The Official Newsletter of the

PAPAKURA RADIO CLUB INC.

May 2021

Ready or not, Here comes the future.

CONTENTS …

This Month's Meetings:

Wednesday 5 May will be our general meeting at the clubrooms

Meetings for May.

Meetings will only occur at alert level 2 or lower. We cannot have social meetings at level 3. This means we will only open the clubrooms on Wednesdays when at we at alert levels 1 or 2 in accordance with current government guidelines.

Wed 5 April – General Meeting & Satellite Communications for Hams by ZL1AOX
Wed 12 April – Activity Nigh – Flowerpot Antenna builds
Wed 19 April – Committee Meeting
Wed 26 April – Project Night

CLUB ACTIVITY:

With reduced restrictions, we are again returning to an open club every Wednesday

UPCOMING PROJECTS:

PROJECT AND ACTIVITY NIGHTS

We will also, later, be building some satellite antenna designs for working off the ISS or other satellites. Also an updated version of the flower pot Portable VFH/UHF ground independent dual band antenna

We will be building some HF antennas for Drury, and planning some long wire 5 band antennas for Home Stealth use over upcoming project nights, these will include some experimental stealth and portable designs suitable for AREC, SOTA or POTA type activities, as well as general field or Home use.

And we have a DC power distribution project, still in the pipeline. And Keith has a design for an advanced antenna switcher, read more later – So a busy year if you chose to be part of it.

UPCOMING ACTIVITIES:

(LEVELS PERMITTING)
WEDNESDAY 5 MAY – GENERAL MEETING
WEDNESDAY 12 MAY – ACTIVITY NIGHT
WEDNESDAY 19 MAY – COMMITTEE MEETING
WEDNESDAY 26 MAY – PROJECT NIGHT

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

DX Calendar May 2021

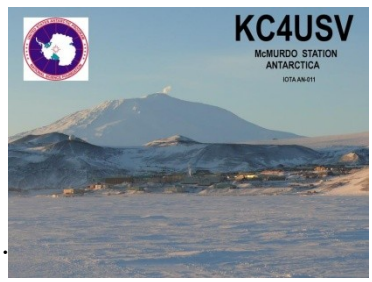
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
JI3DST/5 JR8YLY/5																											A35JP			
																						TO3F FM/OQ3R								
A25VR																														
RI01ANT																														
KC4USV																														
6O1OO																														
T5/IT9HRK																														
JG8NQJ/JD1																														
JW/LB2PG																														

A25VR Botswana

David, VE7VR will be active as A25VR from Botswana, 28 April - 24 May 2021.
He will operate on HF Bands.

RI01ANT Antarctica
Alex, RX6A will be active as RI01ANT from Antarctica, 25 December 2020 - 30 May 2021.
He is planning to operate from Progress and Vostok Base Stations.
He will operate on HF Bands.

KC4USV McMurdo station Ross Island
KC4USV will be active from McMurdo Station, Ross Island, IOTA AN - 011, until 31 October 2021.
Team - W5MED, W4BZB, KF0BHU.
They will operate on 40 and 20m.
Frequencies: 14243 and 7175 SSB and 14074 and 7074 FT8.



T5/IT9HRK Somalia
Alex, T5/IT9HRK will be active from Mogadishu, Somalia, starting 11 April 2021.
He will operate on HF Bands.

JG8NQJ/JD1 Marcus Island Minami Tori Shima Islands
Take, JG8NQJ will be active again as JG8NQJ/JD1 from Marcus Island, IOTA OC - 073, Minami Torishima, during 3 month, starting 10 March 2021.
He will operate on HF Bands CW.

Click on the link (CTRL + Click for some PDF readers) in the PDF versions for information on the Expeditions

