The Official Newsletter of the

PAPAKURA RADIO CLUB INC.

August 2024

Spring has Sprung – Its time to think portable

CONTENTS ...

This Month's Meeting:

This month's general meeting will be normal business, followed by Chris Jackson ZL2TPO. He will talk about SSTL (Surrey Satellite Technology) where he worked for 26 years. He is currently with the Auckland Space Institute (Auckland University) and is involved with the Methane SAT project.
Hope to see you there.

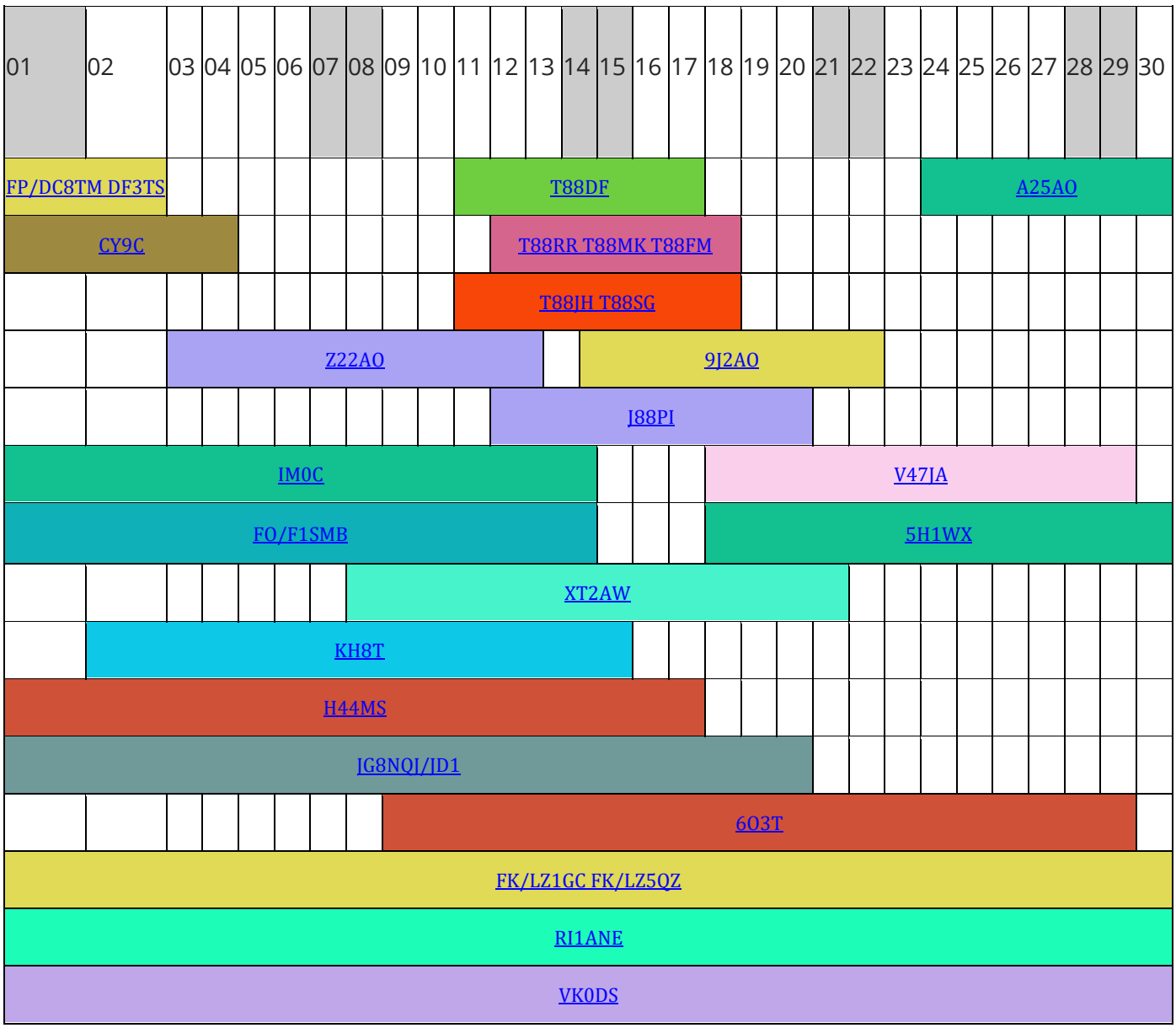
If transport is a problem, let the committee members know, and we may be able to assist with arranging a ride for you.

Alternatively ask zl1nux@outlook.com for the teams link, and you can join us from home.

August Dates:

Wednesday 7th	**General Meeting – Space Technology**
Wednesday 14th	**Activity Night**
Wednesday 21st	**Committee Meeting**
Wednesday 28th	**Project Night**

DX CALENDAR AUGUST 2024



Click any link above for details on the expedition

1960 ——————————————————————————→ *2024*

Featured DX: FK/LZ1GC FK/LZ5QZ New Caledonia Island

FK/LZ1GC and FK/LZ5QZ will be active from New Caledonia Island, IOTA OC - 032, 10 - 19 March 2024.

They will operate on 160 - 10m, CW, SSB, RTTY, FT8, FT4.

In the Pacific Ocean lies one of the most famous and picturesque French colonies, New Caledonia, spread over one large and several small islands. The possession is separated by small straits from the islands of the archipelago of Fiji, Vanuatu and Australia. The capital of the colonial province is the city of Noumea.

The geographical location of the islands determines their tropical climate with characteristic trade winds. The year is divided into three seasons:

Summer - starts in November and ends in March;
winter - lasts from April to October;
the rainy season is December through March.
The best time to travel to these places is during the high season, which lasts from September to the end of November and the beginning of December.

French cuisine is very popular in the islands of New Caledonia, which is not surprising. It is a non-classical school - notes of local color are woven into it.

In addition, in cafes and restaurants tourists can offer Oriental cuisine - Chinese and Japanese, the best recipes from African and Indonesian cuisine, there are institutions specializing in Italian menu.

You can also try local dishes, such as meat of animals living on these islands or roast chicken, cereals and vegetables wrapped in banana leaves and baked on a hot roaster.

A separate page of local cuisine - seafood, which in huge quantities are brought to the market by fishermen. They are cooked not only in restaurants, but also right on the street, so their flavor contributes to the relaxed atmosphere of New Caledonia.

Alcohol is not forbidden - you won't have to pay a hefty fine to the local treasury for a bottle of beer opened on the street, but it is still better to consume alcohol in specially designated places, for example, in cafes. Moreover, in every restaurant the client will be offered a choice of wine from a sumptuous list of local and French wines.

New Caledonia Attractions
The main attraction of the island nation is the Barrier Reef and its surrounding bays, which are under the auspices of UNESCO. Stretching 1,500 km in length, the reef surrounds the main island and several small islets, forming lagoons with an amazing and sometimes unique ecosystem.

