Ham Hum

April 2018

The official newsletter of
The Hamilton Amateur Radio Club (Inc.)
Branch 12 of NZART - ZL1UX
Active in Hamilton since 1923

Next Meeting

18th April : 7:30pm

Preparing goods for REG sale

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From the Editor

If you use any repeaters or beacons belonging to the Waikato VHF Group, you are welcome to help keep them running by sponsoring them. See http://www.zl1is.info/sites.html for more details.

This months meeting will be about preparing items for the upcoming REG Junk Sale, along with a social time.

This months cover photo is of the open air section of the monthly (during summer) MIT Flea Market in Cambridge, MA, USA.

SB PROP ARL ARLP014
ARLP014 Propagation de K7RA

We only saw sunspots over two days of this past week, March 30 and 31 when the daily sunspot numbers were 11 and 12. There were no sunspots during the previous week, so the average daily sunspot number rose from 0 to 3.3.

Average daily solar flux changed from 68.2 to 68.6.

Geomagnetic indicators were quiet, with average daily planetary A index declining from 10.6 to 5, and average mid-latitude A index going from 8.9 to 4.

Predicted solar flux is 67 on April 6 to 12, 68 on April 13 to 22, 69 on April 23 to May 6, 68 from May 7 to 19 and 69 on May 7.

Predicted planetary A index is 8 on April 6, 5 on April 7 to 9, then on April 10, 15 on April 11 and 12, 18 on April 13 and 14, then 15, 10, 5 and 8 on April 15 to 18, 15 on April 19 to 21, then 12 and 10 on April 22 and 23, then 5 on April 24 to May 6, then 10, 15 and 20 on May 7 to 9. 18 on May 10 and 11, then 15, 10, 5 and 10 on May 12 to 15, then 15 on May 16 to 18 and 12 and 10 on May 19 and 20.

F. K. Janda, OK1HH sent this geomagnetic activity forecast for the period April 6 to May 1, 2018.

Geomagnetic field will be:

Quiet on April 8 and 9, 24 and 25, 27 to 29, May 1

Mostly quiet on April 19, 26, 30

Quiet to unsettled on April 7, 10, 16 to 18, 23

Quiet to active on April 6, 11, 13, 15, 20 to 22

Active to disturbed on April 12, 14

Solar wind will intensify on April (6 to 8,) 10 to 18, 23 to 25, (27 to 30)

Remark:

- Parenthesis means lower probability of activity enhancement.

Mark Bell, K3MSB of Airville, Pennsylvania reported on April 5:

"I've been trying to work Australia for quite a while on 160M. During the current 160M season I've heard bits and pieces of calls from VK land, and occasionally a complete call, but nothing strong enough to work.

Saturday morning March 31 I was on 160M around 1030Z. I saw Ron VK3IO spot-

ted and tuned to his frequency and was astounded at his signal strength! He was at nice 559, almost armchair copy as the saying goes. I was even more stunned that he answered my first call and received a 579 from him at 1045Z, which is about 35 minutes before my sunrise. At 1101Z I had the pleasure of working Luke VK3HJ, who was not as strong as Ron but putting in a very nice signal. My receive antenna is a 200 foot RBOG (Reversible Beverage On Ground) oriented NW/SE and my transmit antenna is an INV-L.

On Wednesday 4 April 160M was pretty dead around 1030Z so I started calling CQ. A few KHz above me, Jon AA1K was also calling CQ. Phil VK6GX spotted Jon at 1024Z and myself at 1033Z. Later I emailed Phil and he said while he heard us, we were both too weak for a QSO.

Phil also stated that openings from VK6 to the East Coast 'have been few and far between in the last few years. Signals often don't make it across the Nullarbor Plain to VK6.' "

Interesting article on the history of solar photography:

https://cosmosmagazine.com/space/snapshots-of-the-sun-since-1845

From Tamitha Skov:

"Outside of the bright region this week being a lot quieter and weaker than we hoped, we have a remnant coronal hole sending small pockets of fast solar wind our way. This is good news for aurora photographers at high latitudes, but it also brings a little more zing to the ionosphere for amateur radio operators and emergency responders suffering with low solar flux right now.

