm dish, pictured above. "But the real key," he says, "is the advent of Software Defined Radios (SDRs), which have become the norm for hams in the past decade or so."

In a Software Defined Radio, computers digitally perform the signal mixing and amplification functions of circuits that used to be analog. SDRs are cheap, sensitive, and they give hams the kind of exquisite control over frequency required to tune into distant spacecraft.

"Amateurs began listening to deep space probes in the late 1990s and early 2000s," says Tilley. "This sparked an awareness that it was possible. The combination of improving technology and growing awareness has resulted in more and more interplanetary detections."

Source: [Spaceweather.com](#)

*I answer questions on **Quora**, and the other day a question popped up in my inbox “Will **AMATEUR (HAM) RADIO** be used by settlers on Mars to communicate with Earth, or others on Mars?” – Here’s the link to my answer. [LINK](#) – Ed/*

Sunday, April 18, is World Amateur Radio Day (**WARD**). This year marks the 96th anniversary of the International Amateur Radio Union (**IARU**), founded at the 1925 International Radiotelegraph Conference in Paris.

The RSGB has announced its new **Radio Surfer Award** aimed at young people but open to everyone regardless of age, there's no need to be a RSGB member

<https://rsgb.org/main/operating/amateur-radio-awards/youth-award/radio-surfer-award/>

On March 22, 14 satellites carrying Amateur Radio payloads coordinated by the IARU Satellite Frequency Coordination Panel were deployed from a Soyuz-2.1A

<http://amsat.org.uk/iaru/>



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