Divers will appreciate the clear waters of the bays, ideal for deep-sea diving. For beginners, it is better to choose the beach ridge of Gadji Pass. By the way, it is here that the famous Devil's Grotto with the Cave of Satan is located, which can be reached only by swimming through a narrow underwater grotto.

Yacht lovers should go on a trip from the capital to the island of Ile de Pin, with a mooring in Couto Bay. A canoe can successfully replace the yacht and take you around the southern tip of the main island.

Pin Island is ideal for hiking and biking, with a stop at the village of Wao. It is home to the famous statue of St. Maurice, after whom, incidentally, the adjacent bay is named.

Easy contacts on 20 mtres during the afternoons and evening from anywhere in NZ

So this should be an easy addition to your log.

UPCOMING CONTESTS

Refer to the contest websites for full rules, scoring information, operating periods or time limits, and log submission information.

Start - Finish Date-Time		Date-Time		Bands	Contest Name	Mode	Exchange	Sponsor's Website
1	1700	2	0300	All, no WARC	Tennessee QSO Party	CW Ph Dig	RS(T), TN county or SPC	**tnqp.org**
2	1900	2	2030	3.5	RSGB 80m Autumn Series, SSB	Ph	RS, serial	**www.rsgbcc.org**
2	2300	3	0300	1.8-28,50	MI QRP Labor Day CW Sprint	CW	RST, SPC, mbr or pwr	**www.miqrp.net**
3	0000	3	0200	3.5-28	ARS Spartan Sprint	CW	RST, SPC, pwr	**ars-qrp.com**
4	2000	4	2100	3.5	UKEICC 80m Contest	Ph	6-char grid	**www.ukeicc.com**
5	0000	6	0300	7	Walk for the Bacon QRP Contest	CW	RST, SPC, name, mbr or pwr; 13 WPM max	**qrpcontest.com**
5	1800	5	2200	28	NRAU 10m Activity Contest	CW Ph Dig	RS(T), 6-char grid	**nrau.net**
7	0000	8	2359	1.8-28	All Asian DX Contest, Phone	Ph	RS, 2-digit age	**www.jarl.org**
7	0600	7	0800	7,14	Wake-Up! QRP Sprint	CW	RST, serial, suffix of previous QSO	**qrp.ru**
7	0800	8	1000	50,144,432	SARL VHF/UHF FM Contest	Ph	RS(T), 6-char grid	**www.sarl.org.za**
7	0800	8	1000	1.8-28	SARL Field Day Contest	CW Ph Dig	RS(T), # of rigs, category, province or "DX"	**www.sarl.org.za**
7	1300	8	1259	1.8-28	IARU Region 1 Field Day, SSB	Ph	RS, serial	**www.darc.de**
7	1300	8	1300	3.5-28	RSGB SSB Field Day	Ph	RS, serial	**www.rsgbcc.org**
7	1400	7	2200	3.5-28	Ohio State Parks on the Air	Ph	OH park abbreviation or SPC	**ospota.org**
7	1400	8	1400	145	IARU Region 1 145 MHz Contest	CW Ph Dig	RS(T), serial, 6-char grid	**www.iaru-r1.org**
7	1600	7	1900	7	AGCW Straight Key Party	CW	RST, serial, class, name, age	**www.agcw.de**
7	2000	7	2359	1.8-28	CWOps CW Open	CW	serial, name	**cwops.org**
7	2000	8	2000	3.5	PODXS 070 Club Jay Hudak Memorial 80m Sprint	Dig	RST, SPC	**www.podxs070.com**
8	1000	8	1400	144	WAB 144 MHz QRO Phone	Ph	RS, serial, WAB square or country	**wab.intermip.net/Contests.php**
9	0000	9	0200	1.8-28	4 States QRP Group Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or pwr	**www.4sqrp.com**
9	1900	9	2300	144	144 MHz Fall Sprint	CW Ph Dig	4-char grid	**www.packratvhf.com**
11	1900	11	2030	3.5	RSGB 80m Autumn Series, CW	CW	RST, serial	**www.rsgbcc.org**
14	0000	15	2359	3.5-28	WAE DX Contest, SSB	Ph	RS, serial	**www.darc.de**
14	1500	14	1900	3.5-14	Africa FT4 DX Contest	FT4	Signal report, 4-char grid	**www.sarl.org.za**
15	1700	15	2059	3.5-28	BARTG Sprint PSK63 Contest	PSK63	Serial	**bartg.org.uk**
15	2300	16	0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or pwr	**qrpcontest.com**
16	1900	16	2030	3.5-28	RSGB FT4 Contest	FT4	Signal report	**www.rsgbcc.org**
17	1900	17	2300	222	222 MHz Fall Sprint	CW Ph Dig	4-char grid	**www.packratvhf.com**
19	0000	20	0300	14	Walk for the Bacon QRP Contest	CW	RST, SPC, name, mbr or pwr; 13 WPM max	**qrpcontest.com**
19	0030	19	0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or pwr	**naqcc.info**
19	1900	19	2000	3.5-14	NTC QSO Party	CW	Max 25 WPM; RST, mbr or "NM"	**pi4ntc.nl**
20	1600	20	1700	3.5	AGB NEMIGA Contest	CW Ph Dig	RST, serial, mbr (if any)	**ev5agb.com**
21	1200	22	1200	3.5-28	Scandinavian Activity Contest, CW	CW	RST, serial	**www.sactest.net**
21	1400	22	0159	3.5-28	New Jersey QSO Party	CW Ph Dig	RS(T), NJ county or SPC	**www.k2td-bcrc.org**
21	1400	22	0200	All, no WARC or 60	Iowa QSO Party	CW Ph Dig	RS(T), IA county or SPC	**www.w0yl.com**
21	1400	22	2000	All, no WARC	Texas QSO Party	CW Ph Dig	RS(T), TX county or SPC	**www.txqp.net**
21	1600	21	2300	All, no WARC	Wisconsin Parks on the Air	CW Ph Dig	WI park number or SPC	**wipota.com**
21	1600	22	2200	3.5-28	New Hampshire QSO Party	CW Ph Dig	RS(T), NH county or SPC	**www.w1wqm.org**
21	1600	22	2359	1.8-28,50	Washington State Salmon Run	CW Ph	RS(T), WA county or SPC	**salmonrun.wwdxc.org**
25	1900	25	2300	432	432 MHz Fall Sprint	CW Ph Dig	4-char grid	**www.packratvhf.com**
25	2000	25	2100	3.5	UKEICC 80m Contest	CW	6-char grid	**www.ukeicc.com**
26	1900	26	2030	3.5	RSGB 80m Autumn Series, Data	Dig	RST, serial	**www.rsgbcc.org**
28	0000	29	2359	3.5-28	CQ Worldwide DX Contest, RTTY	Dig	RST, CQ zone, (US/VE state/prov)	**www.cqwwrtty.com**
28	1200	29	1200	1.8-28	Maine QSO Party	CW Ph	RS(T), ME county or SPC	**www.ws1sm.com**
28	1400	28	2200	3.5-28	Masonic Lodges on the Air	Ph	Lodge name, lodge no., jurisdiction or SPC	**cqmorelight.com**
28	2000	29	2359	1.8-14,28	AWA Amplitude Modulation QSO Party	Ph	Name, SPC	**antiquewireless.org**
29	0700	29	1000	50	UBA ON Contest, 6m	CW Ph	RS(T), serial, ON (for ON)	**www.uba.be**

Note: All dates and times are in UTC, Mbr = Membership number. Serial = Sequential number of the contact. SPC = State, Province, DXCC Entity. XE = Mexican state.