Radio propagation on Earth's day side will likely remain poor, but you might be surprised how a slight bit of activity can really perk up the radio bands at night and in the gray line. GPS users should also enjoy better than average GPS conditions on Earth's night side, even at low latitudes where night time is often troublesome for GPS.

But don't expect these conditions to last for more than a few days.

Next week we will be dealing with a more serious chance of reaching solar storm conditions, when a much bigger coronal hole rotates into the Earth-strike zone."

https://youtu.be/q5hvAqXiVL4

For more information concerning radio propagation, see the ARRL Technical Information Service at http://arrl.org/propagation-of-rf-signals. For an explanation of numbers used in this bulletin, see

http://arrl.org/the-sun-the-earth-the-ionosphere.

An archive of past propagation bulletins is at http://

arrl.org/w1aw-bulletins-archive-propagation. More good information and tutorials on propagation are at http://k9la.us/.

Monthly propagation charts between four USA regions and twelve overseas locations are at http://arrl.org/propagation.

Instructions for starting or ending email distribution of ARRL bulletins are at http://arrl.org/bulletins.

Sunspot numbers for March 29 through April 4, 2018 were 0, 11, 12, 0, 0, 0, and 0, with a mean of 3.3. 10.7 cm flux was 69, 68.8, 69, 69, 68.4, 67.8, and 68.5, with a mean of 68.6. Estimated planetary A indices were 4, 5, 7, 5, 5, 4, and 5, with a mean of 5. Estimated mid-latitude A indices were 3, 4, 6, 4, 4, 3, and 4, with a mean of 4.

Chinese Lunar-Orbit Amateur Radio Payload Could Launch this Spring

China's twin-launch Chang'e 4 mission to the far side of the moon will place a pair of microsatellites in lunar orbit this spring "to test low-frequency radio astronomy and space-based interferometry." The two satellites, unofficially called *DSLWP-A1* and *DSLWP-A2* (DSLWP = Discovering the Sky at Longest Wavelengths Pathfinder), could launch this spring. The pair represent the first phase of the Chang'e 4 mission, which involves placing a relay satellite in a halo orbit to facilitate communication with the Chang'e 4 lander and rover, which will be sent to the far side of the moon in December. Because the moon's far side never faces Earth, the satellite is needed to serve as an Earth-moon relay. The Chang'e 4 mission will be the first-ever attempt at a soft-landing on the far side of the moon.

The two spacecraft also will carry Amateur Radio and educational payloads, but not a transponder. Developed by students at the Harbin Institute of Technology, the Amateur Radio payload on *DSLWP-A1* will provide a telecommand uplink and a telemetry and digital image downlink. Radio amateurs will be able to transmit commands that allow them to send commands to take and download an image.

The satellites will piggyback on the Chang'e 4 relay package and will deploy them-

selves into a 200 × 9,000 kilometer lunar orbits. The 50 × 50 × 40 centimeter spacecrafts each weigh about 45 kilograms and are three-axis stabilized. Two linear polarization antennas are mounted along and normal to the flight direction. The satellites will use the moon to shield them from radio emissions from Earth.

The Harbin Institute of Technology team has proposed downlinks for A1 on 435.425 MHz and 436.425 MHz. Downlinks for A2 would be 435.400 MHz and 436.400 MHz using 10K0F1DCN or 10K0F1DEN (10-kHz wide FM single-channel data) 250 bps GMSK with concatenated codes or JT65B.

Equipped with low-frequency antennas and receivers, the astronomy objectives of *DSLWP-A1* and *-A2* will be to observe the sky at the lower end of the electromagnetic spectrum — 1 MHz to 30 MHz — with the aim of learning about energetic phenomena from celestial sources.

The launch is anticipated for May or June on a CZ-4C vehicle, putting the satellites' deployment about 6 months ahead of the launch of the Chang'e 4 lander and rover.