DX news.com More than Just DX News

Or check them out at DX News.com

CONTESTS APRIL 2021

Start - Finish Date-Time		Date-Time		Bands	Contest Name	Mode	Exchange	Sponsor's Website
1	1700	1	2000	3.5	SARL 80-Meter QSO Party	Ph	RS, serial, grid locator	www.sarl.org.za
1	1800	1	2200	28	NRAU 10-Meter Activity Contest	CW Ph Dig	RS(T), 6-char grid square	nrrlcontest.no
1	1900	1	2100	1.8-50	SKCC Sprint Europe	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
2	2000	2	2100	1.8-14	K1USN Slow Speed Test	CW	20 WPM max. Name, SPC	k1usn.com/sst.html
3	1000	4	0400	14	PODXS 070 Club PSK 31 Flavors Test	Dig	SPC, mbr or name	www.podxs070.com
3	1400	4	0200	1.8-144	Louisiana QSO Party	CW Dig Ph	RS(T), LA Parish or SPC	laqp.louisianacontestclub.org
3	1400	4	0200	1.8-144	Mississippi QSO Party	CW Ph Dig	RS(T), MS county or SPC	www.arrlmiss.org
3	1400	4	2200	3.5-28	Florida State Parks on the Air	CW Ph Dig	Park ID or SPC	flspota.org/rules
3	1500	4	1500	1.8-28	SP DX Contest	CW Ph	RS(T), SPC province or serial	spdxcontest.pzk.org.pl
3	1600	4	1600	3.5-28	EA RTTY Contest	Dig	RSQ, EA province or serial	concursos.ure.es/en
4	0000	4	0400	3.5-14	North American SSB Sprint Contest	Ph	Other's call, your call, serial, name, SPC	ssbsprint.com/rules
4	1500	4	1730	3.5,7	DARC Easter Contest	CW Ph	RS(T), DOK or serial	www.darc.de
5	1900	5	2300	144	144 MHz Spring Sprint	CW Ph Dig	4-char grid square	sites.google.com/site/springvhfupsprints
6	0100	6	0159	1.8-50	Worldwide Sideband Activity Test	Ph	RS, age group (OM, YL, or Youth)	wwsac.com/rules.html
6	0100	6	0300	3.5-28	ARS Spartan Sprint	CW	RST, SPC, power	arsqrp.blogspot.com
6	1700	6	1900	3.5-14	RTTYops Weeksprint	Dig	Other's call, your call, serial, name	rttyops.wordpress.com
7	1300	7	1400	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	cwops.org/cwops-tests
7	1700	7	2000	144	VHF-UHF FT8 Activity Contest	Dig	4-char grid square	ft8activity.eu/index.php/en
7	1900	7	2000	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	cwops.org/cwops-tests
7	1900	7	2030	3.5	RSGB FT4 Contest Series	Dig	4-char grid square	www.rsgbcc.org/hf
7	2000	7	2100	3.5	UKEICC 80-Meter Contest	Ph	6-char grid square	ukeicc.com/80m-rules.php
8	0300	8	0400	1.8-28	CWops Mini-CWT Test	CW	Name, mbr or SPC	cwops.org/cwops-tests
10	0000	10	0600	1.8-28	QRP ARCI Spring QSO Party	CW	RS, SPC, mbr or power	qrparci.org/contest
10	0700	11	1300	1.8-28	JIDX CW Contest	CW	RST, JA prefecture or CQ zone	jidx.org/jidxrule-e.html
10	1200	11	1200	1.8-28	OK/OM DX Contest, SSB	Ph	RS, county code or serial	okomdx.crk.cz
10	1200	11	1200	3.5-28	FTn DX Contest	Dig	RST, state or province or serial	europeanft8club.wordpress.com
10	1200	11	1800	3.5-28	IG-RY World Wide RTTY Contest	Dig	RST, 4-digit year first licensed	igry.webs.com/ig-ry-ww-contest
10	1200	11	2359	1.8-50	SKCC Weekend Sprintathon	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
10	1300	11	2200	1.8-UHF	Nebraska QSO Party	CW Ph	County or SPC (or grid for FT8)	www.nebraskaqsoparty.org
10	1400	11	0200	1.8-144	New Mexico QSO Party	CW Ph Dig	Name, NM county or SPC	newmexicoqsoparty.org
10	1600	11	0400	1.8-28	Georgia QSO Party	CW Ph	RST, GA county or SPC	gaqsoparty.com
10	1800	11	1800	1.8-144	North Dakota QSO Party	CW Ph	RS(T), ND county or SPC	ndarrlsec.com
10	2100	11	2100	1.8-28	Yuri Gagarin International DX Contest	CW	RST, ITU zone	qc.qst.ru/en/section/32
11	1000	11	2100	3.5-14	WAB 3.5/7/14 MHz Data Modes	Dig	RS, serial, WAB square or country	wab.intermip.net
11	1200	12	1100	3.5-28	DIG QSO Party, CW	CW	RST, mbr or "none"	diplom-interessen-gruppe.info
11	1500	11	1600	3.5	Hungarian Straight Key Contest	CW	RST, serial, power	hskc.ha8kux.com
11	1900	11	2030	3.5	RSGB RoLo SSB	Ph	RS, 6-char grid of previous QSO	www.rsgbcc.org/hf
12	0000	12	0200	1.8-28	4 States QRP Second Sunday Sprint	CW Ph	RS(T), SPC, mbr or power	www.4sqrp.com
12	1900	12	2030	3.5	RSGB 80-Meter Club Championship, CW	CW	RST, serial	www.rsgbcc.org/hf
14	0030	14	0230	3.5-14	NAQCC CW Sprint	CW	RST, SPC, mbr or power	naqcc.info
14	1700	14	2000	432	VHF-UHF FT8 Activity Contest	Dig	4-char grid square	ft8activity.eu/index.php/en
16	2100	17	2100	1.8-28	Holyland DX Contest	CW Ph Dig	RS(T), 4X area or serial	iarc.org/iarc/#HolylandContest
17	0500	17	0859	3.5,7	ES Open HF Championship	CW Ph	RS(T), serial	www.erau.ee/en
17	0600	18	0559	3.5-28	Worked All Provinces of China	CW Ph	RS(T), province or serial	www.mulandxc.com
17	0700	18	0659	3.5-28	YU DX Contest	CW Ph	RS(T), YU county or serial	yudx.yu1srs.org.rs
17	0900	18	2359	3.5-28	CQMM DX Contest	CW	RST, continent	www.cqmmdx.com
17	1400	18	2000	All	Texas State Parks on the Air	CW Ph Dig	RS(T), TX park or SPC	www.tspota.org
17	1600	18	0400	3.5-28	Michigan QSO Party	CW Ph	Serial, MI county or SPC	miqp.org/Rules.htm
17	1700	18	1200	3.5-28	EA-QRP CW Contest	CW	RST, category code	www.eaqrp.com
17	1800	17	2159	1.8-50	Feld Hell Sprint	Dig	RST, mbr, SPC, grid	sites.google.com/site/feldhellclub
17	1800	18	1800	1.8-144	Ontario QSO Party	CW Ph	RS(T), ON county or SPC	www.va3cco.com
18	1800	18	2359	3.5-28	ARRL Rookie Roundup, SSB	Ph	Name, 2-digit year licensed, SPC	www.arrl.org/rookie-roundup
18	2300	19	0100	1.8-28	Run for the Bacon QRP Contest	CW	RST, SPC, mbr or power	qrpcontest.com/pigrun
21	1900	21	2030	3.5	RSGB 80-Meter Club Championship, SSB	Ph	RS, serial	www.rsgbcc.org/hf
24	0001	25	2359	28	10-10 International Spring Contest, Digital	Dig	Name, mbr or "0," SPC	www.ten-ten.org
24	0800	24	1800	3.5-21	QRP to the Field	CW Ph	RST, SPC, name or SOTA ID	www.zianet.com/qrp
24	1300	25	1259	1.8-28	Helvetia Contest	CW Ph Dig	RS(T), HB canton or serial	www.uska.ch/contest
24	1600	25	2159	7-28	Florida QSO Party	CW Ph	RS(T), FL county or SPC	floridaqsoparty.org/rules
25	1200	25	1800	3.5,7	International Vintage Contest HF	CW Ph	RS(T), 6-char grid square	contestvintage.beepworld.it
25	1700	25	2059	3.5-28	BARTG Sprint 75	Dig	Serial	bartg.org.uk/wp
28	0000	28	0200	1.8-50	SKCC Sprint	CW	RST, SPC, name, mbr or "none"	www.skccgroup.com
28	2000	28	2100	3.5	UKEICC 80-Meter Contest	CW	6-char grid square	ukeicc.com/80m-rules.php
29	1900	29	2030	3.5	RSGB 80-Meter Club Championship, Data	Dig	RST, serial	www.rsgbcc.org/hf

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.

Papakura StreetFEST 2021

Saturday 8 May 2021, 10.00am - Saturday 8 May 2021, 2.00pm *(Rain date: Sat 15 May)*

Where: Great South Road and Broadway, Papakura, Auckland
Cost: Free

A free family fun day in Papakura, encompassing Great South Road and Broadway, which will be closed and full of stalls, community groups, Sustainable Markets and more.

Come along and be part of the family day from 10am to 2pm on Saturday 8 May (rain date is Saturday 15 May).

There will be local entertainment across the day, a bouncy castle and face painting for the kids, great specials in town at the businesses, and some great food specials too.

Make a day of it with the family.

Papakura Radio club will be operating 2 stands at the event; One will be combined Civil Defence and AREC Display, while the other will be a Club and Ham Radio display to promote the hobby and its many aspects.

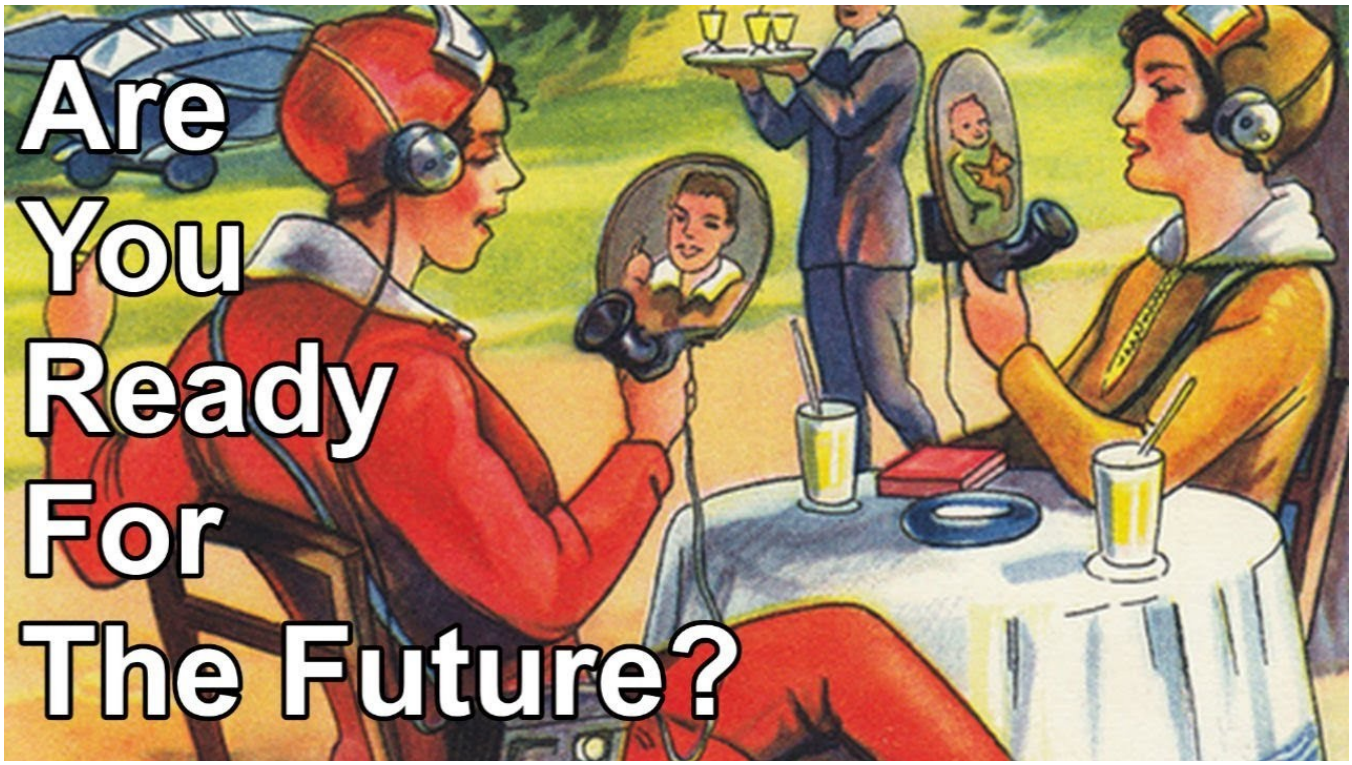
To achieve this we need as many members as possible to attend to take part in operating from the site in as many modes as possible – How will you promote your favourite activity?

