The Official Newsletter of the

PAPAKURA RADIO CLUB INC.

September 2020

Sale Season ~ At Last ~ Almost -Maybe?

Special lockdown Version 2.0 Edition

CONTENTS ...

This Month's Meetings:

As a result of the Governments Covid-19 Restrictions, we can only meet after the first week of the month; as a Result it has been decided to delay our general meeting for 1 week. This means we will be meeting at the clubrooms on the 9th under alert level 2 conditions.

So out September Timetable will be:

Wednesday 5 August – No Meeting – Special Net on 690 Repeater @ 7:30
Wednesday 9 August – No Meeting – Special Net on 690 Repeater @ 7:30
Wednesday 12 August – Committee Meeting
Wednesday 19 August – Project/Activity Night?
Wednesday 26 August – AREC Night?

I have includes some extra reading in this edition, Hope there is something of interest to everyone.

Papakura Radio Club (Inc.)

Minutes of General Meeting 5th August 2020 at 19.30
Clubrooms, Wellington Park.

No visitors and 19 Members present as per roll book
Meeting chaired by the Vice President Richard ZL1BNQ.

Apologies: ZL1MR, ZL1NUX, ZL1GIT, ZL1ABR & ZL2SEA
ZL1DK/ZL1ASN

Minutes of the July General meeting as per the newsletter reviewed by Richard.

Matters arising: Nil
ZL1IRC/ZL1RJS

Inward Correspondence:

Newsletters 86, 29
Mercury Energy $143.59

Outward Correspondence: Nil
ZL1AOX/ZL1ASN

Finances: No report as Dave ZL1MR away.
Accounts to pay: Nil
Garden Club paid $20 today at bank. President advised cost was now $25.00

General Business:

1. Meetings 2020:
   August 5th: Remit plus Morse keyer made from common household items.
   September 2nd: ZL4AX TBC
   October 7th: Conference Report plus 10 minute talks.

2. Bushcomm antenna: work can proceed.

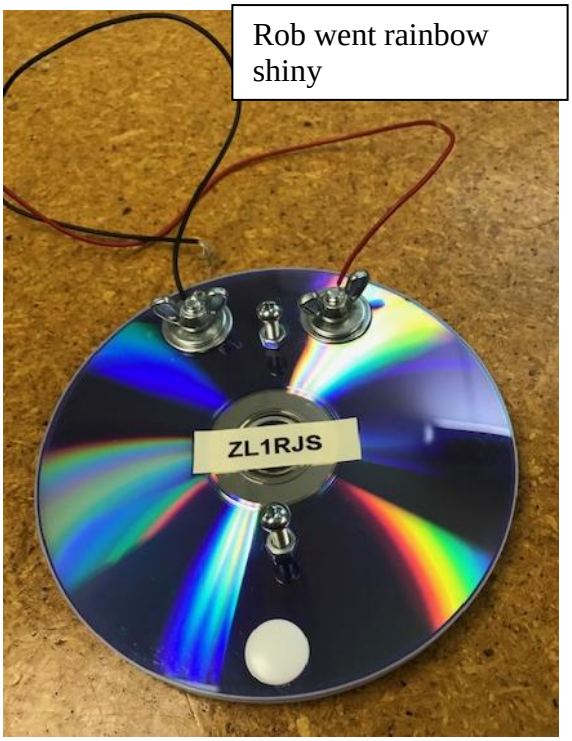
3. Project/activity nights 2020: Arduino Keyer, long wire antennas, magnetic loops (Wally).

4. Hall Hire: Healing Hands meeting on Saturday October 10th all day.

5. Rallies – David ZL1DK:
   6th September at Maramarua
   25th October James Allen Rally
   Both require operators. Please contact David ZL1DK if able to help.

Meeting closed at 19:48 and was followed by Branch 65 Meeting for Remit voting.
A variety of home brew keyers were presented after the Branch 65 meeting by Rob ZL1RJS, Graham ZL1AUG, John ZL1AQS, John ZL1BYZ, Jackie ZL1WA, David ZL1DK with two (microswitches) and Ian ZL1AOX with Arduino Mega keyer with K3NG software.
A vote was taken and Rob ZL1RJS was judged to be the best closely followed by Graham ZL1AUG.

GOOD TO SEE INVENTION IS NOT DEAD – CHECK THE CREATIVITY OF OUR MEMBERS – WELL DONE ALL !!!

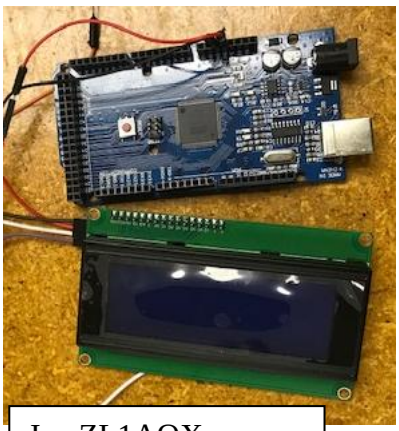


Rob went rainbow shiny

Graham ZL1AUG Kitchen Tongs

Below is John and Jackie's entry

Jackie ZL1WA used 2 nails for her keyer, whilst John ZL1BYZ used the tab on a sardine can for his kev



Ian ZL1AOX Mega2560 Arduino with K3NG Software

David ZL1DK 2 micro switches

John ZL1AQS Broom handle

CLUB ACTIVITY:

- Note the special timetable below
- David is continuing the Morse Classes,
- Due to Alert level uncertainty – Not Much else

UPCOMING PROJECTS:

MORSE TRAINING EACH NIGHT EXCEPT WEDNESDAY 7:30 – DAVID ZL1DK

Each night at 19:30 Local, David will be transmitting Morse (audio – LSB) on the Club HF frequency of 3.755 (80 Metres), Following the transmission the message as sent will be read out, and you can self-mark.

The teaching Tool is the Teach4 system and can be found on the NZART website at https://www.nzart.org.nz/learn/morse-code/ The recommended speed setting is 6 words per minute and 16 word Farnsworth setting (this will change later once we have mastered the alphabet.) This is a great chance to either learn a new skill, or brush up an old one

We will be building some HF antennas for Drury, and planning some long wire 5 band antenna for Home Stealth use over upcoming project nights, but this can only occur once alert levels are reduced

UPCOMING ACTIVITIES:

WEDNESDAY 5 AUGUST – NO MEETING – SPECIAL NET ON 690 REPEATER @ 7:30
WEDNESDAY 9 AUGUST – NO MEETING – SPECIAL NET ON 690 REPEATER @ 7:30
WEDNESDAY 12 AUGUST – COMMITTEE MEETING (OK AT LEVEL 2.5)
WEDNESDAY 19 AUGUST – PROJECT/ACTIVITY NIGHT?
WEDNESDAY 26 AUGUST – AREC NIGHT?

PLEASE LISTEN FOR UPDATES ON THE SUNDAY MORNING CLUB NETS
(SEE LAST FOR FREQUENCIES AND TIMES)

DX NEWS SEPTEMBER 2020

Antarctica base stations

Mirny Station

Alexander, RX3ABI is QRV as RI1ANM from Mirny Base, IOTA AN-016, until early 2021 while on work assignment.
Activity during his spare time on 40 and 20 meters using FT8.QSL via home call.Syowa Station

The 61st Japanese Antarctic Research Expedition's over wintering team at the Syowa Station on East Ongul Island (AN-015), Antarctica includes Taka, JA1AGS and Hiro, JH7JCX.In their spare time they are QRV from the 8J1RL club station, with activity on 40, 30, 20,17 and 15 metres mainly FT8.

They will be there until January 2021.QSL via the bureau to 8J1RL, or direct to JG2MLI.

ANNOUNCED DX

EA, SPAIN
The special event stations EG1SDC-EG9SDC and EH1SDC-EH9SDC celebrate the feast day of Asturias and its patron saint, Santinade Covadonga, between September 1-13. QSL for all calls via EA1AUM (d/B), LoTW, eQSL

G, ENGLAND
Members of the Royal Air Force Amateur Radio Society (RAFARS) commemorate the Battle of Britain as GB800BOB from September1 until September 28. QSL via 2E0NDZ.

G, ENGLAND
GB5ST, celebrating the TV series Star Trek and various spin-offs, begins its mission on September 1. QSL via bureau and eQSL.

K, UNITED STATES The special event station K5R commemorates the devastating hurricanes Katrina and Rita 15 years ago. QRV until end August with a focus on 40, 20, and 17m. QSL via KD5PCK (d), LoTW, ClubLog

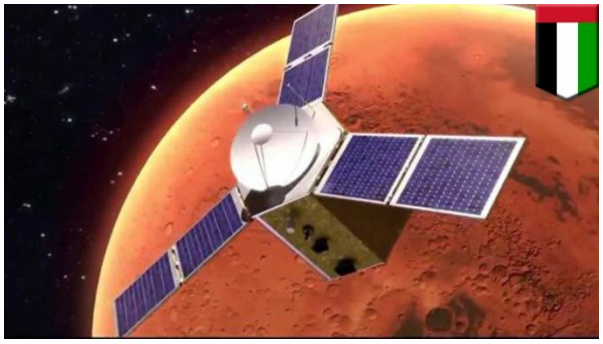
BULGARIA The Bulgarian Radio Club Blagovestnik (LZ1KCP) continues to honour the memory of Orthodox saints during September as LZ595IP. QSOs count towards the All Saints -2020 award. QSL via bureau, LZ1KCP (direct.

VK, AUSTRALIA
The Wireless Institute of Australia has joined the "Stay Home" campaign and be active as VK20HOME until end 2020. The special call is available for use by WIA affiliated clubs and all WIA members. QSL via LoTW.