WELCOME TO SOME NEW HAMS

We welcome 4 new hams to the club this month who have passed their exams, and received their callsigns from RSM

Stephen Paul Million	ZL1MIL (aka Max)
Aaron George Mawkes	ZL2BGA
Roseanne Elizabeth Emery	ZL1RSE
Oscar Taylor Million	ZL2OMD

One is pictured below, Your task is work out which one it is.

Answers Next Month

NOT 1, NOT 2 BUT 3 NEW RADIOS ANNOUNCED AT JAPAN HAM FAIR

The big three amateur radio transceiver manufacturers each featured new transceivers at the August Ham Fair in Japan. Yaesu revealed the FTX-1F, a portable radio designed to compete with the Icom IC-705. Icom announced the IC-7760, a "Shack Style" transceiver with separate base and dual display panel. Kenwood revealed a yet to be named mobile rig capable of both APRS and DSTAR.

THE YAESU FTX-1F

In August 2000, Yaesu Radio announced the FT-817, a portable machine (5W output) in the HF ~ 430MHz band at the Ham Fair. In February 2018, the company announced a renewed model "FT-818ND" with an increased battery capacity and a maximum output of 6W, and has long led the genre of "all-band, all-mode portable machines".

However, the FT-818ND was announced to be discontinued in January 2023 due to difficulties in obtaining parts, and a successor model has not been announced since then.

The FTX-1F, which was announced at the Ham Fair 2024 venue, covers the HF ~ 430MHz band in all modes, including C4FM digital, and supports simultaneous reception of two waves, making it a long-awaited portable device for Yaesu wireless fans.

The image on the left shows the radio with the auto-tuner attached.

The image above shows the 5,670mAH battery attached

The main features of the FTX-1F are as follows.

- The new FTX-1F is a portable battery powered transceiver utilising SDR technology.
- Superb RX performance based on the SDR design technology of the FTdx101MP.
- SDR design uses high resolution A/D converters and FPGA processor from FTdx101MP Design for superb dynamic range and excellent blocking range.
- TX power 6W of power output using the 5670mAh Lithium-ion battery pack. 10W on external 13.8V supply.
- Operates on HF VHF and UHF (160M-6M, 144MHz and 430MHz).
- Simultaneous Dual Receiver for HF/V-UHF, VHF/UHF, VHF/VHF, UHF/UHF.
- 4.3" large colour Touch screen display with Yaesu unique 3D scope function.
- Uses a dual loudspeaker duct system to provide high quality loud audio from 2 intenral loudspeakers.
- Fully compatible with Wires-X system providing world wide communications.

More details can be found on the uk yeasu site: Yaesu FTX-1F Portable HF/VHF/UHF Transceiver

ICOM

Since Icom already had the 705, they needed to release something different. We knew something was coming. But finally, we know what. Meet the IC-7760. Imagine if the IC-7610 was fused with the 705. Then imagine no more, because it sure looks like it.

Icom Inc. proudly announces the release of the IC-7760, a 200W HF/50 MHz amateur transceiver. Initial deliveries are planned for around November 2024. To commemorate Icom's 60th Anniversary, a special 60th Anniversary logo plate is included with the IC-7760 as a special offer for the first 200 units shipped internationally.

The IC-7760 offers a new innovative shack style consisting of a full control head with a separate RF deck connected through a control cable for greater installation flexibility. The supplied control cable is 3 m, 9.8 ft long, and by using a commercially available LAN cable, the RF deck can be installed in a more remote location. Furthermore, the control head and RF deck can be connected through a wired

home LAN for remote operation. This simple configuration does not require a PC and can be easily operated anywhere in the home as long as a LAN connection is available.

DIGI-SEL (Digital Pre-selector) and the preamp can now be used together. DIGI-SEL prevents suppression of strong out-of-band signals, while the preamp improves receiver sensitivity. It also maximizes the dynamic range of the A/D converter to avoid signal overflow.

The IC-7760 offers a new Innovative shack style. It combines 200 W of high output power with clean signal transmission assisted by the Digital Pre-Distortion feature and convenient functions to support comfortable operation, making it ideal for contests and DX hunting.

Features and Functions

- Full control head with separate RF deck for greater installation flexibility
- Supports in-house remote operation through a wired LAN*1
- Two displays, 7-inch wide and 2.4-inch, with touch screen operation
- DIGI-SEL and the preamp can work at the same time
- Advanced RF direct sampling system using FPGA processing
- 200 W full power and full duty *2
- DPD (Digital Pre-Distortion) for excellent IMD characteristics and clean transmitted signals

Full details can be found on the ICOM website: [IC-7760: New Innovative Shack-Style Control Head with RF Deck | News | Media & Promotions | Icom America.]

KENWOOD

JVC-KENWOOD Corporation exhibited a new car transceiver (compatible with APRS/D-STAR) in the 144/430 MHz band at the Ham Fair 2024, which began on Saturday, August 24, 2024. There is no indication of the model name, but it is said that development is underway with the aim of releasing it in 2025.

In 2007, the company had released the TMW-706/S, a D-STAR compatible mobile machine supplied by Icom Corporation on an OEM basis, exclusively for its own online shop, but this is the first time that it has been developed in-house.

JVC- KENWOOD exhibited a car transceiver under development. It consists of a large control unit (controller) and the radio body

The new car walkie-talkie exhibited as a reference was a mock-up in an acrylic case, and there was no indication of the model name. There were no catalogues or explanatory panels, but the upper monitor showed images that conveyed images and concepts. The design of the control unit is subject to change as future development progresses.

The features of this new car transceiver interviewed by hamlife.jp are as follows.