"It's not real Ham Radio!" by Chris G7DDN

A Pioneering Background

I was musing recently on the wonderful history of Amateur Radio, from the early pioneers with spark transmitters and the race to get the first signals across the Atlantic, up to the Microwave enthusiasts who developed the way forward for space communications and satellite technology (and, whisper this, mobile phone technology!)

The history of Ham Radio and RF technology is inextricably linked – there was even a time here in the UK where it was believed, anecdotally, that a Ham Radio callsign would help you to get a job with the BBC!

However change came very quickly, relatively speaking, in the early history of radio. From Marconi's experiments to the first Public Broadcast Stations was only 25 or so years. TV was only another 15 years or so behind that, and so on…

Resistance (or not feeling at "Ohm")

Yet the history of Ham Radio is also one of *resistance* to change – not from the pioneers, they were often instigators of it, but from the "everyday" Hams.

Let me see if I can give you some examples, with my tongue planted very firmly in my cheek…

"That's not Real Ham Radio!"

The early Hams used CW pretty much exclusively. So when AM arrived as one of the first of the voice modes, there was a bit of an uproar…*"It's not real Ham Radio! Real Ham Radio involves using a Morse Key! What in world is the hobby coming to, using voice to communicate over the airwaves? It's sacrilege!"*

But life went on, AM found acceptance and all was well in Hamland once again.

Then transistor technology arrived in the late 1940s and early 1950s, provoking quite a response. *"Hang on! That's not real Ham Radio. Real Ham Radios glow in the dark – we can't be having this miniature technology – they'll never last as long as valves or be as reliable"*

But life went on, solid state devices found acceptance and all was well in Hamland once again.

Then SSB arrived and there was *more* discontent… *"That's not real Ham Radio. Real Ham Radios don't sound like Donald Duck! It's a fad, it will soon fall away once people get fed up of hearing those silly voices"*

But life went on, SSB found acceptance and all was well in Hamland once again.

Then FM and repeaters arrived and there was polarisation within the hobby (and it wasn't horizontal or vertical either!) *"That's not real Ham Radio. Real Ham Radio doesn't need to use that thing on top of the hill to help your signal get somewhere! Real Ham Radio is point to point!"*

But life went on, FM & repeaters found acceptance and all was well in Hamland once again.

Then Packet Radio arrived and there was *real* trouble… *"That's not real Ham Radio. Real Ham Radio doesn't need one of those new-fangled computer thingies in order to work. Get your key or your mic out and start working other Hams properly!"*

But life went on, Packet Radio found acceptance and all was well in Hamland once again.

Then Digimodes arrived and there was yet more strife… *"That's not real Ham Radio. Real Ham Radio doesn't involve typing messages to other Hams – and those perishing computers again! What on Earth are they doing in the hobby?"*

But life went on, Digimodes found acceptance and all was well in Hamland once again.

Then Digital Voice modes arrived and there were some *very* serious disagreements… *"That's not real Ham Radio. Real Ham Radios don't sound like R2D2! Real radios don't use the Internet to help them get round the world, they ABSOLUTELY HAVE to use atmospheric propagation. What is happening to this hobby???"*

But life went on, D-STAR and other Digital Voice modes found acceptance and all was well in Hamland once again.

Then we arrive at today and Network Radios come onto the scene and all hell breaks loose! "*That's not real Ham Radio. This is playing at Ham Radio – there's no Amateur RF so it is simply not Ham Radio. What is more, I worked hard for my license, everyone else should have to too! How dare people enjoy communications in an incorrect manner!"*

So will life go on and will all ever be well in Hamland again?

The 21st Century Challenge

This is why the advent of Network Radios represents such a challenge to us as Hams – it is causing us to completely rethink what it means to be a Radio Amateur in 2018 and beyond.

And we will have to start facing up to questions similar to these…

What exactly defines a Radio Amateur?

What do we mean by "Amateur RF"?

Is it RF generated by someone who is an Amateur?

Or is it RF generated on a particular band allocated to us by the government?

If so, does it absolutely HAVE to be that?

Can it be nothing else?

Does any of this really matter?

What about our bands?