A60EMM - Emirates Mars Mission

The United Arab Emirates has officially entered the global space exploration race.
This makes the UAE one of only nine countries working to explore Mars.
The probe will start its journey in 2020, and is scheduled to arrive to Mars by 2021, in celebration of the 50th anniversary of the union of the UAE. The planning, management and implementation of the probe project implemented by an Emirati team;

Ops for 2020: Help make history



* A60EMM/1, Op. A61M, QSL: A61BK
* A60EMM/2, Op. A61Q, QSL: EA7FTR
* A60EMM/3, Op. A61FK, QSL: A61BK
* A60EMM/4, Op. A61BK, QSL: A61BK
* A60EMM/5, Op. A61DD, QSL: A92AA
* A60EMM/6, Op. A61QQ, QSL: A61BK
* A60EMM/7, Op. A61FJ, QSL: LZ1YE
* A60EMM/8, Op. A61DL, QSL: A61BK
* A60EMM/9,Op. A61NN, QSL: Direct

https://www.mbrsc.ae/emirates-mars-mission

UPCOMING CONTESTS – SEPTEMBER 2020

Date-Time		Date-Time		Bands	Contest Name	Mode	Exchange	Sponsor's Website
2	1700	2	2000	144	VHF-UHF FT8 Activity Contest	Dig	4-char grid square	ft8activity.eu/index.php/en
2	2000	2	2100	3.5	UKEICC 80-Meter Contest	Ph	4-char grid square	ukeicc.com/80m-rules.php
2	2300	4	2300	3.5-28	G3ZQS Memorial Straight Key Contest	CW	RST, SPC, name, mbr or power	www.fistsna.org
3	1700	3	2100	28	NRAU 10-Meter Activity Contest	CW Ph Dig	RS(T), 6-char grid square	nrau.net/activity-contests
3	1900	3	2100	1.8-50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or power	www.skccgroup.com
5	0000	5	2359	1.8-28	CWOps CW Open	CW	Serial, name	cwops.org/cwops-tests
5	0000	6	2359	3.5-28	All Asian DX Contest, Phone	Ph	RS, 2-digit age	www.jarl.org/English
5	0600	5	0800	7,14	Wake-Up! QRP Sprint	CW	RST, serial, suffix of previous QSO	qrp.ru/contest/wakeup
5	1300	6	0400	1.8-UHF	Colorado QSO Party	CW Ph Dig	Name, CO county or SPC	ppraa.org/coqp
5	1300	6	1259	1.8-28	IARU Region 1 Field Day, SSB	Ph	RST, serial	darc.de/der-club/referate/conteste
5	1300	6	1300	3.5-28	RSGB SSB Field Day	Ph	RS, serial	www.rsgbcc.org/hf
5	1400	6	1400	145	IARU Region 1 145 MHz Contest	CW Ph Dig	RS(T), serial, 6-char grid	iaru-r1.org/on-the-air
5	1600	5	1900	7	AGCW Straight Key Party	CW	RST, serial, class, name,	agcw.org/index.php/en
5	2000	6	2000	3.5	PODXS 070 Club Jay Hudak Memorial 80-Meter Sprint	Dig	RST, SPC	www.podxs070.com
6	1000	6	1400	144	WAB 144 MHz QRO Phone	Ph	RS, serial, WAB square or country	wab.intermip.net
6	1800	7	0300	1.8-UHF	Tennessee QSO Party	CW Ph Dig	RS(T), TN county or SPC	tnqp.org/rules
7	1900	7	2030	3.5	RSGB 80-Meter Autumn Series, SSB	Ph	RS, serial	www.rsgbcc.org/hf
7	2300	8	0300	1.8-50	MI QRP Labor Day CW Sprint	CW	RST, SPC, mbr or power	miqrp.net/contest
8	0100	8	0300	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	arsqrp.blogspot.com
9	1700	9	2000	432	VHF-UHF FT8 Activity Contest	Dig	4-char grid square	ft8activity.eu/index.php/en
12	0000	12	2359	3.5-28	Russian RTTY WW Contest	Dig	RST, oblast or CQ zone	qrz.ru/contest/detail/93
12	0000	13	2359	2.3 GHz +	ARRL EME Contest	CW Ph Dig	Signal report	www.arrl.org/eme-contest
12	0000	13	2359	3.5-28	WAE DX Contest, SSB	Ph	RS, serial	darc.de/der-club/referate/conteste
12	1000	13	1000	1.8-28	SARL Field Day Contest	CW Ph Dig	RS(T), number of xmitrs, category, province or "DX"	www.sarl.org.za
12	1200	13	2359	1.8-50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
12	1400	12	2200	3.5-28	Ohio State Parks on the Air	Ph	Park abbreviation or "OH" or SPC	ospota.org
12	1400	13	2000	1.8-UHF	Texas QSO Party	CW Ph Dig	RS(T), TX county or SPC	www.txqp.net
12	1500	13	0300	3.5-28	Alabama QSO Party	CW Ph	RS(T), AL county or SPC	alabamaqsoparty.org
12	1500	13	0959	3.5-28	Russian Cup Digital Contest	Dig	Serial, 4-char grid square	qrz.ru/contest/detail/86.html
12	1800	14	0300	50 +	ARRL September VHF Contest	CW Ph Dig	4-char grid square	www.arrl.org/september-vhf
13	0000	13	0400	3.5-14	North American Sprint, CW	CW	Other station's call, your call, serial, name, SPC	ncjweb.com
14	0000	14	0200	1.8-28	4 States QRP Group Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or power	www.4sqrp.com
16	1900	16	2030	3.5	RSGB 80-Meter Autumn Series, CW	CW	RST, serial	www.rsgbcc.org/hf
17	0030	17	0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	naqcc.info/contests.html
17	1930	17	2059	3.5	BCC QSO Party	CW Ph Dig	RS(T), T-shirt size	bavarian-contest-club.de/2326
18	2100	18	2359	3.5	AGB NEMIGA Contest	CW Ph Dig	RST, serial, mbr (if any)	ev5agb.com/index_eng.html
19	0000	19	2359	1.8-VHF	FOC QSO Party	CW	RST, name, mbr (if any)	g4foc.org/qsoparty
19	0000	20	2359	1.8-UHF	Collegiate QSO Party	CW Ph Dig	School name, RS(T), operating class	collegiateqsoparty.com
19	0600	20	2359	10 GHz +	ARRL 10 GHz and Up Contest	CW Ph Dig	6-char maidenhead locator	www.arrl.org/10-ghz-up
19	1200	20	0800	50,70, 144,432, 1296	SARL VHF/UHF Digital Contest	Dig	RST, 6-char grid locator	www.sarl.org.za
19	1200	20	1200	3.5-28	Scandinavian Activity Contest, CW	CW	RST, serial	sactest.net/blog
19	1200	20	1200	1.8-28	All Africa International DX Contest	CW Ph Dig	RS(T), serial	www.sarl.org.za
19	1400	20	0200	1.8-UHF	Iowa QSO Party	CW Ph Dig	RS(T), IA county or SPC	www.w0yl.com/IAQP
19	1500	19	2100	1.8-28	QRP Afield	CW Ph Dig	RS(T), SPC, mbr or power	newenglandqrp.org/qrp-afield-2018
19	1600	19	2300	3.5-144	Wisconsin Parks on the Air	Ph	WI park abbreviation or SPC	wipota.com
19	1600	20	0359	3.5-28	New Jersey QSO Party	CW Ph Dig	RS(T), NJ county or SPC	k2td-bcrc.org/njqp
19	1600	20	2200	1.8-UHF	New Hampshire QSO Party	CW Ph Dig	RS(T), NH county or SPC	w1wqm.org/nhqso
19	1600	20	2359	1.8-144	Washington State Salmon Run	CW Ph Dig	RS(T), WA county or SPC	wwdxc.org/salmonrun
19	1800	19	1959	1.8-50	Feld Hell Sprint	Dig	RST, mbr, SPC, grid	sites.google.com/site/feldhellclub
20	0000	20	0400	3.5-14	North American Sprint, RTTY	Dig	Other station's call, your call, serial, name, SPC	ncjweb.com
20	1700	20	2059	3.5-28	BARTG Sprint 75	Dig	Serial	bartg.org.uk
20	2300	21	0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	qrpcontest.com/pigrun
21	1900	21	2300	144	144 MHz Fall Sprint	CW Ph Dig	4-char grid square	svhfs.org
23	0000	23	0200	1.8-28	SKCC Sprint	CW	RST, SPC, name, mbr or power	skccgroup.com
24	1900	24	2030	3.5	RSGB 80-Meter Autumn Series, Data	Dig	RST, serial	rsgbcc.org/hf
26	0000	27	2359	3.5-28	CQ Worldwide DX Contest, RTTY	Dig	RST, CQ zone, US state or VE area (if US/VE)	www.cqwwrtty.com
26	1200	27	1200	1.8-28	Maine QSO Party	CW Ph	RS(T), ME county or SPC	ws1sm.com/MEQP.html
26	1400	26	1800	144, 432	AGCW VHF/UHF Contest	CW	RST, serial, power, 6-char grid	agcw.org/index.php/en
28	1900	28	2030	3.5	RSGB FT4 Contest Series	Dig	4-char grid square	www.rsgbcc.org/hf
29	1900	29	2300	222	222 MHz Fall Sprint	CW Ph Dig	4-char grid square	svhfs.org
30	2000	30	2100	3.5	UKEICC 80-Meter Contest	CW	4-char grid square	ukeicc.com/80m-rules.php

All dates and Times are in UTC and are not adjusted for local time
Mbr = Membership number. Serial = Sequential number of the contact. SPC = State, Province, DXCC Entity. XE = Mexican state.
Listings in blue indicate contests sponsored by ARRL or *NCJ*. The latest time to make a valid contest QSO is the minute listed in the "Finish Time" column. Data for Contest Corral is maintained on the WA7BNM Contest Calendar at **www.contestcalendar.com**

Check for updates and a downloadable PDF version online at www.arrl.org/contests.

RAMBLINGS FROM THE EDITORS DESK

September??? REALY??? How?