- Compatible with D-STAR and APRS. Simultaneous reception of two waves is possible.
- A completely separate model consisting of a large control unit (controller) and a main body with excellent operability and visibility
- The mounting bracket of the operation part is compatible with conventional car transceivers such as TM-D710, so replacement users can rest assured.
- Equipped with a tripod hole on the bottom of the control unit (controller)
- Built-in GPS receiver

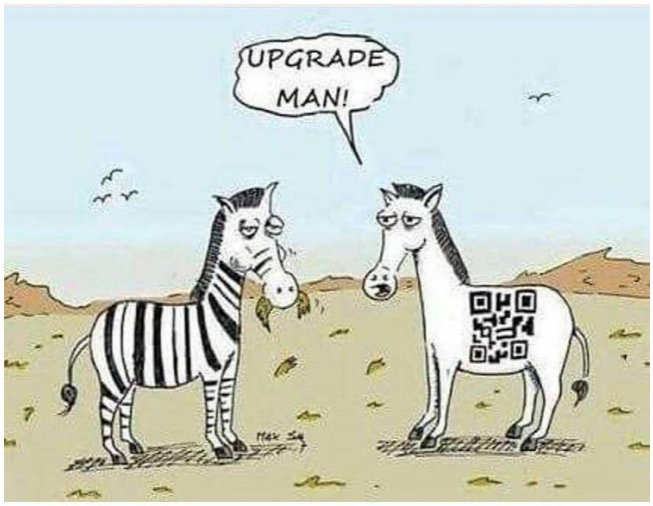
The control unit is equipped with a front speaker. Even in a noisy mobile environment, communication can be performed with highly clear voice

・All D-STAR operations that can be performed with the new handheld machine "TH-D75" are also installed in this product. In addition, the operation of the reflector has become easier
- Abundant terminals. USB terminals are installed on both the control unit and the radio itself.

Terminals on the side of the control unit
The main unit is equipped with a microphone terminal and a Micro SD slot.
There are two external speaker terminals, and they can be used separately for the main band and the subband.
The price is expected to be higher than that of the TH-D75.

Video from the Hamfest can be seen here: https://youtu.be/uLb5n-IMEwk (not a lot of audio detail, unless you speak Japanese)

Thanks to Hamlife Japan for the use of the images.



RAMBLINGS FROM THE EDITOR'S DESK

Well, another ham cram down, and a chance to catch my breath again. This means we have started spring, It also means that daylight saving is again about to rear its head, which is great for those who can sleep in, and stay up late, but awful for those of us who are driving early in the morning, But one benefit, with the shift to the hours of daylight, is that the solar panels should still be producing power while we cook dinner, so less drain on the batteries, and I guess the grid for those without batteries.

I had the pleasure of attending the Solar Energy Association NZ (SEANZ) conference last week, and this gave me a chance to get a good look at some of the newest solar technology (sadly not the new Solar hydrogen panels, They're still in development), and get a feel for the state of the industry, and I have to say I was impressed, but also concerned by some of the information on the state of the network, there is little doubt that power prices will need to rise due to a lack of generation capacity, but our network, designed for power consumption not generation will struggle with increased demand and distributed generation. It seems that despite years of talk about renewable energy, very little has been done to facilitate this at a network level.

In addition, the electrification of homes (cooking and hot water) and especially travel (EVs Rail networks and busses) will continue to place high demand on our limited infrastructure for many years to come. The likelihood of further winter power shortages will only increase unless more energy storage is made available to supply the network. This has made me consider my solar installation, and ways to expand it, fortunately with the cost, and efficiency of solar panels, and Battery Energy Storage Systems (BESS) all falling, the next few years may yet bring the costs of a solar installation to a level that justifies the expense of the installation.

Perhaps one day, the costs will be low enough to allow us to think about a solar installation at the clubrooms. Who knows.

On the topic of attending activities, it was good to finally get to an equipment sale. The Hamilton radio club sale at Gordonton was a good day out, with many familiar faces (and some who were only familiar voices) and it was good to put a face to the voice, along with the traditional – "I thought you sounded taller", or whatever. While there was a good range of equipment, I left with very few items this year, mostly due to my own overloaded shack. But it was good to mix among the community. A big Shout out to Denis, and the team in Hamilton for putting the work together.

My love of rocketry has been left a little high and dry, with NASA finally admitting that Boeing's Starliner is officially not ready to carry astronauts, and leaving the two test crew stranded on the ISS. They now leave the test programme, and instead become part of the next crew rotation, A two-crew team will now travel to the ISS, for a shortened stay, and the stranded astronauts will return on the SpaceX Dragon capsule.

We still have no word on the spacesuits they will wear back, Will SpaceX bring two extra suits for them? If so how will they get fitted? If not will SpaceX provide a connection adapter for the Beoing suits? This raises the question as to why a system designed to provide redundancy, used suits that are not compatible with all the different spacecraft. So I expect there will be more questions to follow this.

The huge SpaceX Starship has also been a long wait-and-see mission, with the authorities reviewing all of the flight approval paperwork, This time it looks like the mega-rocket will fly its fourth test flight, and then return to the landing pad where the “Chopsticks” or mechazilla catching arm, will grab the landing rocket, and lower it back to the launchpad. If successful, this will be a sight to behold, But at this stage we have no idea when this will launch, so its another one that I watching and waiting for some progress.

And the Polaris Dawn commercial space walk – Yep, Waiting for the right weather … AKA – On hold.

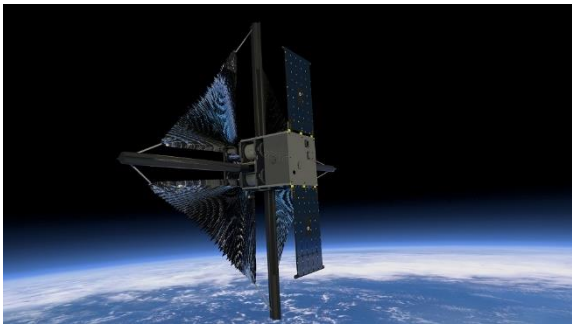
So plenty of things to keep me waiting, But the wait is getting painful.

Speaking of painful, NASA finally deployed their solar sail project, The Advanced Composite Solar Sail System (ACS3) mission aims to test the efficacy of a new type of solar sail — a device potentially capable of propelling spaceships to faster-than-currently-available speeds using radiation pressure exerted by sunlight.

The ACS3 spacecraft consists of a roughly 860-square-foot (80 square meters) foil sail that, until recently, was tightly folded up within a microwave oven-size satellite, known as a CubeSat. The sail deploys from the small box using a novel series of folding booms, which are made from a new composite material that is 75% lighter and more resistant to solar radiation than the frames used in previous solar sails deployed by Russia, Japan, NASA and other private companies.

ACS3 was successfully launched into space on April 23 on board a Rocket Labs Electron Rocket that lifted off from the private company's launch pad in New Zealand. The CubeSat was positioned in a low-Earth orbit around 600 miles (965 kilometers) above our planet's surface, where it remained until scientists carried out the necessary preparations for the sail to be deployed.

The ACS3 team first attempted to unfurl the sail on Aug. 26 but abandoned the roughly 25-minute-long procedure after an "onboard power monitor detected higher-than-expected motor currents," Gizmodo previously reported. After addressing the issue, the sail was fully unfurled on Aug. 29, according to a statement from mission scientists at NASA's Ames Research Center in Silicon Valley, California.



Initial photos of the spacecraft from Earth confirmed that the sail had properly deployed. But soon after, observers noticed something unusual. The sails reflected light was changing brightness. It has now been confirmed that it is "tumbling or wobbling" through space, which may have also impacted its trajectory around our planet.

