

# Ham Hum

May 2012



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



**Next General Meeting**  
**16th May : Remits and DVD**

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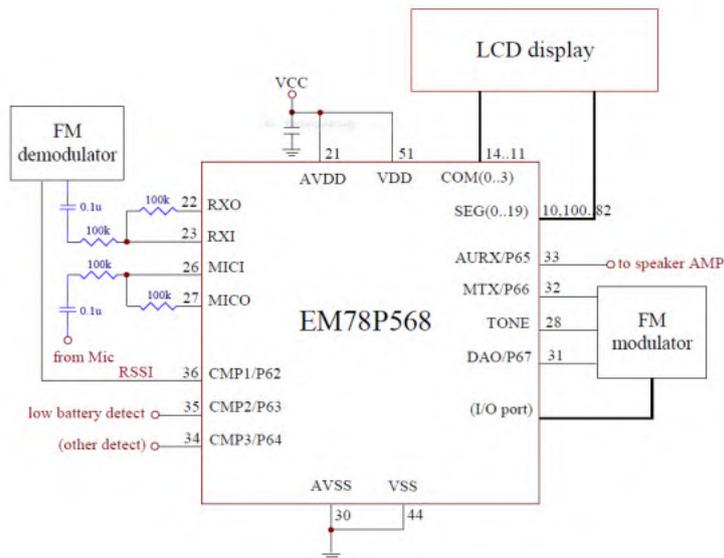
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## From the Editor

The upcoming General Meeting will be dealing with remits for the NZART AGM. An interesting collection this year that I'm sure will create some discussion at the AGM. Following the remits there will most likely be a video of some sort.

Modern handheld 2m/70cm radio gear keeps dropping in price, with recent gear out of China approaching the point where they could well be considered disposable. Partly because the cost of repairing one would far exceed the cost of buying a new one. And also because these rigs use radio-on-a-chip SMD technology, so there are very few parts that can actually be replaced. It will be interesting to see if this trend moves to mobile or base rigs.



**Next Committee Meetings -  
2 May & 6 June**

## **SB PROP ARL ARLP017 ARLP017 Propagation de K7RA**

Solar activity revived over the past week, with a big increase in sunspot numbers. On Friday, April 20, the daily sunspot number reached 162, and four days later on April 24 the number reached 169. This level of activity was not seen since last fall, when the daily sunspot number reached 173 on September 16, 184 on October 21, and 208 on November 9.

Average daily sunspot numbers more than doubled over the previous week's average, rising 73 points to 144.7. Average daily solar flux was 133.9, an increase of nearly 29 points.

Associated with all this was a rise in geomagnetic activity, peaking with a planetary A index of 35 on Tuesday, April 24. The geomagnetic activity increase was due to several solar flares launched from new sunspots.

The latest forecast shows solar flux of 115 on April 27, 110 on April 28, 105 on April 29-30, 100 on May 1-2, 95 on May 3, 105 on May 4, 110 on May 5-6, 115 on May 7-8, 120 on May 9, 130 on May 10-12, 135 on May 13, 140 on May 14-17, 135 on May 18-21, followed by 130, 125, 120, 115 and 110 on May 22-26 and 105 on May 27-31.

Predictions for planetary A index are 10 on April 27, 5 on April 28 through May 1, 8 on May 2, 5 on May 3-7, 8, 12, 15 and 10 on May 8-11, 5 on May 12-19, 12 and 10 on May 20-21, and 5 on May 27-31.

Jim White, WD0E, worked FK8CP (New Caledonia) at 0027z on April 26. He wrote:

"Just worked FK8CP on 6 meter SSB from DM79, about 35 miles SE of Denver, at 0027z on April 26. Amazing 7,131 mile path. For an hour before I worked him, on DX Sherlock (see <http://www.vhfdx.info/spots/>) there were spots of him from Southern California but not much in the way of sporadic E between here and SoCal. This must have been an Es cloud just off the coast of SoCal linked to TE. He was in and out of the noise but we heard him for about 20 minutes off and on. I'm using a 5 element Yagi at 40 feet with a low NF mast mounted preamp and 9913 cable. I had lots of noise reduction cranked into my IC756Pro. A THP amp gives me 650W, with about 550W to the antenna."

I think when Jim writes "low NF mast mounted preamp", NF refers to "noise floor."

Later at 0215z on Friday, April 27 (Thursday night in North America) Jim commented, "Looking at it again I think the E cloud was right over southern California, not off the coast. For the geometry to work it had to have been there, I think. A bunch of Hawaii into the West Coast right now with E clouds over Mexico and Kansas. We are listening and hoping we get that double link into Hawaii tonight!"