As Hams we are very "attached" to our bands. Whether it be 160m or 2m, we almost have a psychological sense of "ownership" of them.

We have "favourite" bands, we have bands we *never* frequent.

We even have "our" spot frequencies and some Hams will get somewhat "assertive" if a fellow amateur who is not in their "group" *dares* to use "their" frequency!

And yet in the 21st Century, I believe that the whole concept of bands & frequencies is becoming ever more fluid. Why would this be?

An example from Broadcast Radio

Not that long ago, we could tune into broadcast stations on Long Wave (LF), Medium Wave (MF), Short Wave (HF) and FM (VHF Band II). Stations frequently referred to themselves by frequency: “247 metres Radio 1” or “1152 AM” for example. It was seen part of the station’s identity – many had the frequency in their station names!

But today, we increasingly hear less of this. When you listen to broadcast stations these days, they seem to be eschewing giving out frequencies, instead they just announce that they are on “FM, DAB and Digital” or something similar to that.

Why? Because radio is something you probably increasingly consume in one of two ways – either digitally (via DAB or Satellite or similar means) or by streaming via the Internet. Frequencies and by extension, bands, are not as relevant as they once were.

Moving Out!

The large broadcasters are also increasingly moving away from “traditional” radio.

On Short Wave – only a few countries & various religious groups seem to operate there now. The big guys are moving out of Long and Medium Wave too. If commercial broadcasters are moving away, we need to ask why.

Do Bands matter?

I have a suspicion that this is, in part at least, because bands and frequencies don’t matter so much these days. Domestic radio appliances are more about push buttons and screens that get you to your station instantly, rather than tuning dials with frequencies. It’s the end product that is important, not necessarily the manner in which it gets to you.

Who tunes a modern broadcast radio in these days with a manual tuning dial? Anyone? It was the main knob on all radios not that many years ago! I can even remember tuning old VHF TV in with a dial in my early days on this planet – that *really* seems odd now!

Going one step further, many broadcast stations are not even using direct RF at all these days! We still refer to them as “radio stations” (or occasionally “Internet radio stations”)

Is there any reason to think Ham Radio as a hobby will not invariably move in a similar kind of direction? One of our strengths historically as Hams has been that we are good at embracing new technologies and adapting them for our own uses.

The point I am leading up to is this – I suspect “bands” and “frequencies” are not really as big an issue in the digital age as we might *like* them to be.

In essence, bands only exist because of propagation.

Propagation again

160, 40m, 20m,10m, 2m etc. are all, in reality, “line-of-sight” bands. To over-simplify the subject, it is the ionospheric or tropospheric layers that enhance this line-of-sight propagation and turn it into something else.

Each band has differing propagation qualities as a result, giving each band its “character” and for some, the study of propagation in itself is a fascinating part of the hobby.

Man-made propagation is just different

When we think of (and use) the *Internet* as a man-made propagating medium (which is what it is – it propagates signals around the world) then the concept of bands becomes redundant.

The Internet is like one, almost infinitely wide, worldwide “band”, constantly open S9+40 to all countries 24/7 with few vagaries – and not just for voice, but for vision and other digital modes as well.

Put like that, who wouldn’t want to use it? Would it actually matter what “band” you were (or were not) on, if there even were one?

So the concept of “bands”, by which so many of us define our activities, may be crumbling in front of us in this digital age and we may not even realise it yet! That is not to say our bands don’t still exist, by the way – clearly they do. It is just that, to many people these days, bands are a foreign concept.

And then what?

As the hobby starts to come to terms with some of the implications of this, other issues then start to arise, such as…

Do we need an exam any more to get a licence?

Do we even need a licence?

What form or forms should it take, if so?

Might we see an influx of new people coming into the hobby because the entry to it is more straightforward?

How would we cope with that?

Do we even *want* new people coming in, especially if their views differ from ours?

What will the hobby even look like in 20 years time?

What happens to our “traditional” bands?

I expect to see a lot of discussion in the future about this – it’s actually quite exciting!