NASA representatives didn't reveal any additional information about the tumbling motion or deployment sequence. However, the spacecraft's attitude control system (ACS) — a device controlling the orientation of a spacecraft relative to an inertial frame of reference — is currently offline.

The ACS will be reengaged when the mission team is "satisfied with the tensioning of the sail,". But there was no indication of when this could be.

The solar sail could be visible to the naked eye as it passes across the night sky over the next few weeks — depending on how bright it is at the time. If you want to try and see it for yourself, you can find a full list of potentially visible passes over the next 10 days on heavens-above.com (click the "all" button to see the list).

After all that space talk, It was good to have Chris Jackson (yes the newsletter is late) speak at the clubrooms on Wednesday, His story of a ham, who ended up working in satellite construction, was both interesting and insightful. It was good to hear about some of the challenges that are faced in putting hardware (especially radio hardware) into orbit.

If you looking for some good knots for POTA or SOTA (or any other application) there is a useful link below that provides a list of different animated Knots suitable for many different situations. So if you forgot all those old scout knots, AB1WX Ryuji: "Part 2: https://www.animatedk…" - Mastodon.Radio may be a link that you will enjoy refreshing those skills

A double Dragon Loop knot is one of the many (and I do mean many) knots that are linked to on the animated knots site: https://www.animatedknots.com/

The other news that rocked us this month was a report from the Canterbury Museum senior curator of natural history Paul Scofield who with palaeontologists excavating the St Bathans fossil site in Central Otago say kiwi, moa and Takahē came from Australia just a few million years ago.

His report claims DNA has shown that those species diverged from animals on Gondwana and in South America and Madagascar far more recently - only 30 - 40 million years ago.

So the National bird of New Zealand, is actually an Australian immigrant.

But the kākāpō is one of the true ancient species of New Zealand.

The kākāpō is one of the most ancient groups that is currently in the New Zealand bird world, and the other important one is the wren, the New Zealand wren, and the rifleman.

So maybe consider these new findings when voting for Bird of the Year, so as not to crown an Australian immigrant with the title.

So by now you're probably wondering what all this has to do with Ham Radio. And I have to agree not much. Except … the common theme is that just 1 year ago, every single fact above, was completely different, In fact much of what is discussed above would have been classed as either misinformation, or would have failed a fact check, but in a short time everything we thought we knew has been turned on its head. (ok maybe the knots might get past the fact checkers), but the world has changed, and so too have the "Facts" we knew to be true.

Ham radio has a long history, and we owe a lot to those pioneers who paved the way forward, But the bands we have, the technology available to us, The modes, make the Ham radio world we live in, Very different from those of the past, yes HF propagation still works the same way, but the equipment, and even the antennas are radically different.

Add some new modes (yes, even FT8 is a mode), as is DV (even SSB isn't that old) or other narrow band modes. Waterfall displays, SDR receivers, and we quickly see that the hobby must change.

For example "win-link" has recently had a huge uptake in interest as a tool for message handling without the need for an internet site, but this means a ham must learn about modems, and interfacing these to a PC over USB, configuring ports and sound card settings, then interface these to the ports on the radio to connect the PTT and audio interfaces. Or in short be a bit of a computer geek.

D-star, DMR and even the analogue All-Star hotspots, or a repeater built from a raspberry pi, this requires a degree of technology. While schools are busy trying to produce programmers, we realise that the need of our age is a savy tech, who can connect different technologies together.

And it's the Ham radio geek who just may be the one to talk to.

- Solar Power – Yep Hams do that
- Repairing equipment, or repurposing it (aka recycling) – yep hams do that too
- Putting stuff in space – Yep that too
- Rigging, and securing stuff with knots that won't slip – Yep try a ham
- And are they 100% kiwi? just ask any ham, who takes the time to listen to others around the world, and gets to see things from a different perspective, and maybe realises that despite our differences we all share a common ancestry – Yep . That too is the ham. Just look at how many kiwi hams are imports, but that only adds to the richness of the hobby.

But isn't ham radio dying? Well funny you should say that. It wasn't long ago, that STEM was talked about (never really implemented), but almost all that became programming or app development, But just because an Arduino can do a lot, the rest of the package Science, Technology, Education & Mathematics (STEM) is actually the basis of every ham cram, Yes the course content is a bit dated, but amateur radio is actually all of these in a single package. Remember, none of us was born knowing how to solder, we all had to be taught it.

Somehow we just have to get the message out. Radio is cool, Amateur radio is STEM with hundreds of potential applications. It involves computers, data technology, electronics, rigging, antenna theory, physics, mathematics, technology integration, communication skills, equipment operation, installation & configuration, DC power systems, off-grid power, and yes sometimes a bit of programming… and more.

So how do we get the message out there?

We have to take the hobby out of the shack, and into the world. This is where portable use shines, a handheld on a park bench may start a conversation, but a Park activation will most definitely get people talking.

If the hobby is to grow, we need to introduce it to a new generation, and even better, we need to show that it's not all about the old stuff, even though that has got a lot of attention where GROTA is active, it's about all of the parts, and all the things you can play with and do once you have the licence.

So as we welcome 4 new operators, and more yet to come, make sure you support them and help them grow.

It's not about being professional, or having the latest gear, It's about finding what you like, and growing into it. It's experimentation, and making mistakes, and laughing about them, but mostly it's about giving it a go, and having fun.

You may make a mistake, but at least you have made something.

Stop worrying if you're doing it right. Just make sure you're doing it.

Its food for thought

73 for now de ZL1NUX

AND FINALLY WE CAN CONFIRM THE UNIVERSE IS MADE OF ...

Utilizing cutting-edge technology, NASA's New Horizons spacecraft has achieved the remarkable feat of precisely measuring the total amount of light generated by our universe.

For decades, astronomers have grappled with the perplexing question of why the universe appears so dark. Scattered sunlight and interplanetary dust and ice within our solar system have hindered accurate measurements of the ambient light emitted by the countless galaxies populating the cosmos.

Launched over 18 years ago and having successfully mapped the surface of Pluto nine years ago, the New Horizons spacecraft has now provided an answer. Drifting over 5.4 billion miles (8.8 billion kilometers) away from Earth in the vast and desolate outer solar system, the spacecraft captured data on the universe's light. The researchers published their findings on August 28 in The Astrophysical Journal.

The background of visible light accumulated over the universe's lifespan, known as the cosmic optical background (COB), is crucial for astronomers. It helps them match the light from stars and the exteriors of black holes with theoretical predictions.

Attempts to measure this light directly have been thwarted by the overwhelming sunlight and reflected interplanetary dust in our part of the solar system, which scatters light into a hazy fog, obscuring the faint light from the distant universe. To overcome this, New Horizons ventured far into the Kuiper Belt, on its way to interstellar space. There, it used its body to shield the Long Range Reconnaissance Imager (LORRI) from the sun's light and pointed away from the Milky Way's bright core, snapping two dozen snapshots of the universe.