RAMBLINGS FROM THE EDITORS DESK

While looking the conference programme I noticed a standard topic on “The Future of Ham Radio”, and while I have no idea of the speakers topic, even if I think I can guess, the general concept of the talk. But like it or not, the future is in fact coming, and we should be preparing for it.

The problem is Which Future? I mean, I was raised on the Jetsons, and I still can’t understand why we don’t have flying cars yet. (But sometimes one of our dogs makes me wonder if she can sort of talk)

IN the 1920’s we thought would have robot teachers, Videophones, flying cars, and machines doing most of the work so we could live the life of luxury.



Yet until the pandemic, the video call was almost a guaranteed way to loose large amounts of money with product after product failing to deliver. Texting ... It seemed.. Was our future, complete with spelling mistakes ... and still no flying cars.

No robot teachers (but Netflix might be a babysitter for many), no sprawling metropolis, and, thankfully, no white rooms with plastic chairs, and valve radios

By the 1980's the view of the future had changed, most predictions were much more dystopian – From terminator movies and the end of the world, to Back to the future offered two views of a gritty harsh future, and who could forget 12 monkeys where a virus left a handful of survivors

But at least they all had flying cars.

It seems our present tends to shape our view of the future

But what will ham radios future look like?

With Digital Modes, SDR radios and internet connected devices being the norm, and a world connected by smart devices, is there really still a future for ham radio?

Does ham radio change to meet the operator to be, or does the operator to be need to join our world?

Maybe the answer is nothing like the question.

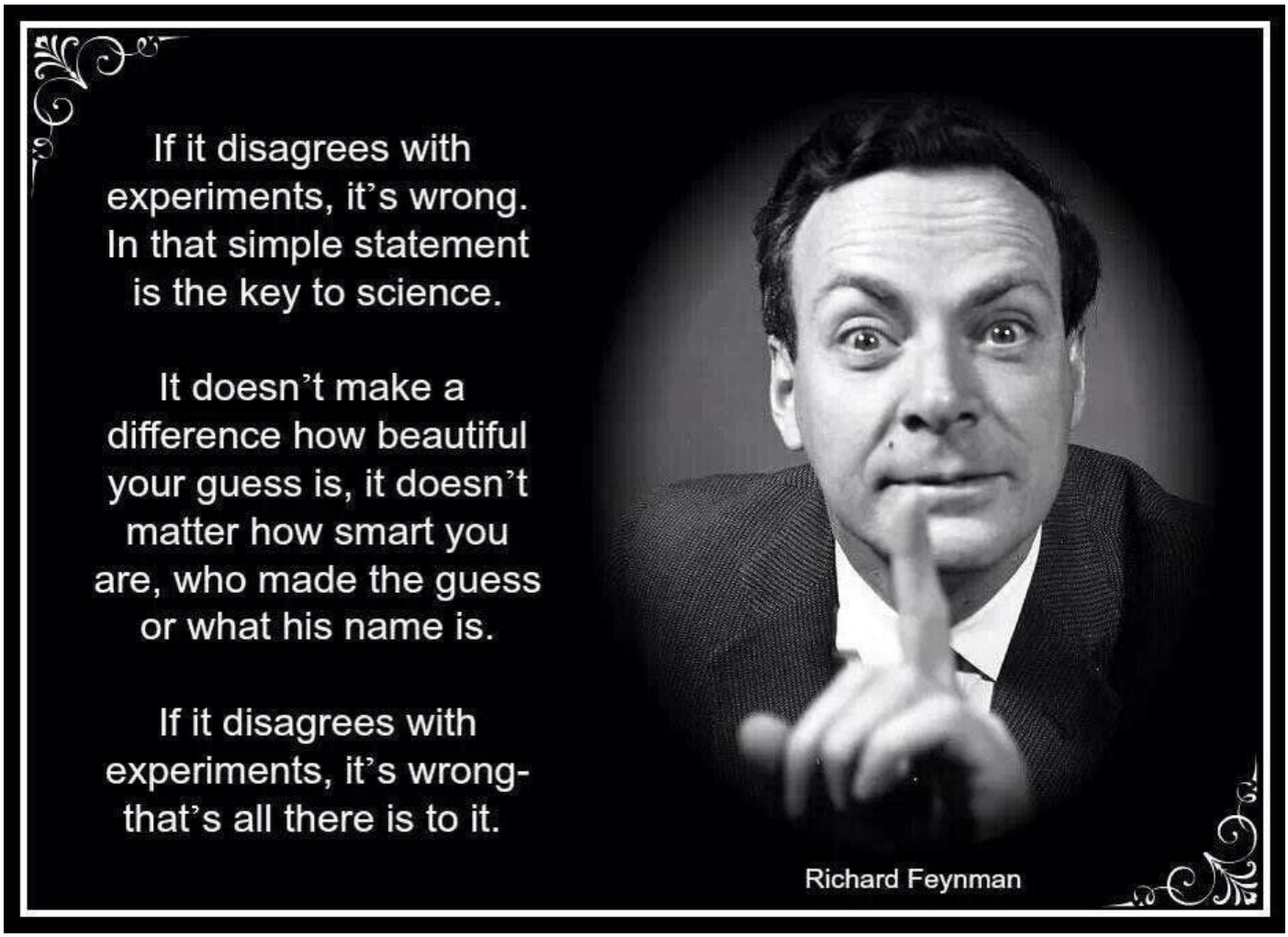
Let's see if I can explain why even asking the question, may show a complete misunderstanding of the problem.

As you know I am a bit of a science geek. And I love to follow physics, and within physics, there are two different physics, there is the science of the very large, and the very small.

On the very large scale, astronomy, Gravity is king, even space-time (thanks to Einstein we no longer think of space and time, but rather one thing that is both) cannot resist its effect. Planets, solar systems, Galaxies all interact based on gravitational effects, and we are learning so much by analysing gravity waves. Its a cool world of science. But on the scale of the very small, the sub-atomic universe, we explore the quantum world, and gravity, does not exist. In fact the problem of quantum physics and Relativity is that they do not work well together. In fact neither can explain the other, and there is no single theory for everything.

This unifying theory of everything is the philosopher's stone of physicists, and string theory, Loop quantum gravity, CDT (Casual Dynamical Triangulation) and even one called E8- which is simple, but relies on undiscovered particles, are all considered possible candidate, but none have yet delivered a definitive result.

But things just got a lot weirder. A Particle known as a muon, is a sort of heavy (200 times heavier) electron, and like an electron has a charge, and magnetic poles has thrown a cat among the pigeons in physics circles, When the muon was placed in a field, it was expected to behave in a certain way, Just like electrons did ... But It did not, and the more the measured it, the more the calculations and the measurements did not agree, in fact the whole understanding of quantum physics was found to be wrong.