Out of the Comfort Zone…

However it will make many of us feel extremely uncomfortable – the ground is shifting beneath our feet and the traditional raison d'être of Ham Radio is waiting to be challenged to change and adapt…

I don't see this as a bad thing – intelligent honest debate is to be welcomed. The most important thing is to keep our minds and our thinking wide open. We shouldn't reject something just because it is new or because it challenges our preconceived ideas of where radio is going in general.

Equally, we shouldn't throw the baby out with the bathwater and reject traditional Ham Radio as it has been for years. The Ionosphere and the Internet are complementary, not in competition.

My own opinion?

If you have read this far and you really want my personal thoughts…

Why can we not have the best of both worlds? Surely we can.

Network radios (at this stage in their development at least) are not contest radios for example, and the Internet is not yet a contest-friendly mode of propagation. (That might change of course!) so contesting is still best on the traditional Ham bands. I'll see you on 80 metres – 59 001 OM…

However, regular reliable high-quality contacts around the world are but one thing Network Radios excel at, so why not just use that when you want to (or when the HF bands are full of noise or are otherwise dead)? I do! I don't see the expansion of choice in the hobby as a bad thing.

Enjoyment is the key

Does the fact that I am transmitting on cellular frequencies at 800MHz, 900MHz, 1800MHz, 2100MHz or on Wi-Fi on 2.4GHz or 5GHz matter? Is there something intrinsically evil about that? Is there more virtue in using 21 MHz or 432MHz, for example? They are just "frequencies" after all.

I prefer to see myself following the motto of my local radio club, "Having fun with RF". Whether I choose to use a Network Radio or a Yaecomwood super-duper base station is not as relevant to me. Enjoyment of the hobby is everything, otherwise why have a hobby?

Whichever way this debate goes and whichever direction this great hobby takes, my line would be to keep *all* the richness of *every* aspect of the hobby.

In other words, to go back to the title of this piece and change but one word, *"It's ALL 'real' Ham Radio"*

Upcoming Happenings & Events

Date	*Happenings & Events*
2nd April	HF Net, 3.575 MHz, 19:30
3rd April	VHF Net, 146.525 MHz, 20:00
6th April	**NZART HQ Infoline**
7-8 April	**NZART Low Band Contest**
9th April	HF Net, 3.575 MHz, 19:30
10th April	VHF Net, 146.525 MHz, 20:00
16th April	HF Net, 3.575 MHz, 19:30
17th April	VHF Net, 146.525 MHz, 20:00
18th April	**Club General Meeting**
20th April	**NZART HQ Infoline**
23rd April	HF Net, 3.575 MHz, 19:30
24th April	VHF Net, 146.525 MHz, 20:00
29th April	**NZART Official Broadcast**
30th April	HF Net, 3.575 MHz, 19:30

4th May—NZART HQ Infoline

16th May—Club Meeting

18th May—NZART HQ Infoline

19th May—Sangster Shield

27th May—NZART Official Broadcast

1st June—NZART HQ Infoline

9-10 June—NZART Hibernation Contest

15th June—NZART HQ Infoline

24th June—NZART Official Broadcast

4-5 August—NZART Brass Monkey Contest

6-7 October—NZART Microwave Contest

1-2 December—NZART Field Day Contest

For more information on any of the above please contact myself or any committee member.

Club Information

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Business Meeting:	1930 First Wednesday of each month except January 88 Seddon Road, Hamilton
General Meeting:	1930 Third Wednesday of each month (except Jan) 88 Seddon Road, Hamilton
Homepage:	http://www.zl1ux.org.nz
eMail:	branch.12@nzart.org.nz
HF Net:	**3.580 temporarily (**3.575MHz LSB)1930 Mondays
VHF Net:	146.525MHz simplex 2000 Tuesdays
2m Repeater:	145.325MHz -600kHz split
STSP Repeaters:	146.675MHz -600kHz split 438.725MHz -5 MHz split
ATV Repeater:	Off air pending channel changes

Cover Photo: Outdoor section of the MIT Flea Market.

Sender	Hamilton Amateur Radio Club (Inc) PO Box 606 Hamilton 3240