After carefully calibrating the observed light levels with infrared data from the Planck satellite to screen out dust, researchers estimated the universe's visible light at a radiant intensity of 11.16 nanowatts per steradian. That is a measurement that is very very dark.

The simplest interpretation is that the COB is entirely due to galaxies. Beyond the galaxies, we find only darkness and emptiness.

So yes – interstellar space is cold, it's dark, and it's very empty. Nothing like the vibrant, bustling cosmos depicted in sci-fi movies.

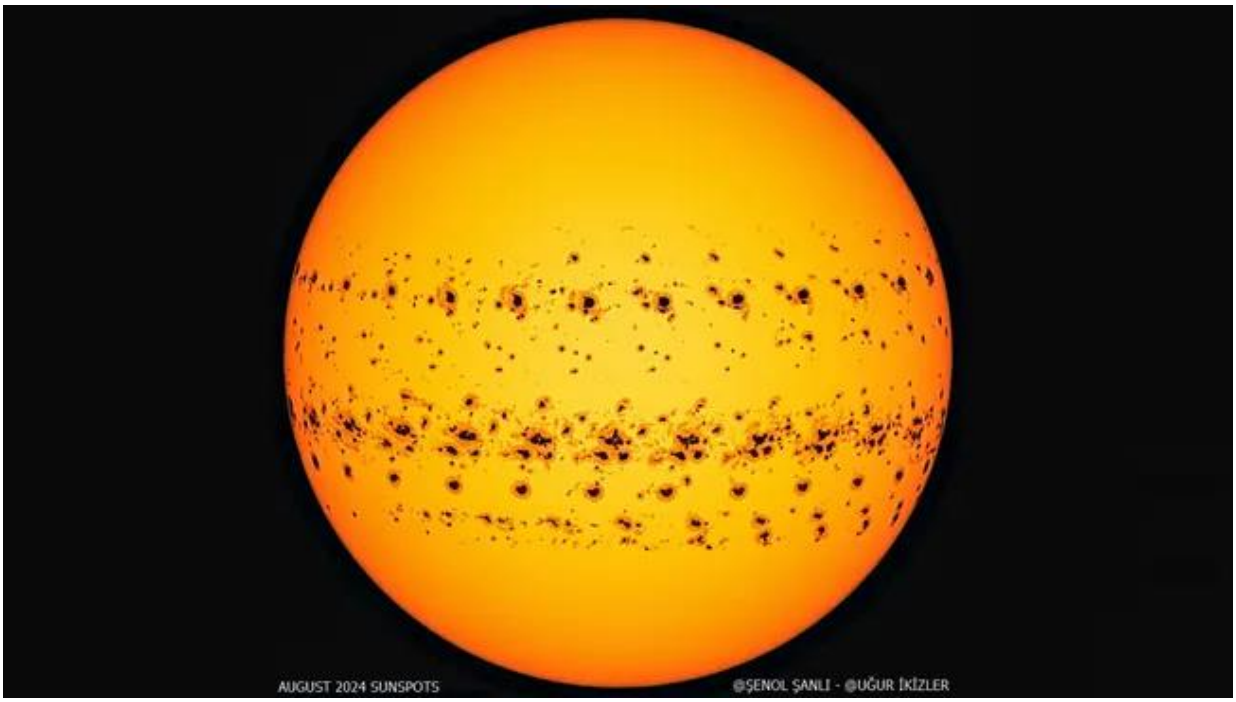
But why are we so keen to explore this vast emptiness? The answer lies in our innate curiosity, the drive for scientific discovery, and the quest to understand our place in the universe.
And who doesn't like a chance to get a good photo of the night sky.

SUNSPOTS SURGE TO 23-YEAR HIGH AS SOLAR MAXIMUM EXCEEDS EXPECTATIONS

In August, the average number of visible dark patches, or sunspots, on the sun's surface was higher than any other month since September 2001. The final count was more than double what experts initially predicted.

On average, there were 215.5 sunspots each day in August. This time-lapse image shows every visible dark patch moving across the sun during this period.

New data reveals that the number of sunspots in August was the highest in almost 23 years. This latest count, more than twice the initial forecasts, is a clear sign that the sun's explosive peak, known as the solar maximum, is likely well underway and will be far more active than scientists initially thought.



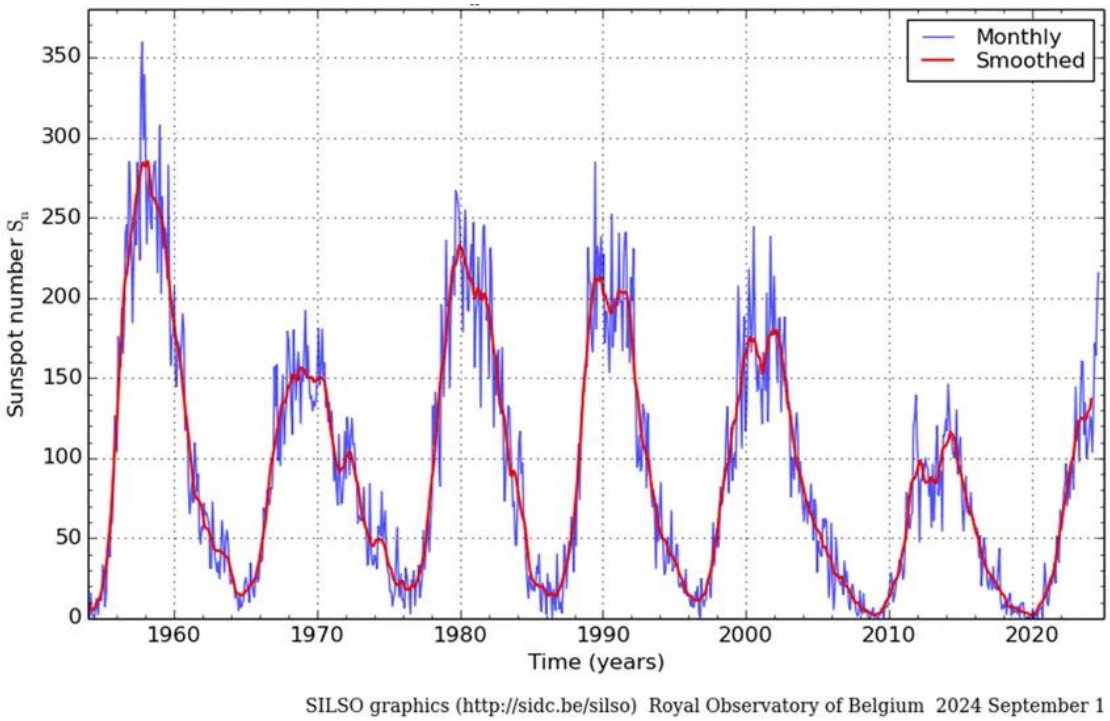
A time lapse image of the sun showing all the sunspots that have appeared in August
There was an average of 215.5 daily sunspots on the sun's surface during August. This time-lapse image shows every visible dark patch moving across the sun during this time. (Image credit: SDO/Şenol Şanlı/Uğur İkizler)

Sunspots are regions on the sun's surface where bursts of electromagnetic radiation break through the star's magnetic field, creating relatively cool patches that appear black due to an optical illusion. Along with solar flares and coronal mass ejections, sunspot numbers indicate the progress of the sun's roughly 11-year solar cycle.