So here we are Lockdown 2.0, Not as restricted, but still a total pain in the ****. And this means, No general meeting this month, we did delay 1 week to see if the rules might drop to Level 2, but no, so with a 10 person restriction we just are not able to run a meeting.

Right, now that I have that off my chest, its raises the issue, of how do we manage to keep the club relevant in a world where lockdowns are likely to be a common part of our life for at least 1 more year, maybe longer?

My first thought was that as a radio club, we would simply have meetings on-line, and while there is merit in this, and we most certainly can all contribute to a net, the ability of a guest speaker showing us a new idea or project simply won't work, Even a 30 minute talk would time out any repeater, and simplex would be restrictive for some members

Internet solutions, such as Zoom, Microsoft Teams and Google Meet offer on-line solutions, but some investment in cameras and equipment will be required, but we could get speakers to join us virtually, even if we can meet, but they can't travel, so this has some merits; and some issues too.

Teams and Meet require accounts with Microsoft or Google, while zoom allows viewing in a browser with just an invite and a pass code, Teams has a similar feature, and is possibly the most technically advanced. Zoom is limited to 40 minutes, unless you subscribe, should the club purchase a subscription? Teams and Meet are free and without time limits, but may not be as user friendly.
The Auckland VHF group have just invested in this type of technology, Should we?


https://aucklandvhf.org/category/news/

I have plenty of experience in installing these, as do others in the club, but are we really an internet club?

IRLP, Echolink, DMR, Dstar, and fusion all use the internet to link, so is it really that different? And of course we have the option of a blended solution. Nets do work, and helped us last time; In fact the morning one on 690 seems to still be going, even though many of us have had to return to the daily grind of travel and schedules that compete. So it seems to have connected some more of us. Maybe meetings and Speakers might be able to benefit from the internet meeting solution, while we keep in touch with radio?

There is also potential for the Papakura award to become an even. Maybe with different repeaters being worked at random to make it an on air fox and hounds chase?

How about an HF or VHF simplex fox and hounds game/award/contest where the fox goes on air at a specified time (hour, half hour, or ... some schedule) but has free choice of the frequency. They transmit the challenge for 3 minutes, and we try to chase them? At the end of TX window; they call for check-ins and award points for the contact.

While we have some mobility we can of course chase SOTA, POTA and the likes, and I will soon have the installs finished, and will be back to the parks to activate some, and of course would love to have hunters trying to make the contact, But how do we keep these up if we go back to a strict lockdown?

How do we stay relevant to you?

Another benefit might be in training, even furthering education, and guest speakers.

It's all very fluid, as I think we really need to hear from the club members, we need to know what appeals to you. How do we encourage you to be active hams.

I appreciate that some will not really want to consider this, That we all just want to wait until life returns to normal, But the fact is Normal is just what we know, and right now, there is no timeline for normal.

If we are to survive in the coming years, we need to be better, smarter, faster and more agile, we need to adapt to an changing world. And if along the way we find new ways to enjoy the hobby, Then how much cooler will our future be.

I look forward to your opinions.

On a happier note, Ann-Maree and I have had the pleasure of the arrival of a new grandson Dante, While his arrival was not without challenge, he has met it head on, and is doing great.

This meant living in the new campervan for over 3 weeks, and getting stuck outside of Auckland during the Lockdown. Border Crossings and getting your papers check wasn't something I expected in NZ

It was certainly challenging living in the small space, with just the basics and trying to get some radio going too. We learnt what worked, what didn't and got used to dump stations and finding portable water, but all in we nailed it.

Two items of hardware in the camper had faults, and I contacted the company we purchased it from, expecting maybe some advise, but I'm pleased to say, Both items were replaced, and we could not be more impressed, So thank you Apollo campers. I had hoped for a couple of weekend to install some equipment, but instead we had to do the run early, and nothing was ready.

In spite of this we managed to get VHF and Mobile HF installed. And made a few contacts. Not that they worked to well at the base of the Hakarimata hills in Ngaruawahia, They may be scenic, but definitely not RF friendly, Too close for the skip zone, and too far away for the ground wave. But we found a place in Huntly where we could reach the repeater, eventually, and relieved Richard, who had been covering the nets and meeting, Thanks Richard. I owe you.

Did I mention the Cold, Morning Fogs, and temperatures of -2? These may look pretty, but they are definitely colder than I'm used to.

Multiple different HF antennas were trialled, but the most successful turned out to be a non resonant end fed long wire, and while there I managed to obtain an 8 metre fibreglass pole that breaks down into 5 sections, and after some creativity with mounts, we have a plan for the camper, which gives us both mobile HF that we can use anywhere without setup, and a (hopefully) quick to assemble portable base station if we feel the need to work with a bit more grunt.

The 4.5 metre pole for VHF/UHF is also packed, and ready to put up when required.

This should make the camper a perfect Parks on the Air (POTA) activation station, so as the summer months make getting out and about more inviting listen out for us on the air as we try and activate a few parks.

Should be fun, and hopefully give me some more stories to add to the newsletter.

Anyway I hope there is something in here for everyone, unless you ant recipes to bake, I am out of recipes. But we have some projects, and cool updates to projects, some science news stuff, a new satellite repeater to chase, some upcoming sales ... If they don't move again, and details on an exciting new class of amateur radio licence that could potentially change everything you know about amateur radio.

Now I just have to decide whether to go to the Hamilton sale, or the Hamilton Motor home show, which now are clashes in the calendar.

And until we again meet face to face, Take care, Keep yourself safe, and don't judge others who are too tired to be worried too much, we all react to this type of stress differently

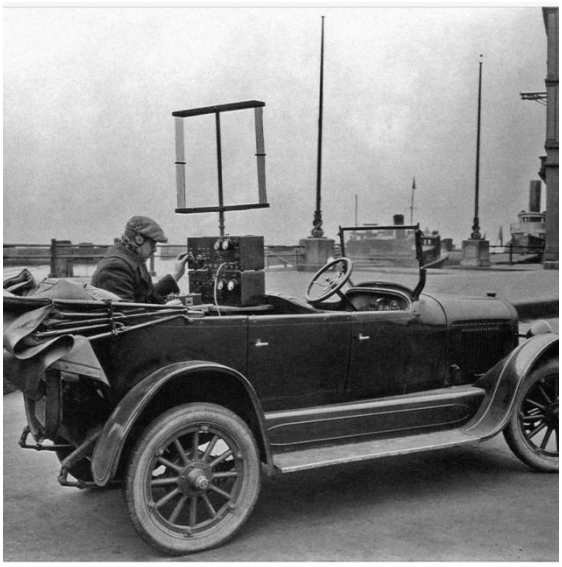
So take responsibility for your own actions, and safety, and try to make the most of every day

Hope to hear some of you on the nets or about the bands, and always, do let us all know what you're up to and what you think we should do to be the best, most relevant Radio club.

There's always space in the newsletter for you and your activities to inspire others.

Till Then 73 from ZL1NUX

V



WE'VE COME A LONG WAY IN MOBILE RADIO

1960 → 2020

PC POWER SUPPLY TO BENCH (HAM SHACK) POWER SUPPLY

During the last few months while at home looking for things to do, a few years ago with the help of Rob ZL1RJS we did an “ATX” power supply. While trawling the internet found a design to finish off the project. Printed the case and assembled it. The meters came from China , 3 for about $10.

Everything seems to work ok and looks better than just a tin box with a few connectors.

Have printed lots of other things but this is the only one with any connection with radio.

Have modified the printer quite a bit since I got it and goes really well for something that was relatively cheap. It has been a steep learning curve for me and know a lot more now than 6 months ago .

Jack ZL1IJ

Thanks Jack,

Great reminder of a good project, so we have re-created it here, with help from Rob ZL1RJS

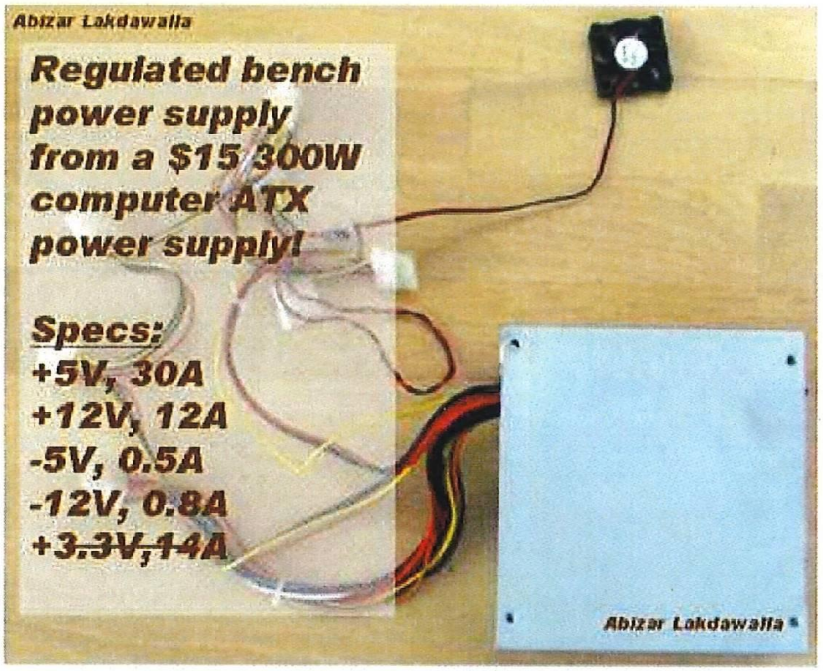
I hope it might motive someone else to have a go. A great project for lockdowns, I think I will try one.

How to Convert a Computer ATX Power Supply to a Lab Power Supply

Computer power supplies cost around US$30, but lab power supplies can run you $100 or more! By converting the cheap (free) ATX power supplies that can be found in any discarded computer, you can get a phenomenal lab power supply with huge current outputs, short circuit protection, and reasonably tight voltage regulation on the 5V line.