Jeff Hartley, N8ll of Shepherdstown, West Virginia sent in an interesting report.

"Interesting to note that 10 meters is far from dead and prop seems to pick up out west around sunset on 10 and 12 meters. The SFI today Sunday, April 22 has spiked up to 142. Yesterday, April 21, 10 meters sounded very similar to several days before in the 2300Z hour when the flux was lower. There have been some very loud signals from South America up until about 0020Z most days, sunset was around 2350Z. Also heard were loud W6's in southern CA and a few VK's and ZL's. Worked YJ0VK on 12 meters with a weak signal."

"Saturday evening April 21, 12 meters opened to NL7G and FO5WBB along with the 10 meter propagation mentioned above. Conditions to JA were excellent on 15 meters around sunset (2400Z) with many loud JA's as loud as S9 (above normal for us near DC). T03X was loud running a 15 meter phone pile-up from St Barts at 0015Z. There were also JA's on 17 meters as well as Zone 19 Asiatic Russians. 20 meters was not open well to JA at the same time, but RK9LWA/9 had a S7 signal from a rare RDA (refers to the Russian Districts Award)."

"30 meters has been in excellent shape to Europe around our sunset with HA9RT S9 plus 20 db on my dipole just after 2400Z on April 21 and M10GRG S9 plus 10 db running a big pile up at 0004Z."

"Monday April 23 was very unusual with disturbed conditions in the morning and most of the DX action on 15 meters. I started off at 1357Z getting YB4GU in response to my CQ, S8 on Sumatra, who was running 100 watts and a dipole and very fluttery. My next QSO was the opposite end of Indonesia YC9BEC on Bali with very little flutter. Signals from all over EU were fluttery and peaking north to about 20 degrees. Even A61ZX and 5B8AD on Cyprus were peaking around 20 degrees. I never recall such an extreme skew to the north on signals so far south, normal headings are 45-50 deg. Conditions continued about the same for an hour working on CW, RU9HM, RU4SO, UA3EDP/6, RU1QD, and RT3I, all peaking north. At 1543Z 5Q4B in Denmark on 15 SSB was best due north fading over 10 db down to about S2 during our QSO."

Note that Jeff made a comment about disturbed conditions on April 23. Checking <http://www.swpc.noaa.gov/ftpdir/latest/DGD.txt> we see that April 23-25 had high A index readings at all latitudes. Interesting comparing April 24-25, where we see mid-latitude and planetary A index decrease and high latitude values increase over the two days.

Ever wonder what is going on in Sunspot, New Mexico? Check out this article from CNET: [http://news.cnet.com/8301-17938\\_105-57419042-1/](http://news.cnet.com/8301-17938_105-57419042-1/)

Rich Zwerko, K1HTV of Amissville, Virginia sent a response to K9LA's advice in last week's bulletin to get on the air. Rich wrote:

"Well, today (April 21), a day before my 70th birthday, I followed your advice. After breakfast I went down to the K1HTV shack, got on 20 meter RTTY with 80 Watts and worked YJ0VK for digital country #275. Later in the morning, around 1530Z with my barefoot K3 and with the A3S tri-bander, I started to hunt for some DX on 15 meters. A number of 4X/4Z stations in Israel were worked in the Holyland contest. Swinging the beam north, HS0AC on 15 meter CW was quickly added to the K1HTV log. This was followed by 2 more stations in Thailand and 2 in Indonesia, all on SSB. 15 meter RTTY produced QSOs with EY7AD, SU9VB and VU2NKS. Brad, FO8WBB (formerly FO/N6JA) was worked on 12 meter CW at 17:19Z. HF conditions were so good that I worked all 6 continents in less than 45 minutes!"

"On 10 meters D2QV had a nice CW signal from Angola. A number of European stations also were worked with the beam east. Around 17:55Z I heard 9M2IDJ on 28.447 on SSB via this same skewed path over Africa. Last November I worked Masa on 10 meter CW during an afternoon opening on this same skewed path for #331 on 10 meter CW with 100 Watts. My last 15 meter SSB over-the-pole QSO today was with YB1ALL at 18:30Z. Gus reported that it was 1:30 AM local Indonesian time. Not bad for 15 meter propagation."