During the sun's least active phase, or solar minimum, there are very few or sometimes no sunspots. For instance, in late 2019, just before the start of the current solar cycle (Solar Cycle 25), there were 40 consecutive days with no visible sunspots. But as the sun's magnetic field becomes tangled and weakens, sunspot numbers quickly climb, peaking during the solar maximum. During this active phase, the sun's magnetic field eventually snaps and completely flips, leading to a decrease in solar activity and sunspots until the cycle restarts.

The number of sunspots peaked on August 8, with up to 337 sunspots observed in a single day, the highest total in a 24-hour period since March 2001.

These numbers suggest that we have entered the solar maximum. However, we can't be certain until sunspot numbers begin to drop again.



When the current solar cycle began in 2020, SWPC scientists predicted that Solar Cycle 25 would be relatively weak compared to historic cycles, similar to Solar Cycle 24, which peaked around 2014 and was the weakest maximum in about 90 years. For example, the average sunspot number predicted for August 2024 was 107.8, less than half the actual number recently reported.

The SWPC forecast also suggested that the solar maximum would probably not arrive until 2025. However, from early in the current cycle, sunspot numbers have not matched initial forecasts. They began to climb in early 2022, reaching an eight-year high by the end of the year. By June 2023, the average number surpassed any month from Solar Cycle 24 and has continued to increase.

As a result, SWPC released a "revised prediction" for Solar Cycle 25 in October last year, which forecast that solar maximum would likely arrive by mid-2024 and be more active than expected.

But this prediction is far from guaranteed, there is still a good chance that the peak may not occur until 2025, which could make the current cycle one of the largest on record.

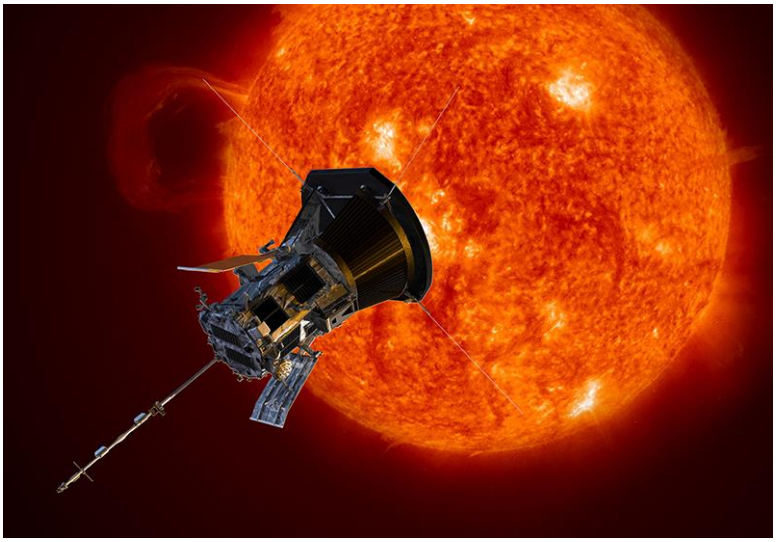
Rising sunspot numbers are not the only indication that we are now experiencing the solar maximum. In early May, Earth was hit with the most powerful geomagnetic storm in over 21 years, painting an unusually large portion of the planet's skies with auroras. Just a few days later, our sun emitted an X8.7 magnitude solar flare.— the most powerful solar explosion since 2017.

Solar maximums can last for one to two years or more, meaning there is still a decent chance that activity will continue to ramp up over the next 12 months or so. During Solar Cycle 23, sunspot numbers peaked at a maximum monthly value of 244.3 in July 2000. And in Solar Cycle 22, the monthly record was 284.5 in June 1989.

The potential consequences of a continued increase in solar activity, coupled with the occurrence of more powerful solar storms akin to the historic 1859 Carrington Event, are significant. These consequences include the disruption of ground-based infrastructure, the occurrence of auroras at lower latitudes, and the possibility of satellites tumbling back to Earth.

High sunspot counts are often considered good for HF communications allowing long range with low power, But if the sun gets too energised, then the D-layer can absorb all HF radio waves, and prevent any communications at all. A "radio Blackout". In addition, the sun can emit radio waves during events, causing high noise on HF bands.

But the sheer size of the error from the SWPC, shows again how little we know about our sun, and how much we have yet to learn. Hopefully, projects like the Parker Solar Probe, currently passing by Venus, at a speed of 81,594 kph will continue to give us more data about our closest star.



We should know more on Christmas day, when the probe will achieve its first closest approach to the sun, on perihelion 22 when the Parker Solar Probe is expected to come within approximately 6.1 million kilometres (about 3.8 million miles) of the Sun's surface. At this point, the spacecraft will be travelling at a speed of about 692,000 kilometres per hour (approximately 430,000 miles per hour). This close approach will be part of the mission's final series of closest encounters with the Sun.

Parker Solar Probe's final approach to the Sun, known as perihelion 24, is expected to occur on June 18, 2025. This will be part of its mission to gather data and make measurements from within the Sun's atmosphere, contributing to our understanding of solar phenomena and expanding the limits of space science. This will be the last of its three closest approaches to the Sun, following perihelion 22 on December 25, 2024, and perihelion 23 on March 23, 2025.

HEARD AROUND THE SCENES

PAPAKURA AMATEUR RADIO CLUB INC.
USB/ RADIO INTERFACE KIT...

This USB Interface will connect radios like Kenwood, Icom. Yaesu, Elecraft, Alinco, TenTec etc through CAT, audio in/out and the PTT ports. Special interface cables are easy to create to suit your radio and help with their design is available from the Papakura Amateur Radio Club, 1 Great South Road, Papakura.

This unit (kitset) will, when built, provide you with many years of enjoyment with access to digital radio modes you may not have been involved with to -date. These include SSTV, RTTY, PSK including the popular FT4 and FT8, Echolink, Winlink and many more.

This kit comes with the printed face plates, and the PCBs of through hole design except for 31C's which are SMD, and you may need assistance in soldering these units, again your local club may help here.

Ideally suited to VHF / UHF, these units can also be used on HF but there may be some interference so shielding of the unit may also be required. This can be done with aluminium foil or conductive paint etc., not included in the kit. If shielding, you should bolt a lead to the front and rear panels and run that lead to the foil or painted surfaces, completing the shielding circuit.