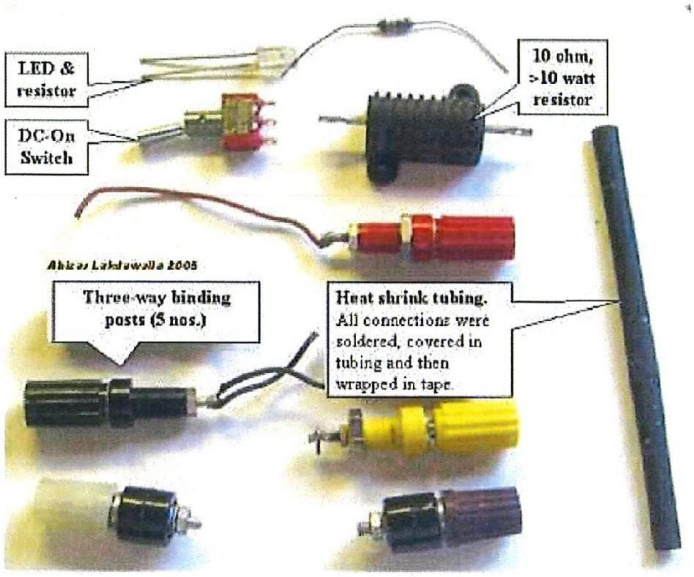
On most power supply units (PSUs), the other lines are unregulated.

WARNING: OPENING A POWER SUPPLY CAN KILL YOU. USE EXTREME CAUTION INSIDE THE CASE. THE CAPACITORS TYPICALLY STORE 300 VOLTS DC. AVOID TOUCHING IN ANY WAY!

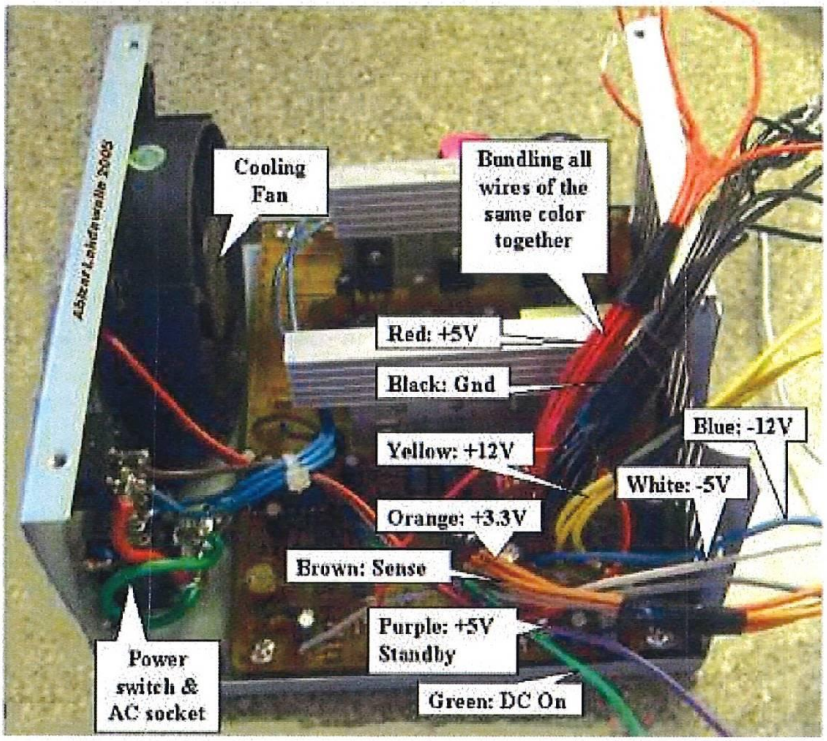


1. Look online or at your local computer store for an ATX computer power supply, or dismantle an old computer and remove the power supply from the case.
2. Unplug the power cable from the power supply and turn off the switch on the back (if there is one). Also, be sure you are grounded so that you don't introduce any static electricity and fry everything.
3. Remove the screws that attach the power supply to the computer case and remove the power supply.
4. Cut off the connectors (leave a few inches of wire on the connectors so that you can use them later on for other projects).
5. Discharge the power supply by letting it sit unconnected for a few days. Some people suggest attaching a 10 ohm resistor between a black and red wire (from the power cables on the output side), however this is only guaranteed to drain the low voltage capacitors on the output - which aren't dangerous to begin with! It could leave the high-voltage capacitors charged, resulting in a potentially dangerous - or even lethal - situation.
6. Gather the parts you need: binding posts (terminals), a LED with a current-limiting resistor, a switch (optional), a power resistor (10 ohm, 10W or greater wattage, see

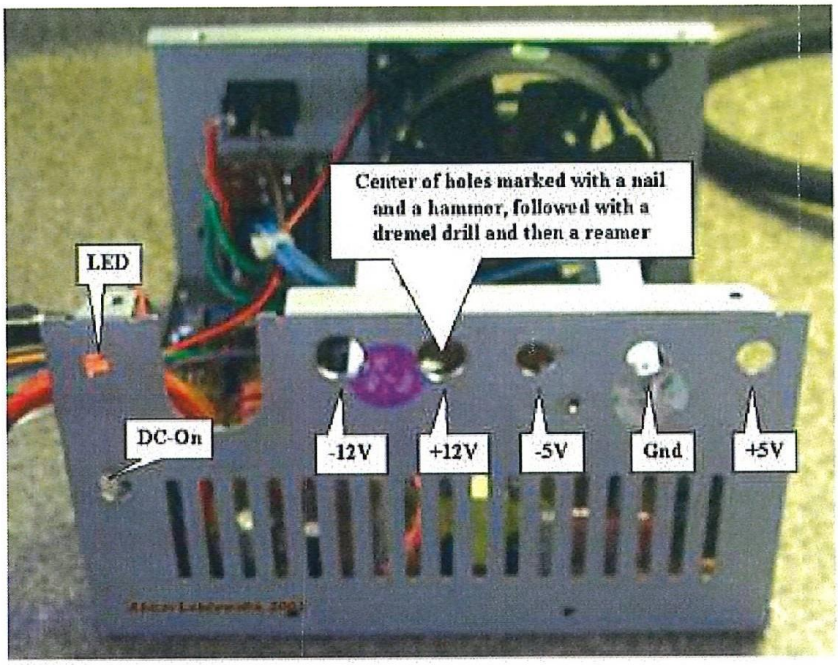
Tips), and heat shrink tubing.

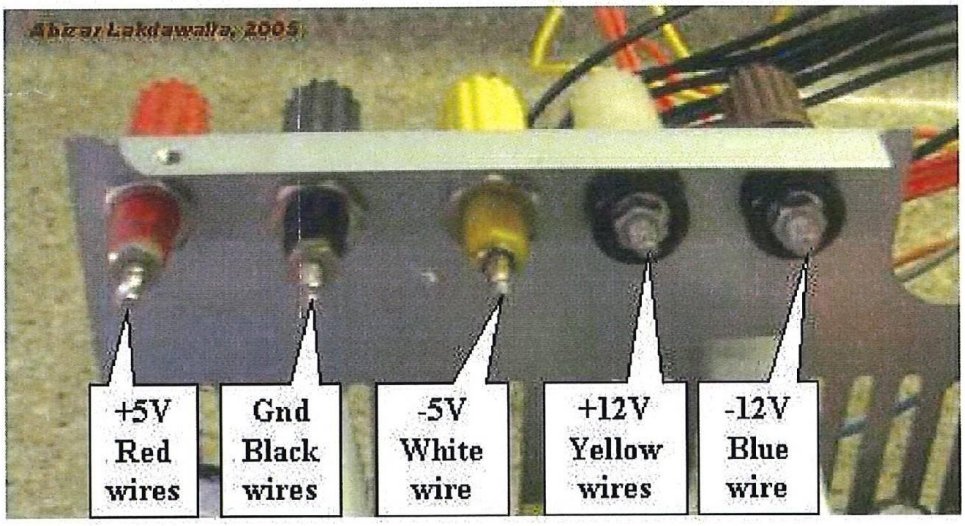


7. Open up the power supply unit by removing the screws connecting the top and the bottom of the PSU case.
8. Bundle wires of the same colours together. If you have wires not listed here (brown, etc), see the Tips. The color code for the wires is: Red = +5V, Black = Ground (0V), White = -5V, Yellow = +12V, Blue = -12V, Orange = +3.3V, Purple = +5V Standby (not used), Gray = power is on (output), and Green = PS_ON# (turn DC on by shorting to ground).