Richard Feynman was a physicist and pioneer in quantum physics

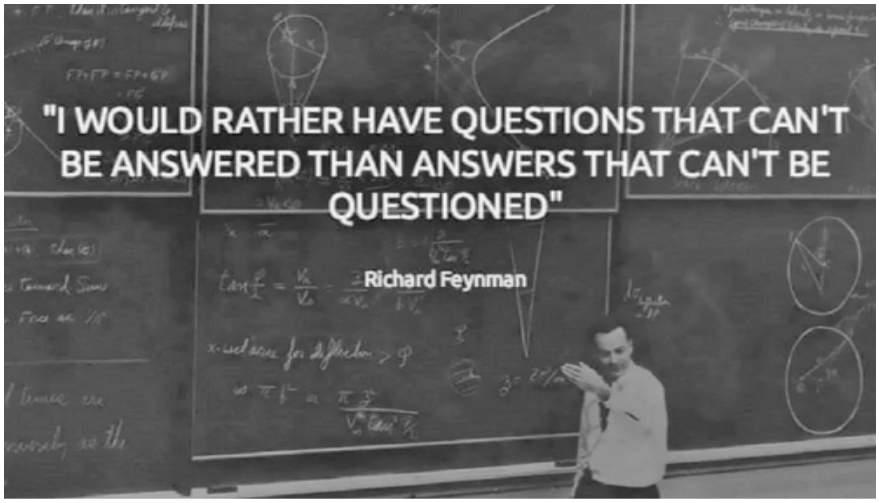
So this gave physicists two option, One the science is wrong, lets discard it and start again ... or Find the reasons that the result is off, and maybe we have another type of particle interaction going on we do not understand.

So , Here is the question: Who is right?

Start again or seek the thing that's changing our result? Which answer is correct ?

May I Suggest ... Both.

The beauty of science is that it might be either, and we need to explore both options, It may be either, or it may be something else entirely, but until we try, we will never know. This uncertainty is science working as it should.



So back Radio, Do we change to accommodate the new – Yes, I think we should, there are a lot of possible candidates out there to play with, I am quite interested in FreeDV, even though I have very few to talk to with it, Paul Likes Yeasu wiresX (System Fusion), and D-Star and DMR are also options. If you use any, then you're testing out an option, and if we had better DMR coverage, I might use it more too. Great, and these might yet prove to be the future. ... or they may not.

But I also love some much older tech, I love SSB HF, and even (when time allows) join some AM nets, and recently I started playing with SSTV – Yes Slow Scan Television is still in use, and it's really quite fun, and maybe a little addictive. And my Grandchildren love it too.

The future may seem like its always going to be more advanced, but in reality, many of the things we do now, we will do then, Many of the things I did as a child, I still do with my grandchildren, They can still find as much joy in a cardboard box as any hi-tech toy, They love sliding in snow (until their fingers freeze) and they love splashing mud puddles.

SOTA is a new activity, but it's the same radios, modes and antenna's, Just lighter and more portable, Just like the computers I programmed in the 1970s were too big to carry around, and the 1980s Compaq is now a museum item, (still working) and DOS is a memory for most. You can still find pleasure ibn old dos games.

In fact entire websites are dedicated to downloads of old games and programmes like DOSbox and Virtual machines running DOS or even older simulations are still popular. In fact both Colossal Cave and Trek are still available for download on Microsoft store. So there is value in being retro.

And then there is the really critical part of the hobby... The people .. If CB is radio and Cellphones are radio, then only real difference is the community and the support we give each other, and those who join the hobby. The activities, the community, the friends, might not be what brought us into the hobby, but it would be a very big part of the reason you stay in it.

It doesn't matter if your net is in the morning or evening, Daily or weekly, or even if it's a club night. Its the people that keep us connected. The same is true of AREC activities, Rallies... etc. The activity is fun, because of all the people we get to know.

And of course, while we don't normally build our own hardware like once was common, we do build other hardware, antennas, Battery boxes and all sorts of hardware. To put it in modern Educational terms we call it STEM (Science, Technology, Engineering and Mathematics) these skills are taught for a fee by many, and free in the hobby. Even if I don't have a flying car, or a job building Bionic Limbs, cyborgs, or repairing humanoid robots --- Yet, I get to play with technology and learn new stuff all the time. Still pretty cool.

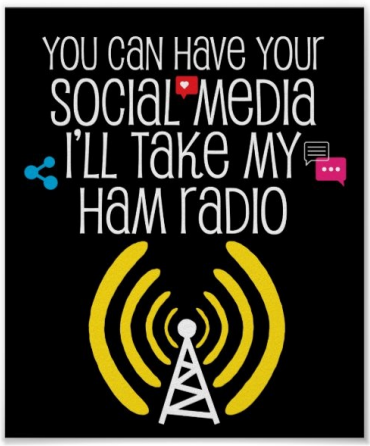
So do we have a future? I say definitely!

DO we have a plan for the future? Maybe Not, But it will have to be a fluid and flexible one as the hobby is so big it's impossible to do it all.

So we will pick and choose what we enjoy.

Have fun, tell others and some of them will come on the journey.

73 de ZL1NUX

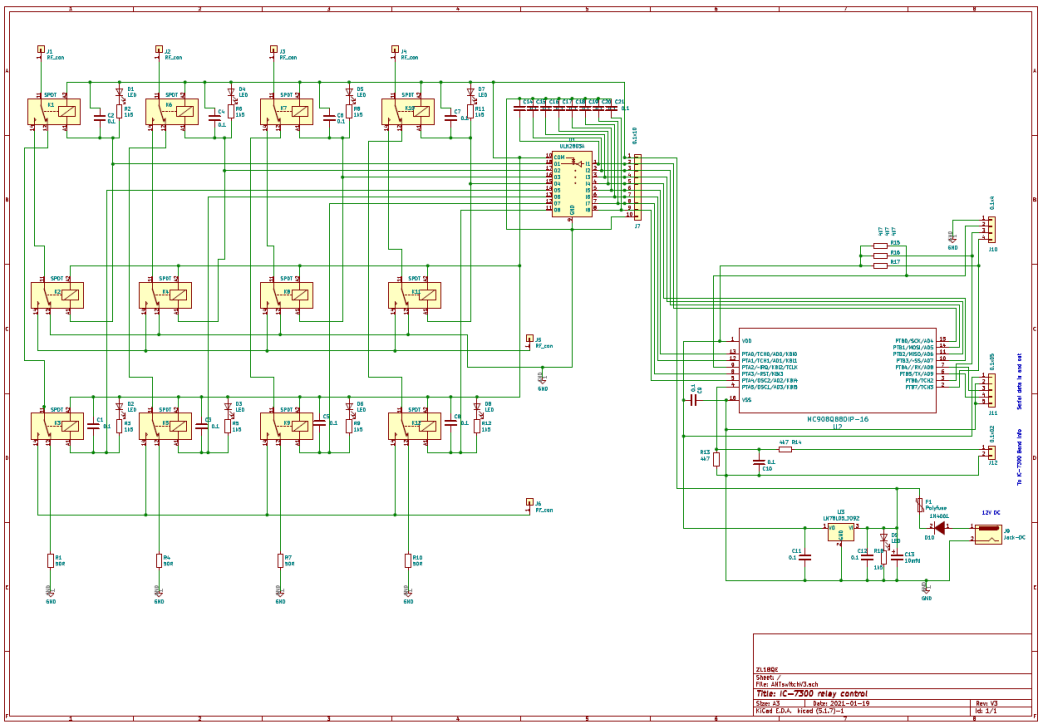


POTENTIAL PROJECT – EXPRESSIONS OF INTEREST REQUIRED.

Keith Dix, along with some fellow hobby inventors, have started a project on an IC7300 relay control box, which then grew to be an antenna switch (auto or manual) to a network controlled switch ... and still evolving. In Keith's Words

Hi Gavin
Latest project is an Antenna switch I needed something to look at the output from the IC-7300 to switch from inverted V to a 6m antenna there is a band switching voltage on one of the outputs depending on the band will give between 0 and 8 volts so needed something to measure and then activate relays
A bit of feature creep happened and it now has outputs for 2 transceivers so one and 4 antennas also has a PTT detect so a different antenna can be used for TX/RX
After some thought I came up with the design attached and also done a PCB for it I have sent off to get made just not sure what signal leakage will be like so it's an in-progress thing but thought it may be of interest Size to fit in the lid of a Die Cast box ... Maybe another club project?

To give a basic cost estimate: Relays would be $2.20 each if they are still available need 12 so $26.4
SO239 sockets I think they are about $3 each on Ebay 6 needed so $18.00
Die cast Box I picked up on trademe for $25 +freight so that came to $30
PCB was $8 plus freight I guess for a reasonable qty that would add
maybe $2 each, Micro $5, The rest is pretty low cost stuff like nuts screws resistors caps LEDs
guess another $10 for the lot



SO we are looking at about $100.00, *(Subject to variations)* and then you get to assemble it.