The design is like other units available on the market...there are isolating transformers in the audio circuit to restrict interference and of course the controls are on the front panel to allow you to adjust the levels of transmit and receive audio. The USB cable provides

the only power needed by the unit. There are LEDs also on the front panel to indicate your current operating condition. On the reverse side of the unit there is a Cl -V socket if your radio supports this, and there is also the FSK/ PTT socket, an Audio In/Out socket, the RS232 9 pin connector and a RM5 connector, if that is needed. On the R45 connection, pins 1,2,7 and 8 are not used but are carried thru to the PC Board just above the RS45 connector.

In V1.5a the Mini Din connector is replaced with an RJ45.

This unit is ideal for those new computers that do not have a Serial Port but do have USB ports as the unit will connect to your PC via the USB port...the only connection you may need.

You will need to set up your COM ports etc. to suit your radio and the software that you have chosen to use.

Kit orders.. email: zl1dk@nzart.org.nz or david@southcitymotors.co.nz

Kits are $50.00 each plus postage.

Bare PCB, inc. printed front/rear panels and instructions are $15.00 each plus postage.

STILL FOR SALE:

1 x Baofeng UV5R, In box, with NZ power supply, As New Not yet programmed - $45.00 ono
1 x Pofung UV-82 With Charger. Used, But in Good Condition - $40.00 ono
2 x Quinsheng Handhelds (Single Frequency Models) Dual Band
Includes 1 Hand Mic + with Antenna $90.00 for the set. ono

Being sold by a licensed dealer on behalf of a club member, Will only be sold to licensed Hams, and details of the sale will be given to RSM.

Contact ZL1NUX (Contact Details on the Back page of the newsletter) for more details, or to hear these on Air.

THE NEXT NZART BROADCAST IS ON THE 29TH SEPTEMBER 2024 AT 8:00 PM (REPLAYED AT 9:00 PM) AND WILL BE POSTED ON THE WEBSITE ABOUT THE SAME TIME..

The HF broadcast is made on 3900 KHz, LSB at the top end of the 80m band. It will be rebroadcast in the Auckland area on the 6625 Repeater, and is available on the NZART website: NZART-Official Broadcast

SOME NETS – FOR WHEN YOU ARE LOOKING FOR SOME COMPANY

Day	Time (NZST)	Freq (MHz)	Group
Sunday	08:00	3.750	Southern Net
	08:00	**146.625**	**Br 65 – Papakura Net**
	09:00	3.700	Br 10 - Franklin
	09:00	**3.755**	**Br 65. Papakura.**
	09:30	146.900	Br 10 – Franklin ZL1SA
	19:00	146.700	Auckland YL Net
	19:45	145.575	Thames radio club ZL1DF
	20:00	3.710	Br 42. Titahi Bay
	20:15	146.625	Sunday News and Net (Auckland)
	21:30	3.595	Duran WIA Net.
Monday	11:30	3.850/7.125	Br 12. Hamilton
	19:30	3.757	Br 12. Hamilton
	20:00	Echolink	Basic Morse (ZL1PX)
	20.00	3.540	CW Practice Net
	20:00	3.605	Br 80. Hibiscus Coast
	20:30	3.870	O.T.C (Old Timers Club)
Tuesday	09:00	7.096	Ex Post Office Techs
	19:30	3.690	QRP ZL3TK
	20:00	3.581	CW improvers Net
	20:00	7.025 – 7.040	VK CQ QRS Group (CW)
	21:00	1.850	160m Net
Wednesday	11:30	7.125	SPAM Net
	18:00	14.049	VK CW NET
	19:30	146.700	ZL1AB Net
	20:00	3.660	Geek Net
	20:00	3.645	Br 02. Auckland
	20:30	146.525	W.R.S.C
Thursday	09:00	7.096	Ex Post Office Techs
	18:00	7.0674	SAS Net (CW)
	20:00	3.615	Br 89. REG Net
	20:30	3.696	ZL1OA
	20:30	3.666	LF Net ZL2CA
	20:00	3.690	ZL QRP SSB Net
Friday	20:30	3.850	SPAM (AM Mode)
	20:30	3.650	W.S.R.C.
	20:30	3.560	Digital Modes Net
Saturday	10:30	28.530	10-10 Down Under (AK Based)
	19:30	3.650	Christian Fellowship
	20:30	3.600	Br 62. Reefton/Buller
Daily or Other	07:30	3.696	ZL2OA
	08:30	3.730	ZL3RP
	15:00	14.300	Pacific Seafarers
	17:30	3.760	Home Brew
	05:00 Zulu	14.183	ANZA DX Net
	18:00	7.115	VK7OB
	19:30	3.720	ZL1MO
	18:30	3.766	ZL3LE
	08:00	3.730	ZL3DAC
	20:30	3.725	ZL2HN / ZL4RF
	21:00	3.677	Counties Net ZL2MA
	21.00	3.535	New Zealand Net (CW)

Our desire is that this will be a living list,
Please email zl1nux@outlook.com any updates, deletions or changes required.

Papakura Radio Club Inc.
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Westpac 03-0399-0019896-00
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Vice President	ZL1BNQ	Richard Gamble	021 729 270
Secretary	ZL1AOX	Ian Ashley	021 198 1810
Treasurer	ZL1MR	David Wilkins	021 185 7903
Committee	ZL1DK	David Karrasch	021 560 180
	ZL1IRC	Ian Clifford	021 082 48400
	ZL1RJS	Rob Stokes	021 307 005
	ZL1RIC	Ricky Hodge	027 533 8155
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Hall Custodian	ZL1AOX	Ian Ashley	021 198 1810
Newsletter.	Contact:	zl1nux@outlook.com	

Our newsletter is published monthly and normally distributed just before the club meeting. Please forward articles etc to the editor Wednesday 1 week before the general meeting. Please notify any change of address. Including E-Mail Address to the secretary.

Meetings
General Meetings are held at the Clubrooms on the 1st Wednesday of each month, starting at 7.30 pm. Look at your calendar and mark these nights. The speaker follows the General Meeting.
Activity Nights are held on the 2nd Wednesday starting at 7.30 pm.
Committee Meetings are held on the 3rd Wednesday of each month at 7.30 pm unless advised.
Project Evenings are on the 4th Wednesday of each month.
AREC Meetings are on the 5th Wednesday night, also starting at 7.30 pm
AGM: Held in November

Subscription: Full membership and newsletter $25.00 Family Membership and newsletter $40.00
Bank Account number: 03-0399-0019896-00

Working Bees As required.

Branch 65 21 Award: For contacts with ZL1VK (5 Points) and 8 Papakura Radio Club Members (2 Points each). Total 21 Points. Cost $5-00. Certified list and $5-00 to Secretary, Papakura Radio Club. Address above.

ZL1VK Club Nets
146.625 MHz Sunday at 8.00 am. Controller ZL1NUX, Gavin Denby. If the repeater is not available, listen 146.475MHz simplex.

3.755 MHz Sunday at 9.15 am. Controller ZL1BNQ Richard Gamble. (Linked to 146.675 & 438.775)