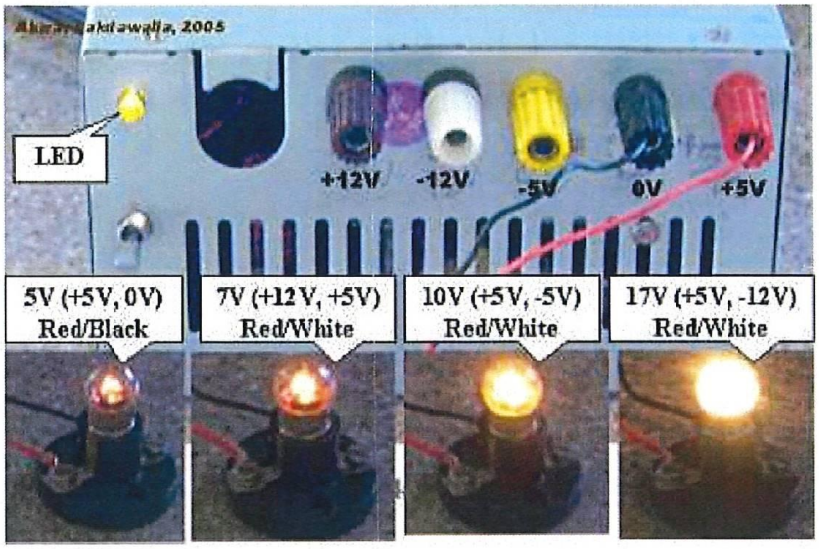


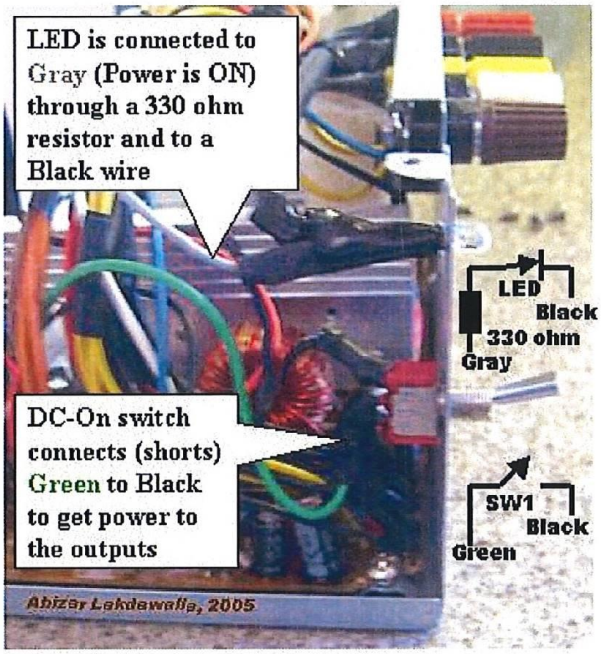
9. Drill holes in a free area of the power supply case by marking the center of the holes with a nail and a tap from the hammer. Use a Dremel to drill the starting holes followed by a hand reamer to enlarge the holes until they are the right size by test fitting the binding posts. Also, drill holes for the power ON LED and a Power switch (optional).





10. Screw the binding posts into their corresponding holes and attach the nut on the back. (as above)
11. Connect all the pieces together.
    - Connect one of the red wires to the power resistor, all the remaining red wires to the red binding posts;
    - Connect one of the black wires to the other end of the power resistor, one black wire to the cathode (shorter lead) of the LED, one black wire to the DC-On switch, all the remaining black wires to the black binding post;
    - Connect the white to the -5V binding post, yellow to the +12V binding post, the blue to the -12V binding post, the gray to a resistor (330 ohm) and attach it to the anode (longer lead) of the LED;
    - Note that some power supplies may have either a gray or brown wire to represent "power good"/"power ok". (Most PSU's have a smaller orange wire that is used for sensing-- 3.3V- and this wire is usually paired at the connector to another orange wire. Make sure this wire is connected to the other orange wires, otherwise your lab power supply won't stay on.) This wire should be connected to either an orange wire (+3.3V) or a red wire (+5V) for the power supply to function. When in doubt, try the lower voltage first (+3.3V). If a power supply is non ATX or AT compliant, it may have its own colour scheme. If yours looks different that the pictures shown here, make sure you reference the position of the wires attached to the AT/ATX connector rather than the colours.
    - Connect the green wire to the other terminal on the switch.
    - Make sure that the soldered ends are insulated in heat shrink tubing.
    - Organize the wires with a electrical tape or zip-ties.
12. Check for loose connections by gently tugging on them. Inspect for bare wire, and cover it to prevent a short circuit. Put a drop of super-glue to stick the LED to its hole. Put the cover back on.



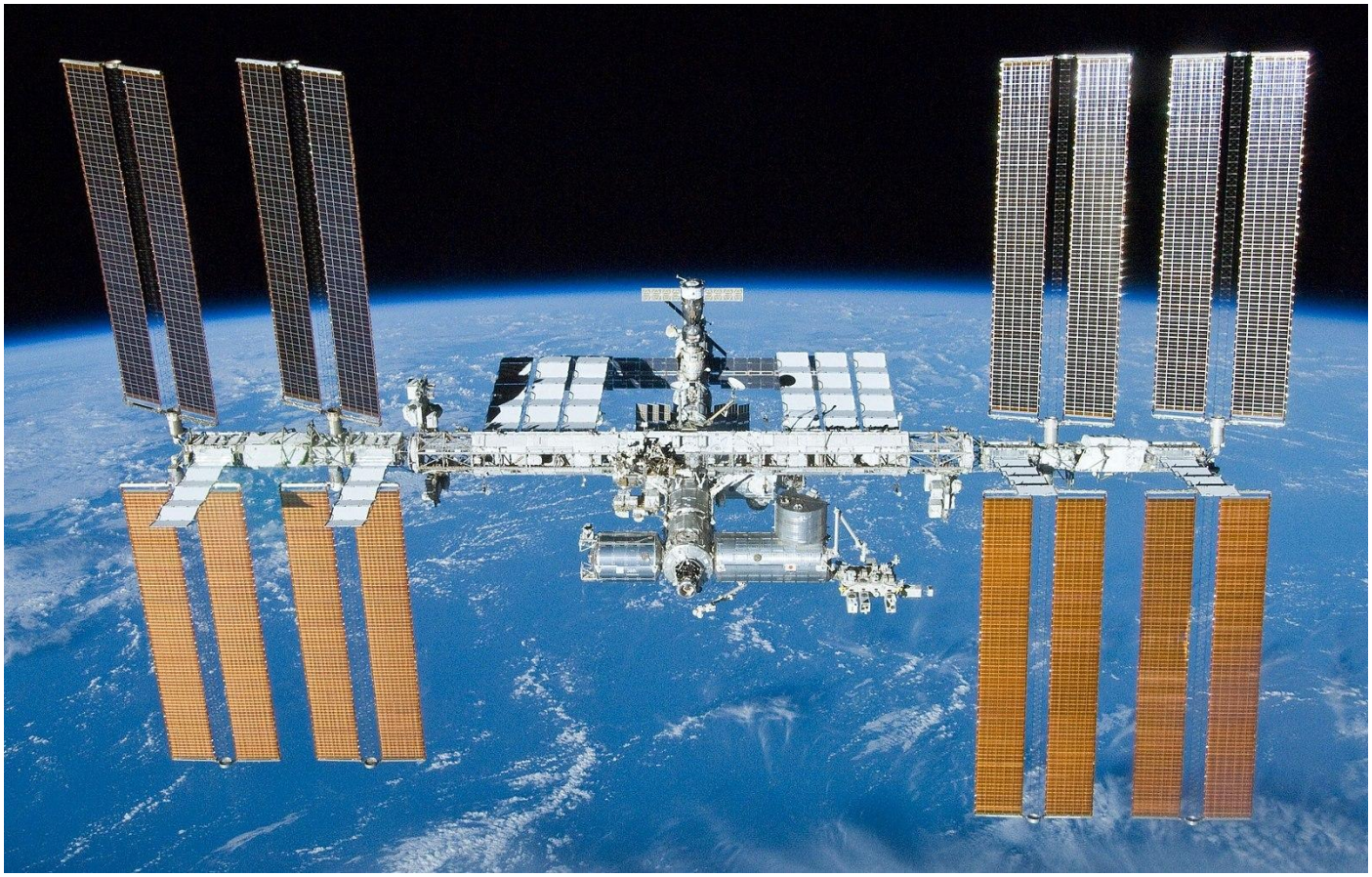


13. Plug the power cable into the back of the power supply and into an AC socket. Flip the main cut off switch on the PSU if there is one. Check to see if the LED light comes on. If it has not, then power up by flipping the switch you placed on the front. Plug in a 12V bulb into the different sockets to see if the PSU works, also check with a digital voltmeter. Make sure you do not short any wires out. It should look good and work like a charm!

Thanks Rob for the information; I'm sure some of us have an old power supply floating around. With 12 Amps, these might even make a solution for some of the surplus 2 metre FM rigs I have floating around here, and we might get a few more operators on air.

BTW if anyone needs a 2 metre rig, Shout out, I have some commercial radios here that would welcome a good home.

ISS HAS A NEW HAM STATION



Thanks to the efforts of the ARISS Team, ham radio operators have a new toy to play with. The image on the right is the new IORS hardware complete with its dual band Kenwood radio

The InterOperable Radio System (IORS) is a space modified Kenwood D710GA transceiver, and an ARISS developed power supply.

The access information is:
Mode: FM Voice
Uplink Frequency: 145.990 MHz CTCSS PL Tone = 67.0 Hz
Downlink Frequency: 437.800 MHz

As the radio is a cross-band repeater, as well as APRS digpeater and SSTV system, it may not always be in cross-band repeater mode.

Check amsat.org/status for up to the minute reports on the mode

Maybe it's time to build a UHF/VHF Yagi for satellite use for one of the project nights, and hunt the ISS

Their press release is as follows:

First Element of ARISS Next Generation (Next-Gen) Radio System Installed in ISS Columbus Module

September 2, 2020—The ARISS team is pleased to announce that set up and installation of the first element of our next generation radio system was completed and amateur radio operations with it are now underway. This first element, dubbed the InterOperable Radio System (IORS), was installed in the International Space Station Columbus module. The IORS replaces the Ericsson radio system and packet module that were originally certified for spaceflight on July 26, 2000.

Initial operation of the new radio system is in FM cross band repeater mode using an uplink frequency of 145.99 MHz with an access tone of 67 Hz and a downlink frequency of 437.800 MHz. System activation was first observed at 01:02 UTC on September 2. Special operations will continue to be announced.

The IORS was launched from Kennedy Space Center on March 6, 2020 on board the SpaceX CRS-20 resupply mission. It consists of a special, space-modified JVC Kenwood D710GA transceiver, an ARISS developed multi-voltage power supply and interconnecting cables. The design, development, fabrication, testing, and launch of the first IORS was an incredible five-year engineering achievement accomplished by the ARISS hardware volunteer team. It will enable new, exciting capabilities for ham radio operators, students, and the general public. Capabilities include a higher power radio, voice repeater, digital packet radio (APRS) capabilities and a Kenwood VC-H1 slow scan television (SSTV) system.