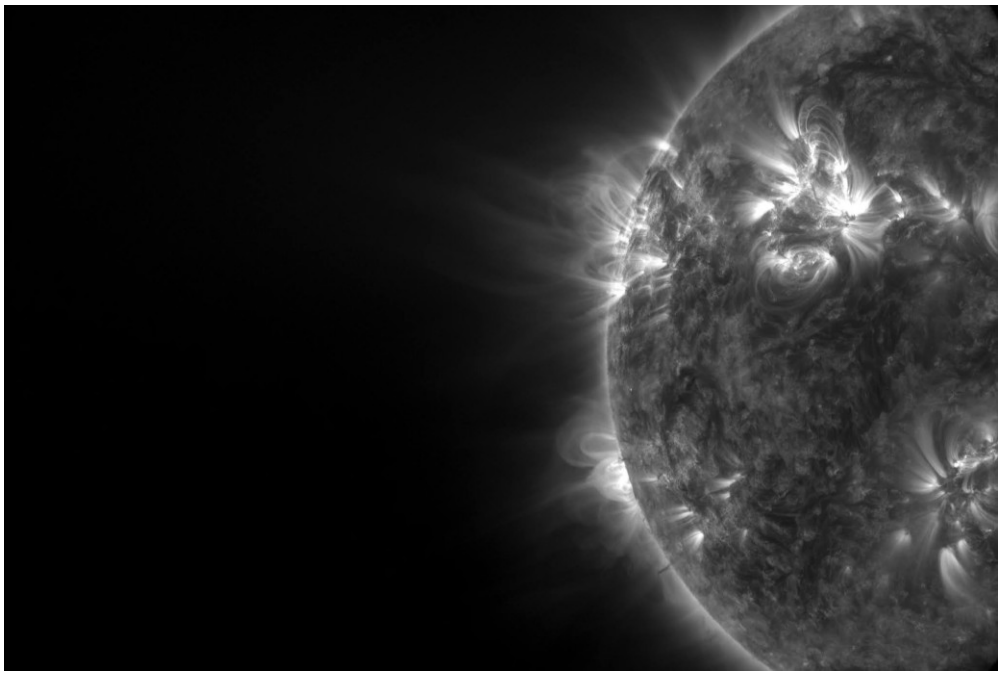
This is not really a project for the faint hearted, but with a professionally made PCB to fit the components into, it's very achievable for anyone with moderate technical skills. (AKA Hams)

But to proceed we would need an indication of the level of interest, If you are interested please email me zl1nux@outlook.com, so I can tally the list. We will advise later how the numbers stack up.

Geeky News

Parker Solar Probe sets new records, and becomes the fasted manmade object in space ... ever

NASA's Parker Solar Probe has started its eighth science-gathering solar encounter, putting it one-third of the way through its planned journey of 24 progressively closer loops around the Sun NASA's Parker Solar Probe has started its eighth science-gathering solar encounter, putting it one-third of the way through its planned journey of 24 progressively closer loops around the Sun.



Its orbit, shaped by a gravity-assist flyby of Venus on Feb. 20, 2021, has now brought the spacecraft closer to the Sun than on any previous flyby. At closest approach, called perihelion, on April 29, Parker Solar Probe came within about 10.4 million kilometers of the Sun's surface, while moving faster than 532,000 kilometers per hour – breaking its own records for both speed and solar proximity.

Parker Solar Probe's four onboard instrument suites are now collecting data on the solar environment and the solar wind as it streams from the Sun, and science data collection will continue through May 4.

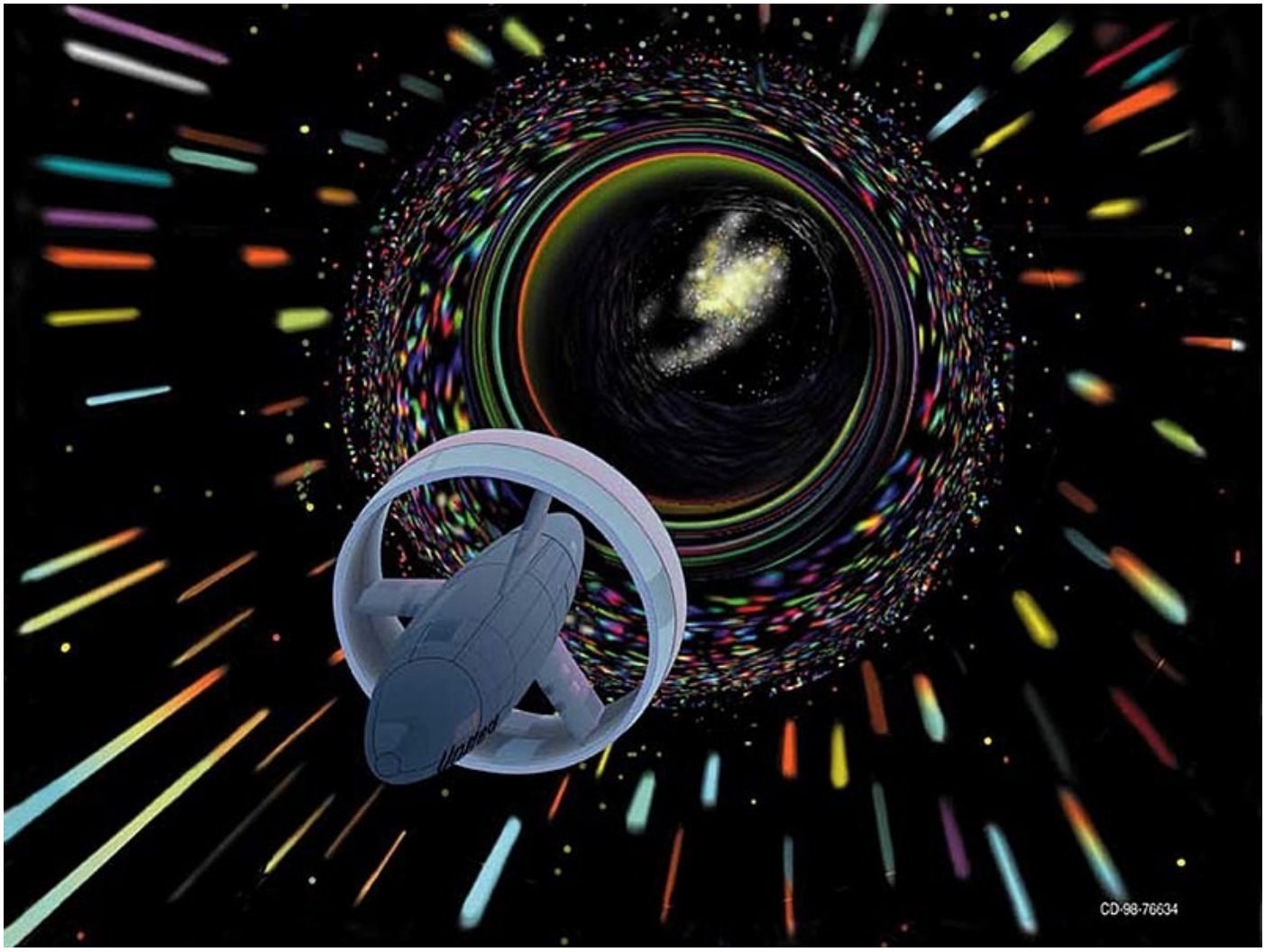
As it passed Venus, it was able to observe, and record details of, clouds of dust in Venus's orbital path/. Space is teeming with dust, which reflects so much light that it typically shines at least a hundred times brighter than the solar wind. (The light reflected from space dust is what creates the zodiacal light, sometimes visible from Earth as a faint column of light rising upward from the horizon.)

For many scientists, the dust itself is interesting. For example, the exact origins of the dust that fills the solar system isn't settled science. As Parker Solar Probe flies ever-closer to the Sun over the course of its mission, the science team also expects to make the first observations of a long-hypothesized dust-free zone, a region close to the Sun where dust has been heated and vaporized by the intense sunlight. If there is a dust-free zone near the Sun this would not only confirm theories about the interaction between our star and its nearby dust, but could also help astrophysicists who study more distant objects: Just as space dust can interfere with seeing the solar wind, it can also muddle measurements of stars and galaxies.

Faster-than-light travel is possible, theoretical study suggests

The closest star to Earth is Proxima Centauri. It is about 4.25 light-years away, or about 40 trillion kilometers. The fastest ever spacecraft, the now- in-space Parker Solar Probe will reach a top speed of 724,000 kph. It would take just 20 seconds to go from Los Angeles to New York City at that speed, but it would take the solar probe about 6,633 years to reach Earth's nearest neighboring solar system.

If humanity ever wants to travel easily between stars, people will need to go faster than light. But so far, faster-than-light travel is possible only in science fiction.



Some characters – like the astronauts in the movies "Interstellar" and "Thor" – use wormholes to travel between solar systems in seconds. Another approach – familiar to "Star Trek" fans – is warp drive technology. Warp drives are theoretically possible if still far-fetched technology. Two recent papers made headlines in March when researchers claimed to have overcome one of the many challenges that stand between the theory of warp drives and reality.

Physicists' current understanding of spacetime comes from Albert Einstein's theory of General Relativity. General Relativity states that space and time are fused and that nothing can travel faster than the speed of light. General relativity also describes how mass and energy warp spacetime – hefty objects like stars and black holes curve spacetime around them. This curvature is what you feel as gravity and why many

spacefaring heroes worry about “getting stuck in” or “falling into” a gravity well. Early science fiction writers John Campbell and Asimov saw this warping as a way to skirt the speed limit.

What if a starship could compress space in front of it while expanding spacetime behind it? “Star Trek” took this idea and named it the warp drive.

In 1994, Miguel Alcubierre, a Mexican theoretical physicist, showed that compressing spacetime in front of the spaceship while expanding it behind was mathematically possible within the laws of General Relativity. So, what does that mean? Imagine the distance between two points is 10 meters. If you are standing at point A and can travel one meter per second, it would take 10 seconds to get to point B. However, let’s say you could somehow compress the space between you and point B so that the interval is now just one meter. Then, moving through spacetime at your maximum speed of one meter per second, you would be able to reach point B in about one second. In theory, this approach does not contradict the laws of relativity since you are not moving faster than light in the space around you. Alcubierre showed that the warp drive from “Star Trek” was in fact theoretically possible.

Sounds good, Only we have one big problem. To achieve it, we needed a weird form of energy “Negative Energy, and for a warp drive to generate enough negative energy, you would need a lot of matter. Alcubierre estimated that a warp drive with a 100-meter bubble would require the mass of the entire visible universe.

Two recent papers – one by Alexey Bobrick and Gianni Martire and another by Erik Lentz – seem to provide solutions that seem to bring warp drives closer to reality.

Bobrick and Martire realized that by modifying spacetime within the bubble in a certain way, they could remove the need to use negative energy. This solution, though, does not produce a warp drive that can go faster than light.

Independently, Lentz also proposed a solution that does not require negative energy. He used a different geometric approach to solve the equations of General Relativity, and by doing so, he found that a warp drive wouldn’t need to use negative energy. Lentz’s solution would allow the bubble to travel faster than the speed of light.

It is essential to point out that these exciting developments are mathematical models. As a physicist, I won’t fully trust models until we have experimental proof. Yet, the science of warp drives is coming into view. As a science fiction fan, I welcome all this innovative thinking. In the words of Captain Picard, “things are only impossible until they are not”.

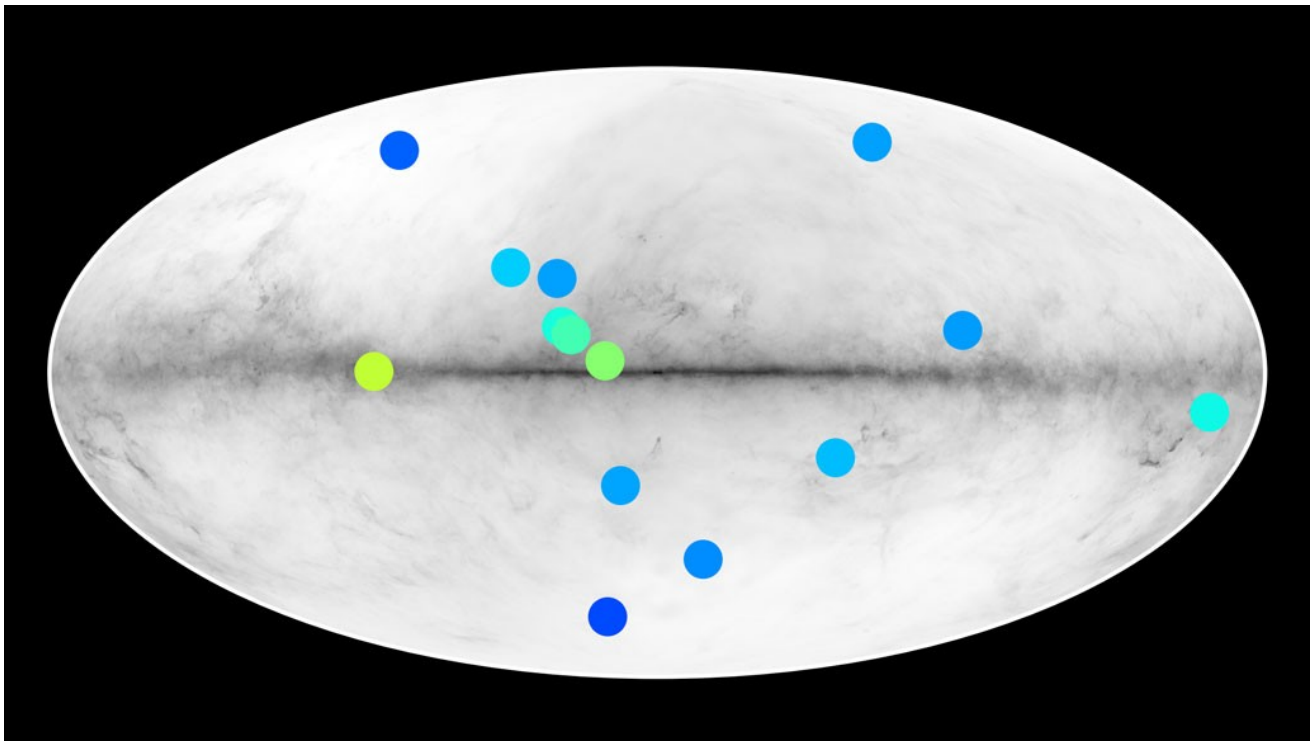
And of course all this changes … If we find a large supply of anti-matter. Then things might get very interesting.

Fun Fact: *In 1966 When Gene Rodenberry showed CBS executives the Communicator prop for the orighoinal start trek, there was concern as to how anything so small would be believable by the public … Good thing they did not get shown a modern in ear hearing aid, or Bluetooth headset.*

Stars Made of Antimatter Could Lurk in the Milky Way

Fourteen pinpricks of light on a gamma-ray map of the sky could fit the bill for antistars, stars made of antimatter, a new study suggests.

These antistar candidates seem to give off the kind of gamma rays that are produced when antimatter — matter's oppositely charged counterpart — meets normal matter and annihilates. This could happen on the surfaces of antistars as their gravity draws in normal matter from interstellar space, researchers report online April 20 in *Physical Review*



If, by any chance, one can prove the existence of the antistars … that would be a major blow for the standard cosmological model, It would really imply a significant change in our understanding of what happened in the early universe.

It's generally thought that although the universe was born with equal amounts of matter and antimatter, the modern universe contains almost no antimatter. Physicists typically think that as the universe evolved, some unknown process led to matter particles vastly outnumbering their antimatter alter egos. But an instrument on the International Space Station recently cast doubt on this assumption by detecting hints of a few antihelium nuclei. If those observations are confirmed, such stray antimatter could have been shed by antistars.