A second IORS undergoes flight certification and will be launched later for installation in the Russian Service module. This second system enables dual, simultaneous operations, (e.g. voice repeater and APRS packet), providing diverse opportunities for radio amateurs. It also provides on-orbit redundancy to ensure continuous operations in the event of an IORS component failure.

Next-gen development efforts continue. For the IORS, parts are being procured and a total of ten systems are being fabricated to support flight, additional flight spares, ground testing and astronaut training. Follow-on next generation radio system elements include an L-band repeater uplink capability, currently in development, and a flight Raspberry-Pi, dubbed “ARISS-Pi,” that is just beginning the design phase. The ARISS-Pi promises operations autonomy and enhanced SSTV operations.

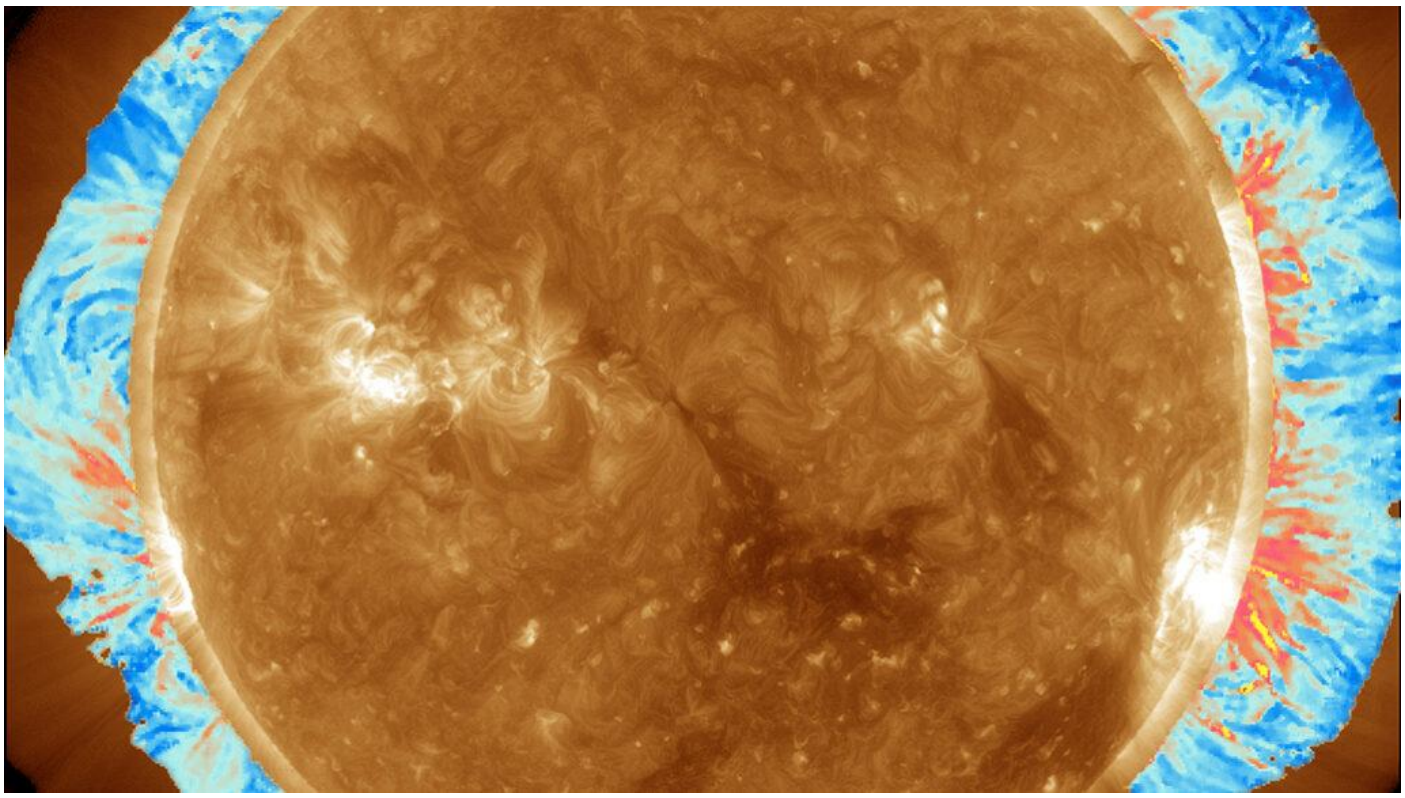
ARISS is run almost entirely by volunteers, and with the help of generous contributions from ARISS sponsors and individuals. Donations to the ARISS program for next generation hardware developments, operations, education, and administration are welcome -- please go to https://www.ariss.org/donate.html to contribute to these efforts.

GEEKY RADIO NEWS

SOLAR CYCLE 25 SLOW BUT STEADY

With solar flux sitting in a constant low 70's, it's hardly news, but the slow climb out of solar minimum continues, with propagation sitting in the marginal but its better than the 60's of last year, and it starting to show, It was nice to have some daytime 20 metre contacts, and catch up with some friends. While the sun remains mostly spotless, with only on e or 2 sunspots at best, the coronal holes and odd flare still make its interesting, and the steady climb of flux points to some good DX in the coming years.

CHECK OUT THE FIRST-EVER MAP OF THE SOLAR CORONA'S MAGNETIC FIELD



The sun's wispy upper atmosphere, called the corona, is an ever-changing jungle of sizzling plasma. But mapping the strength of the magnetic fields that largely control that behavior has proved elusive. The fields are weak and the brightness of the sun outshines its corona.

Now though, observations taken using a specialized instrument called a coronagraph to block out the sun's bright disk have allowed solar physicists to measure the speed and intensity of waves rippling through coronal plasma.

The corona's magnetic field strength is mostly between 1 and 4 gauss, a few times the strength of the Earth's magnetic field at the planet's surface, the researchers report in the Aug. 7 *Science Magazine*.

In 2017, Steve Tomczyk had been part of a team that took advantage of a total solar eclipse crisscrossing North America to take measurements of the corona's magnetic field; He trekked to a mountaintop in Wyoming with a special camera to snap polarized pictures of the corona just as the moon blocked the sun.

Making a map is a big step, the team says. But what solar physicists would really like to do is track the corona's magnetic field continuously, at least once a day.

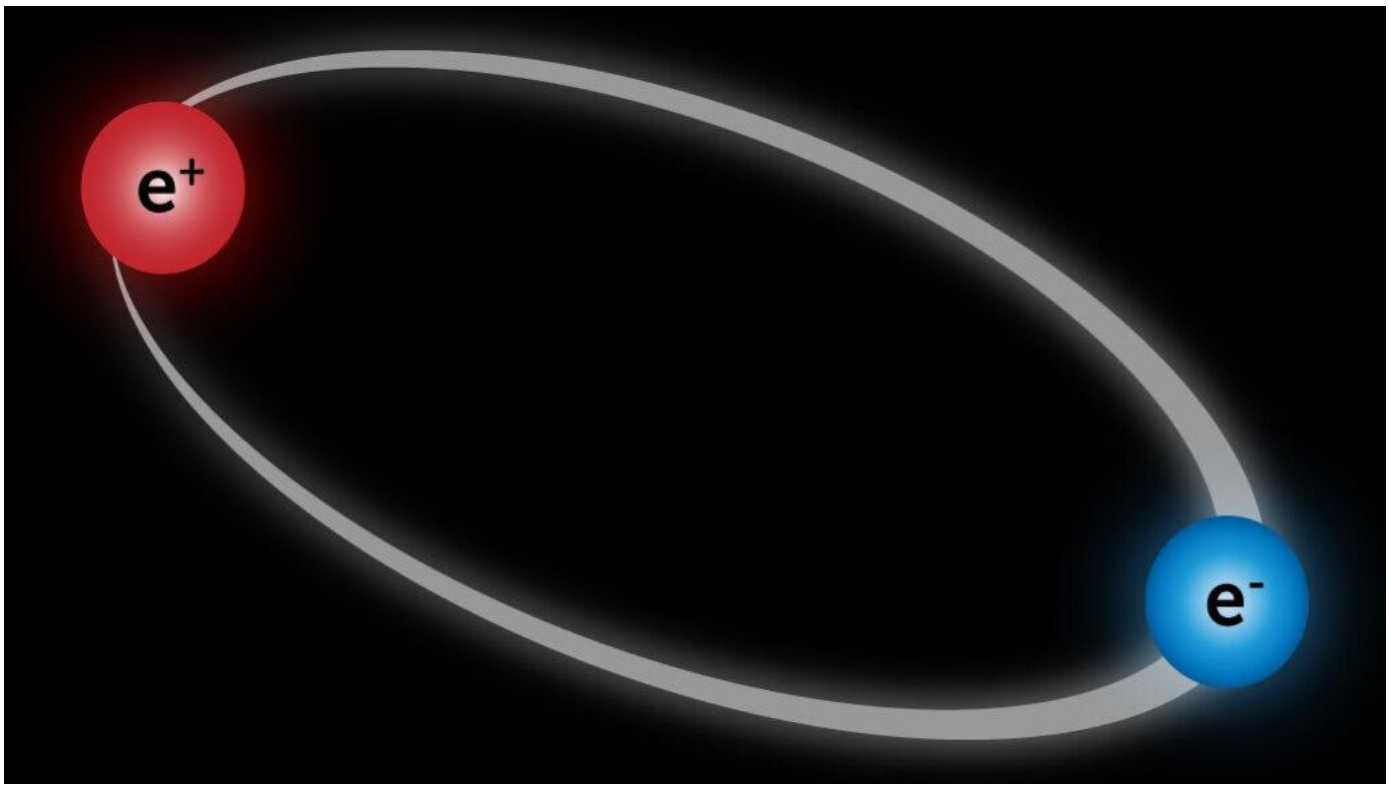
Measuring the strength of the corona's magnetic field is "a really big deal," says solar physicist Jenna Samra of the Smithsonian Astrophysical Observatory in Cambridge, Mass. "Making global maps of the coronal magnetic field strength … is what's going to allow us to eventually get better predictions of space weather events," she says. "This is a really nice step in that direction."