Intrigued by the possibility that some of the universe's antimatter may have survived in the form of stars, a team of researchers examined 10 years of observations from the Fermi Gamma-ray Space Telescope. Among nearly 5,800 gamma-ray sources in the catalog, 14 points of light gave off gamma rays with energies expected of matter-antimatter annihilation, but did not look like any other known type of gamma-ray source, such as a pulsar or black hole.

Based on the number of observed candidates and the sensitivity of the Fermi telescope, the team calculated how many antistars could exist in the solar neighborhood. If antistars existed within the plane of the Milky Way, where they could accrete lots of gas and dust made of ordinary matter, they could emit lots of gamma

rays and be easy to spot. As a result, the handful of detected candidates would imply that only one antistar exists for every 400,000 normal stars.

If, on the other hand, antistars tended to exist outside the plane of the galaxy, they would have much less opportunity to accrete normal matter and be much harder to find. In that scenario, there could be up to one antistar lurking among every 10 normal stars.

The existence of antistars would imply that substantial amounts of antimatter somehow managed to survive in isolated pockets of space. But even if they exist, antistars would be abundant enough to account for all the universe's missing antimatter. And physicists would still need an explanation for why matter overall dominates over antimatter.

But if we had an antistar from which we could harvest antimatter, we could build an engine that could get us to the star, so we could harvest it. Maybe.

Sometime Science research can be even stranger than science fiction, and it may all be completely wrong. But never the less intriguing

MARS UPDATE:

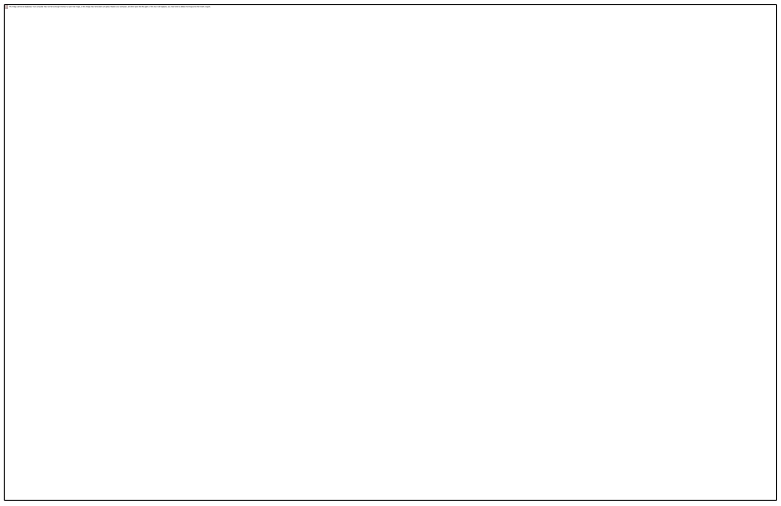
And a very quick mars update, with perseverance rover investigating the red planet, we have also had Ingenuity make the first powered flight, while experiments on the rover were able to create "breathable?" oxygen from the thin Martian atmosphere. Another step closer to humans being able to one day walk on the red planet.

CONFERENCE 2021

SATURDAY AND SUNDAY JUNE 5-6, 2021:
EAST PIER CONFERENCE CENTRE, AHURIRI, NAPIER

Join us on Queen's Birthday weekend for the annual NZART conference, held at the beautiful location of Ahuriri, Napier in sunny Hawke's Bay. The Saturday is dedicated to the NZART and AREC annual general meetings. Sunday will have a definite technical flavour and the meetings of various special interest groups. Both days will finish dinner with some light entertainment.

Saturday 5 June 2021



08:00 Registration, Coffee & Mingling
09:15 Welcome
09:30 Keynote Speaker .....
10:00 Morning Tea
10:30 NZART AGM
12:30 Break for lunch
13:30 NZART AGM continued
15:00 Afternoon Tea
15:30 AREC Forum
17:30 AREC Forum ends

18:00 drinks
19:00 Dinner, Keynote Speaker .....

Sunday 6 June 2021

Room One
09:00 WSJT new modes, ZL3RC
09:45 Morning Tea
10:15 Satellite Rx, link budgets and more, ZL4IG
11:00 Session ends
11:15 Fun with VNA's, ZL2WRW
12:00 Lunch
13:00 Low cost Mag loops, ZL2IT and ZL2MQ
13:45 Session ends
14:00 Forum: Arduino in Ham Radio, ZL2MQ
14:45 Afternoon Tea
15:15 Broadband transformers and Hi Q toroid inductors in RF design ZL3PAH
16:00 Mix, mingle, discussion time .....

Room Two

09:00 Forum: Future of Ham Radio, ZL1VH
09:45 Morning Tea
10:15 Solid State Power Amps, ZL3RC
11:00 Session ends
11:15 DMR and evolving National Link, ZL4JY
12:00 Lunch
13:00 How the ZM4T Contest station works, ZL3IO
13:45 Session ends
14:00 How to set up for LOTW, ZL2IFB
14:45 Afternoon Tea
15:15 Attempts to receive noise from Jupiter, ZL4DK
16:00 Mix, mingle, discussion time.....

Room Three

09:00 Restoring WW2 Radios ZL3KB-ZL3CK
WW2 man-pack radio propagation experiments, how they compare with their handbook figures, and how they can be verified in theory ZL3KB,
also: Of Boonton and Bakelite-The ARC-5 Radio, ZL3CK
09:45 Morning Tea
10:15 Softly softly, QRP, ZL2OZ
11:00 Session ends
11:15 Setting up for Jock White FD, ZL2QM
12:00 Lunch
13:00 80m DX, new ham perspective ZL2XC
13:45 Session ends
14:00 Whanganui-Taranaki wide area network, 2TC
14:45 Afternoon Tea
15:15 How to get going on 3cm, ZL3RC
16:00 Mix, mingle, discussion time

Room Four
8:30 WARO AGM
10:30 WARO AGM ends
11:00 OTC AGM
12:00 Lunch
13:00 SOTA up a hill near you, ZL2AJ
13:45 Session ends
14:00 Receiving Weather Satellites, ZL2SPF
14:45 Afternoon Tea
15:15 160m Contest sites and Aerials, ZL2DW
16:00 Mix, mingle, discussion time

18:00 Drinks

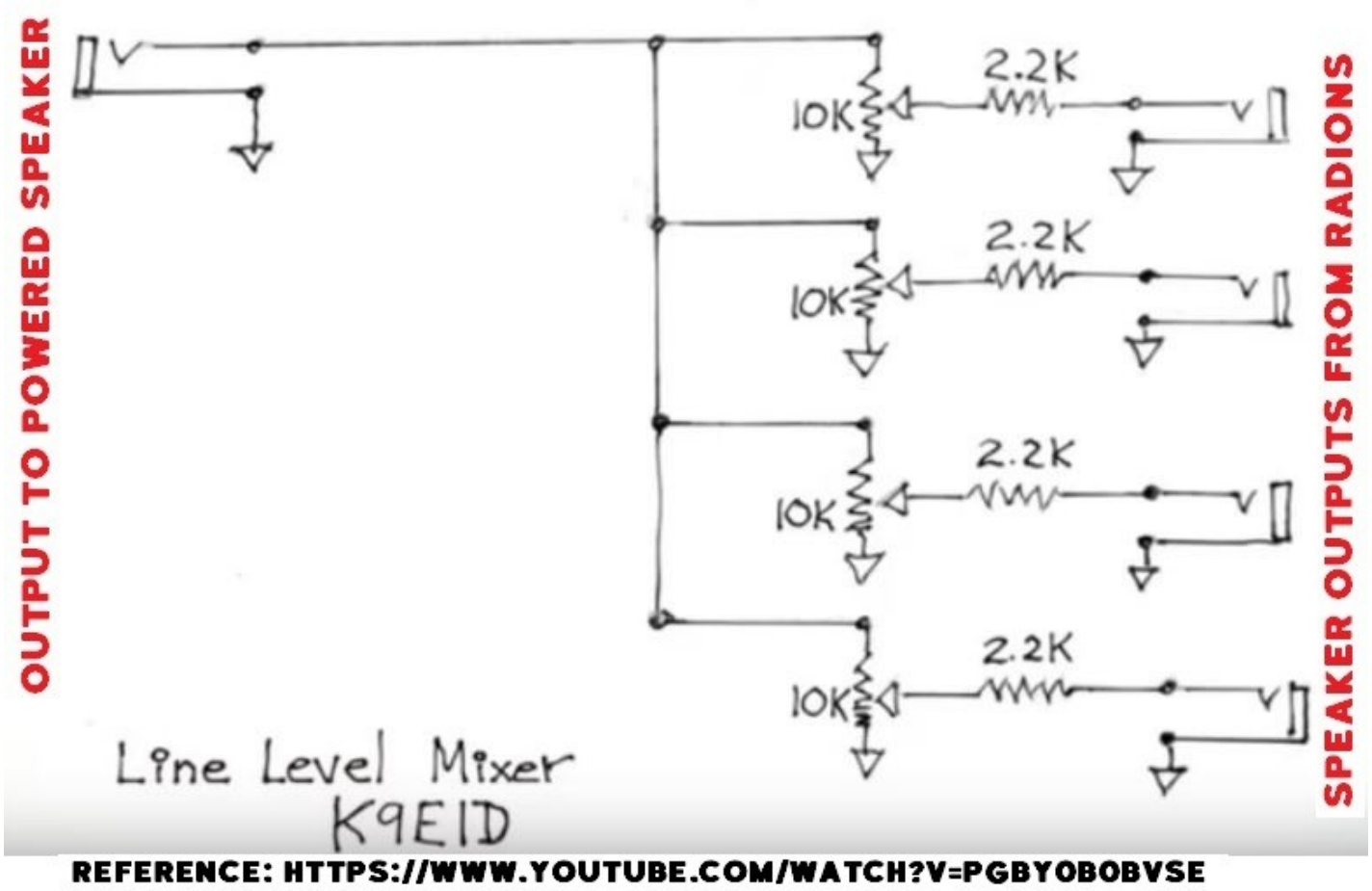
19:00 Dinner, speaker, Entertainment

Full Details & Registration at: https://karl125.wixsite.com/nzartconference

SEEN OR HEARD AROUND THE SCENES

A SIMPLE LINE MIXER (PASSIVE)

I found this on YouTube: How to build a line sound mixer to connect various radios to a powered speaker



May be useful for someone with time to build a home project

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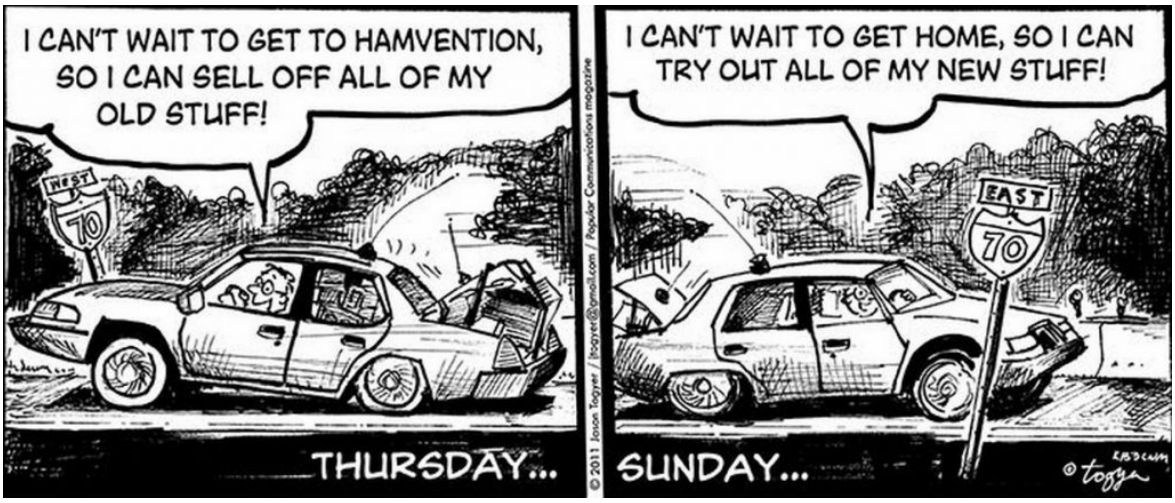
Kind Regards,
[ZL1RAH]



A Warning Worth Considering

I was walking down the street when I was accosted by a particularly dirty and shabby-looking homeless man who asked me for a couple of dollars for dinner.

I took out my wallet, extracted ten dollars and asked, “If I give you this money, will you buy some beer with it instead of dinner?"
"No, I had to stop drinking years ago," the homeless man replied.

"Will you use it to go fishing instead of buying food?" I asked.

"No, I don't waste time fishing," the homeless man said.."I need to spend all my time trying to stay alive."

"Will you spend this on Ham Radio equipment?" I asked.

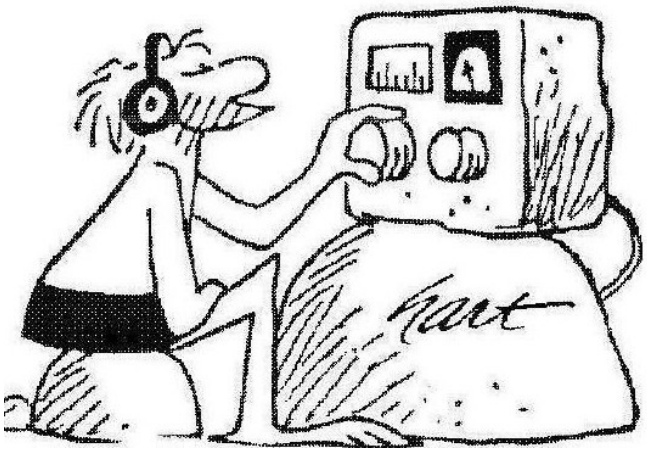
"Are you NUTS!" replied the homeless man. "I haven't talked on a radio in 20 years!"

"Well," I said, "I'm not going to give you money. Instead, I'm going to take you home for a shower and a terrific dinner cooked by my wife."

The homeless man was astounded. "Won't your wife be furious with you for doing that?

I replied, "Don't worry about that. It's important for her to see what a man looks like after he has given up drinking, fishing and ham radio."

Thanks to Graham Street for the original



2021 DAYTON VIRTUAL SEMINARS

The day before a "normal" Dayton Hamfest, there are two groups who gather for a daylong seminar. This year, with the Hamfest being cancelled, there are virtual conferences being held.

The Contest University https://www.contestuniversity.com/course-outline/ has seven presentations and starts at 1300Z on our Friday 21 May.

It is free to join! Check out the website above for more info!

SANGSTER SHIELD CONTEST

The 2021 NZART Sangster Shield Contest is to be held

Saturday 15th & Sunday 16th May @ 2000hrs-2300hrs NZAST each evening.

Rules for this year's contest have remained unchanged since those published in the 2016 April/May Break In.

For more information around the details of this contest, please click here.

NIGEL (ZL2SEA) HAS A NEW HAMSHACK

While Nigel was back in ZL, He upgraded his remote station.

It should go well with his S1 Noise floor, Towers on steroids, and long wires in the trees.

I wonder if he rents out access yet?

Am I the only one feeling a little envy ?

AWESOME JOB NIGEL !!!

Radio Electronics Group Inc

Annual Equipment Sale
Branch - 89

at Glenview Club Inc.
211 Peacocks Road Glenview
Hamilton

Saturday 15th May 2021

Vendors: 8.30am
Doors open: 10am
Tables $20

Public $2 Lucky Ticket Entry
Trade display – Refreshments – Door prizes
Plenty of parking
Easy access
Motor Home Parking

For vendor registration and enquiries
Contact Vern ZL1TKG

ZL1REGSALE@gmail.com

Or phone John ZL1PO 021 204 5990
Radio Electronics Group

BREAKING NEWS!

For those who arrive at the REG sale with an appetite, there will be 3 breakfasts on the menu to choose from.

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.
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 Net
	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
	21.00	3.535	New Zealand Net (CW)

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 $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) 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)