A MEASUREMENT OF POSITRONIUM'S ENERGY LEVELS CONFOUNDS SCIENTISTS

Positronium is positively puzzling.

A new measurement of the exotic "atom" — consisting of an electron and its antiparticle, a positron — disagrees with theoretical calculations, scientists report in the Aug. 14 *Physical Review Letters*. And physicists are at a loss to explain it.

A flaw in either the calculations or the experiment seems unlikely, researchers say. And new phenomena, such as undiscovered particles, also don't provide an easy answer, adds theoretical physicist Jesús Pérez Ríos of the Fritz Haber Institute of the Max Planck Society in Berlin. "Right now, the best I can tell you is, we don't know," says Pérez Ríos, who was not involved with the new research.



Positronium is composed of an electron, with a negative charge, circling in orbit with a positron, with a positive charge — making what's effectively an atom without a nucleus. With just two particles and free from the complexities of a nucleus, positronium is appealingly simple. Its simplicity means it can be used to precisely test the theory of quantum electrodynamics, which explains how electrically charged particles interact.

A team of physicists from University College London measured the separation between two specific energy levels of positronium, what's known as its fine structure. The researchers formed positronium by colliding a beam of positrons with a target, where they met up with electrons. After manipulating the positronium atoms with a laser to put them in the appropriate energy level, the team hit them with microwave radiation to induce some of them to jump to another energy level.

The researchers pinpointed the frequency of radiation needed to make the atoms take the leap, which is equivalent to finding the size of the gap between the energy levels. While the frequency predicted from calculations was about 18,498 megahertz, the researchers measured about 18,501 megahertz, a difference of about 0.02 percent. Given that the estimated experimental error was only about 0.003 percent, that's a wide gap.

The team searched for experimental issues that could explain the result, but came up empty. Additional experiments are now needed to help investigate the mismatch, says physicist Akira Ishida of the University of Tokyo, who was not involved with the study. "If there is still significant discrepancy after further precise measurements, the situation becomes much more exciting."

That leaves scientists still searching for an answer, says physicist David Cassidy, a coauthor of the study. "It's going to be something surprising. I just don't know what."

QUANTUM COMPUTERS GET WARMER, BUT THEY STILL HAVE A BIG PROBLEM TO SOLVE

If you have watched the news, you no doubt know that quantum computing is set to change the world; Even Google is working on quantum computing and the "Quantum Internet". Breakthroughs indeed; But reality may be different from the hype

Computers that harness quantum physics could trump standard computers on certain types of calculations. But the machines typically work only at temperatures tiny fractions of a degree above absolute zero. Now, two teams of physicists report that they've created silicon-based quantum computers that work under warmer conditions.

Current quantum computers top out at around 50 quantum bits, but scientists expect quantum computers will need millions of these qubits to perform some tasks. So scientists are working to scale them up.

Simplifying the cooling process could help the computers grow. That's because extremely cold quantum computers have an additional complication. The electronic components required to control the qubits don't work under such chilly conditions, and need to be kept in a warmer location and connected to the quantum chip with wiring. That wiring would become unreasonably complex as quantum computers scale up. But with quantum computers that operate at these warmer temperatures, the qubits and electronics could be joined together, akin to the integrated circuits that helped make conventional computers increasingly powerful and ubiquitous.

But to live up to the Hype, They must overcome a big problem – Errors

Astronaut John Glenn was wary about trusting a computer.

It was 1962, early in the computer age, and a room-sized machine had calculated the flight path for his upcoming orbit of Earth — the first for an American. But Glenn wasn't willing to entrust his life to a newfangled machine that might make a mistake.

The astronaut requested that mathematician Katherine Johnson double-check the computer's numbers, as recounted in the book *Hidden Figures*. "If she says they're good," Glenn reportedly said, "then I'm ready to go." Johnson determined that the computer, an IBM 7090, was correct, and Glenn's voyage became a celebrated milestone of spaceflight

A computer that is even slightly error-prone can doom a calculation. Imagine a computer with 99 percent accuracy. Most of the time the computer tells you 1+1=2. But once every 100 calculations, it flubs: 1+1=3. Now, multiply that error rate by the billions or trillions of calculations per second possible in a typical modern computer. For complex computations, a small probability for error can quickly generate a nonsense answer. If NASA had been relying on a computer that glitchy, Glenn would have been right to be anxious.

Current versions of quantum computers are relatively wimpy, but with improvements, they have the potential to search enormous databases at lightning speed, or quickly factor huge numbers that would take a normal computer longer than the age of the universe. The machines could calculate the properties of intricate molecules or unlock the secrets of complicated chemical reactions. That kind of power could speed up the discovery of lifesaving drugs or help slash energy requirements for intensive industrial processes such as fertilizer production.

But there's a catch: Unlike today's reliable conventional computers, quantum computers must grapple with major error woes. And the quantum calculations scientists envision are complex enough to be impossible to redo by hand, as Johnson did for Glenn's ambitious flight.

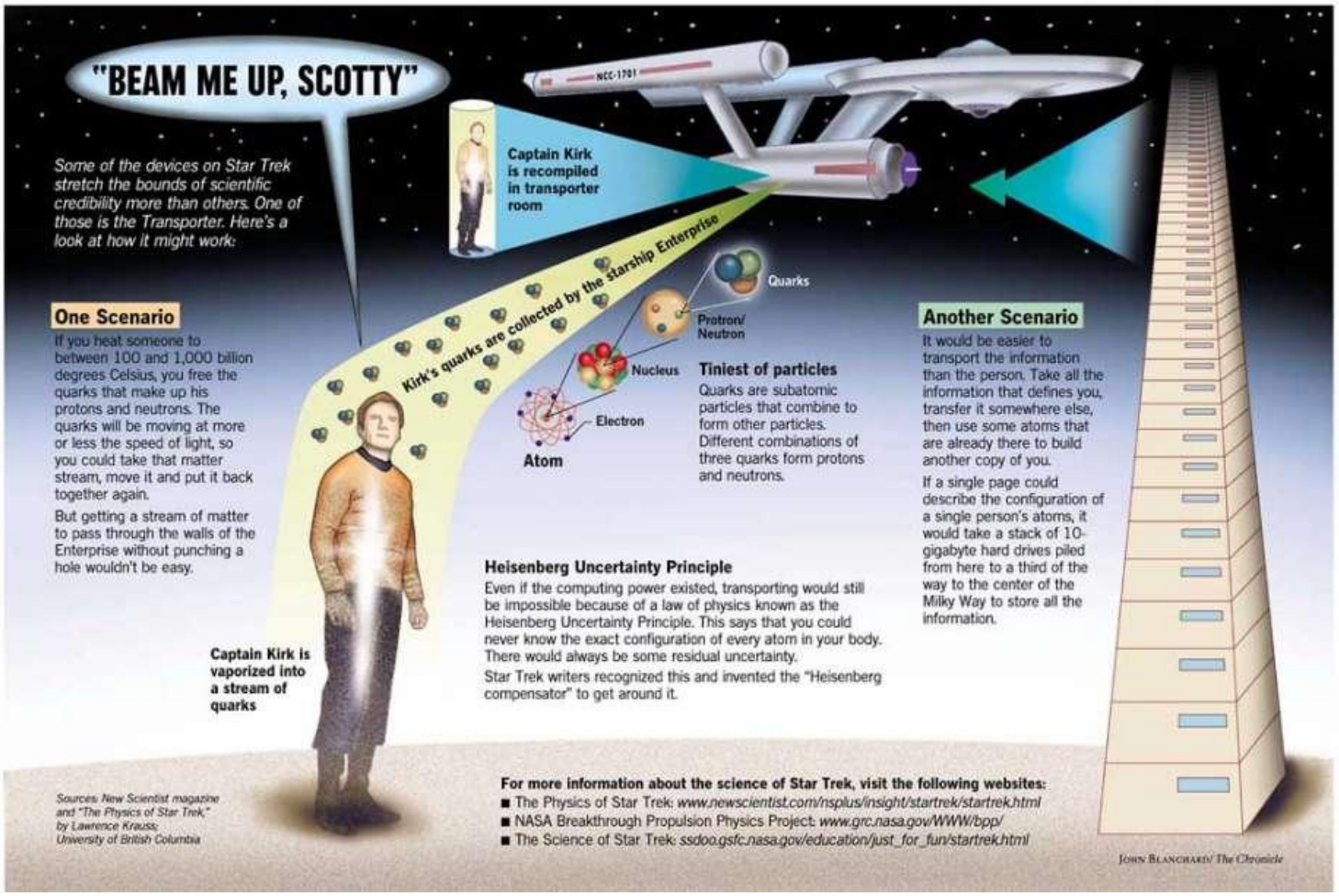
If errors aren't brought under control, scientists' high hopes for quantum computers could come crashing down to Earth.

Before quantum computers can reach their much-hyped potential, scientists will need to master new tactics for fixing errors, an area of research called quantum error correction. The idea behind many of these schemes is to combine multiple error-prone qubits to form one more reliable qubit. The technique battles what seems to be a natural tendency of the universe — quantum things eventually lose their quantumness through interactions with their surroundings, a relentless process known as decoherence.

"It's like fighting erosion," says Ken Brown, a quantum engineer at Duke University. But quantum error correction provides a way to control the seemingly uncontrollable.

For error correction to work, the original, physical qubits must stay below a certain level of flakiness, called a threshold. Above this critical number, "error correction" may make life worse. Different error-correction schemes have different thresholds. One reason the surface code is so popular is that it has a high threshold for error. It can tolerate relatively fallible qubits. Imagine you're really bad at arithmetic. To sum up a sequence of numbers, you might try adding them up several times, and picking the result that came up most often.

But let's say you do the calculation three times, and two out of three of your calculations agree. You'd assume the correct solution was the one that came up twice. But what if you were so error-prone that you accidentally picked the one that didn't agree? Trying to correct your errors could then do more harm than good. It seem like Star Trek was right, We need the Heisenberg Compensators after all. No wonder Bones hated the Transporter



CANADA LEADS WITH NEW LICENSE CLASS – SHOULD NZ FOLLOW?

Canadian Amateur Radio operators will be excited to hear that a new class of license will be available starting September 1, 2020: the Quiet Radio Transmitter or "QRT" license. To qualify for this license you need to simply agree to never transmit.

A 2019 study found that 73% of hams never transmit. Most interestingly, the study found a third of those not only don't want to transmit, but object to others transmitting, preferring to have silence for hours, if not days on end. As one survey respondent said, "We invested over $1000 in equipment to setup our club's repeater and yet people think they can just use it as if this were a hobby. It is really bothersome to hear someone looking for a QSO. It only encourages others to join in and, before you know it, everyone's on the air disturbing the peace and quiet."

Responding to the survey's results, commercial interests proposed the QRT license be created. During the consultation period no-one from the ham community spoke up, confirming that the license was a perfect match to the needs of many hams. One exception was a special interest group who requested an endorsement be created allowing for frequent short transmissions, such as kerchunking of repeaters (provided you never say your call sign) or dialling DTMF to turn off a link.

A second endorsement was also agreed to after a letter was received from a meeting held at Tim Hortons requesting that some QRT licensees should be able to say, "That's not real ham radio" whenever someone is talking about new technology.

A third endorsement, the "stuck microphone with road noise" was not adopted as this was agreed to be a form of lengthy transmission, something that was in opposition to the spirit of the new license.

Hearing the news, a local Amateur instructor and examiner said, "This really is a game changer. The QRT license can be earned in a single day, except for the kerchunking endorsement which can take an extra day to practice using a test repeater we have setup in the classroom. Mind you, some people think the extra day is worth it as you can earn a new 'Kerchunked All Repeaters' KAR award in as little as 24 hours using just a simple handheld radio."

Commercial interests across the country are welcoming the arrival of the QRT license. Speaking at a spectrum auction, an industry representative said, "This really speeds up the process of taking back our VHF and UHF spectrum from the Ham community. As people see the benefits of a QRT license such as no antennas, longer battery life, and no RFI, they will quickly see that it makes sense to hand over the spectrum to us so more kids can send emoticons to each other instead of wasting their time experimenting with electronics."

Is your license a QRT license? Perhaps consider upgrading.

de VE7NZ Adrian

Thanks to Adrian VE7NZ for allowing me to reprint this very though provoking "story"and Jack ZL1IJ for bringing to my attention

Fake news maybe – But food for thought definitely. Done any good "kerchunking" lately

The POSTPONED Annual Market Day will now be held on

3rd October 2020

At Gordonton Hall
1024 Gordonton Rd (SH 1B)

Selling starts at 10 am
Venue opens 8 am
Free entry for Buyers

Table Space: $20.00 per space pre-paid
$25.00 per space on the day

Food and Refreshments Available on site.

Registration form available on website
Web site: http://www.zl1ux.org.nz/market_day.html
Email: harcmday@nzart.org.nz
Postal: PO Box 606, Waikato Mail Center, Hamilton 3240

FAST CHARGERS — GRAHAM ZL1AUG

Have you heard of "fast" chargers?

They're hot right now, pardon the pun, advertised as a solution that can help you charge your devices in less than half the time a normal charger would take.

And if that sounds too good to be true? It's because it may be.

Many "fast" chargers aren't fast at all, it's merely a marketing gimmick to entice you to buy. In order to know if they're actually a fast charger, you need to check the output current to see if it's far above a standard charger output.

But more importantly, true ultra fast chargers are bad for lithium-ion batteries, i.e. the ones you most likely have in your devices.

Because they offer a surge of energy, they can actually cause your battery to overheat, diminishing the amount of charge it can hold over time and potentially causing your battery to "burn out" with repeated use.

The better solution is to just get a regular charger and charge your battery at regular, shortened intervals to get the maximum amount of power out of your battery in the long-term.

FROM THE NZ QRPERS GROUP.

We use 3.690 MHz for our daily calling frequency and our Thursday night Net. 3.690 MHz is an IARU dedicated QRP frequency and is in the Region 3 Band plan. Can ZL hams please consider this, and at the very least, check the frequency is not in use before transmitting.

Wayne Jacobsen ZL2OZ
NZ QRPers Group

TARANAKI JUNK SALE

New Plymouth Branch 27 will be hosting their annual Junk Sale on Saturday 26 September 2020. The venue once again is Mangorei Memorial Hall, corner Kent Road and State Highway 3, New Plymouth.

Buyers will be admitted to the hall at 10:00 am, sellers from 8:00 am.

Tables are available for $20 each. To book yours, contact <secretary@zl2ab.com>

We plan to provide light refreshments for sale before and during the event.

This year, it coincides with the start of the Taranaki Award which runs from 26-30 September 2020. Club Station ZL2AB will monitor the local 720 repeaters and National System from the event, with every QSO worth 3 points towards the required 25.

The hall is adjacent to Taranaki Aviation Transport and Technology Museum (TATATM). This is well worth a visit and has a good display for the radio enthusiast among many other items.

Further details of both the Junk Sale and the Taranaki Award can be found on the zl2ab.com website or by contacting Doug (ZL3DUG) on <secretary@zl2ab.com>

SOME NETS – FOR WHEN YOU ARE LOOKING FOR COMPANY

Day	Time (Local)	Freq (MHz)	Group
Sunday	08:00	3.750	Southern Net
	09:00	3.700	Bch 10. Franklin.
	09:00	3.755	Bch 65. Papakura.
	16:00	7.125	SPAM Net (AM Mode)
	19:00	146.625	YL Net
	20:00	3.710	Bch 42. Titahi Bay
	21:30	3.595	Duran WIA Net.
	21:30	3.595	VK2WI
Monday	19:30	3.757	Bch 12. Hamilton
	20.00	3.540	CW Practice Net
updated	20:00	3.605	Br 80. Hibiscus Coast
updated	20:00	Nat System	W.A.R.O
	20:30	3.870	O.T.C (Old Timers Club)
Tuesday	09:00	7.096	Ex Post Office Techs
	21:00	1.850	160m Net _ Ron ZL4JMF
	19:30	3.690	QRP ZL2BH
	20:00	3.581	CW improvers Net
Wednesday	20:00	3.660	Geek Net
	20:00	3.645	Bch 02. Auckland
	20:00	3.745	Bch 84. Bay of Islands
	20:30	146.525	W.R.S.C
Thursday	09:00	7.096	Ex Post Office Techs
	19:30	3.690	QRP ZL2BH
	20:00	3.540	CW Practice Net
	20:00	3.615	Bch 89. REG
	20:30	3.696	ZL1OA
	20:30	3.666	LF Net ZL2CA
	20:00	3.690	ZL QRP SSB Net
Friday	20:00	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
	19:30	3.650	Christian Fellowship
	20:00	3.760	???
	20:30	3.600	Ch 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
	17:30	14.183	ANZA DX Net
	18:00	7.115	VK7OB
	19:30	3.720	ZL1MO
	18:30	3.766	ZL3LE
	08:30/20:00	3.730	ZL3RP
	20:30	3.725	ZL2HN / ZL4RF
	21:00	3.677	Counties Net ZL2MA

This is designed to be a living list, Please update whenever you are able:

Also: Calling Frequencies:
Courtesy of Murray ZL1BPU

Daily	Sunset-Sunrise	3580 USB	NZ FSQCall
Daily	Sunrise-Sunset	7105 USB	NZ FSQCall
Daily	24/7	7104 USB	International FSQCall

I'm told the last of these sees some amazing DX, especially around sunset.

Papakura Radio Club Inc.
Branch 65 NZART Club Directory 2017
Wellington Park, 1 Great South Road.
PO BOX 72-397 Papakura 2244
PHONE 09 296 5244
Westpac 03-0399-0019896-00
Club website: http://www.qsl.net/zl1vk
Club email: zl1vk.club@gmail.com

Elected Officers				
President	ZL1NUX	Gavin Denby	Ph 09 299 3415	021 1046946
Vice President	ZL1BNQ	Richard Gamble	Ph 09 5371238	021 729270
Secretary	ZL1AOX	Ian Ashley	Ph 09 2981810	021 1981810
Treasurer	ZL1MR	David Wilkins	Ph 09 2999346	021 1857903
Committee	ZL1RJS	Rob Stokes	Ph 09 2961152	021 307005
	ZL1IRC	Ian Clifford	Ph	021 8248400
	ZL1ASN	Rolly Adams	Ph 09 2966107	021 0427760
	ZL1DK	David Karrasch	Ph 09 296 8264	021 560180
	ZL1RIC	Ricky Hodge		021 666421
AREC Section Leader	ZL1BNQ	Richard Gamble	Ph 09 5371238	021 729270
CD Liaison	ZL1AOX	Ian Ashley	Ph 09 2981810	021 1981810
Newsletter Editor	ZL1NUX	Gavin Denby	Ph 09 299 3415	021 459 192
Hall Custodian	ZL1AOX	Ian Ashley	Ph 09 2981810	021 1981810
Newsletter.	Contact: zl1nux@outlook.com			

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

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

Subscription: Full membership and newsletter $20.00
Family Membership and newsletter $30.00
Student or Country DX membership $10.00
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) after January 2011. Total 21 Points. Cost $5-00. Certified list and $5-00 to Secretary, Papakura Radio Club. Address above.

ZL1VK Club Nets
146.900 MHz Sunday at 8.30am. Controller ZL1NUX, Gavin Denby. If the repeater is not available, listen 146.475 simplex.
3.755 MHz Sunday at 9.00am. Controller ZL1BNQ Richard Gamble. (Linked to 146.675 & 438.775)