"Last Sunday (April 15) produced 50 MHz QSOs via an Es-to-TEP opening from the K1HTV Virginia QTH to the Caribbean and South America. I heard 14 stations (3 were beacons) in CX, LU, PY, KP4 and HI8 and worked 7 of them with 100 Watts. But I got on the air 15 minutes too late, missing CP6UA in Bolivia, the last country I need on continental SA. Bernie, W3UR and Dave, N3DB were on the ball and worked the CP. As they say, you snooze, you lose. Hope that there is a next time and another path to Bolivia before old sol goes to sleep and solar cycle 24 is history."

Check out Rich's bio and photos at <http://www.grz.com/db/k1htv>. You'll have to log in, but registration is free.

Scott Bidstrup, T13/W7RI sent this article on the sun's magnetic polarity <http://www.sciencedaily.com/releases/2012/04/120421203959.htm>.

Jon Pollock, K0ZN of De Soto, Kansas had this to share.

"Wow! This is like the good old days in cycle peak in the mid '80's! Higher bands open til nearly midnight."

I was on 17 meter CW about 10:00 to 11:30 pm CST Saturday night (April 21). Operations started with a QSO and ragchew with K7URU in Spokane, WA. Sigs were very good for about 35 plus minutes and we had a nice chat. Signals started building up to well over S-9, clear indications the Gray Line was approaching, and then bingo! The band crashed and signals faded to nothing. Within about 1 to 2 minutes the band was dead, no signals. Then about 5 minutes later, several very strong signals suddenly show up and the band had many signals. One was a pile-up of European stations and the other was an EA8 running about 10 db over S-9! The Europeans and the Spanish station lasted about 10 to 15 minutes, then totally disappeared, and the western Pacific came in strong. I ended up working an FK8 (New Caledonia near Australia), a ZL and then Argentina. All of them had strong signals. The ZL was running way over S-9."

"This is the crazy, fun stuff at the top of a sunspot cycle, with all kinds of DX on the upper bands at night. The funny thing about 17 meters was that there were no phone stations at all; all the activity on 17 meters was CW in the lower end of the band. Classic conditions. The band had a very low noise floor and was very quiet and very long skip. I could not hear ANY state side stations. Cool when it happens, but the sudden, short, appearance of the European stations at about 11 PM CST was some really 'kinky' propagation. Wonder what kind of prop that was and whether it was Long Path or short path? I kind of suspect it may have been long path or ionospheric ducting."

If you would like to make a comment or have a tip for our readers, email the author at, [k7ra@arrl.net](mailto:k7ra@arrl.net).

For more information concerning radio propagation, see the ARRL Technical Information Service at <http://arrl.org/propagation-of-rf-signals>. For an explanation of the 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>. Find more good information and tutorials on propagation at <http://myplace.frontier.com/~k9ja/>.

Monthly propagation charts between four USA regions and twelve overseas loca-

tions are at <http://arrl.org/propagation>.

Sunspot numbers for April 19 through 25 were 122, 162, 147, 118, 158, 169, and 137, with a mean of 144.7. 10.7 cm flux was 137.8, 141.7, 149.1, 147.9, 141.8, 133.6 and 127.2, with a mean of 133.9. Estimated planetary A indices were 5, 7, 6, 7, 23, 35, and 21, with a mean of 14.9. Estimated mid-latitude A indices were 5, 7, 6, 7, 21, 30, and 18, with a mean of 13.4.

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## Delfi-C3 (DO-64) – 4 years in orbit

On April 28, 2012 the nanosatellite **Delfi-C3** (DO-64) celebrated 4 years in orbit and is still alive and kicking!

This 3-unit CubeSat, developed by the Technical University of Delft in the Netherlands has been largely developed by students and performed technology demonstration experiments for the space industry in the Netherlands. After being launched on PSLV-C9 in 2008 it has been circling the earth for 1461 days (exceeding its design lifetime with 1371 days)!



The satellite still broadcasts its telemetry and measurement data which can be received using simple amateur radio equipment and using the RASCAL software (available on the Delfi website:

<http://www.delfispace.nl/index.php/participation/radio-amateur-participation>).

The satellite project was also the birthplace of ISIS – Innovative Solutions In Space as the company's founders and a significant number of its employees have worked on the satellite project at the start of their careers. We congratulate the university

with the milestone and excellent demonstration that well coordinated student satellite projects can produce great results and exceed all expectations.

- The university news article can be found here:

<http://tinyurl.com/Delfi-C3-4th-Anniversary> (in Google English),

- ESA astronaut André Kuipers PI9ISS congratulates Delfi-C3 from the ISS on his twitter account: [http://twitter.com/#!/astro\\_andre](http://twitter.com/#!/astro_andre) (in Dutch).

Regards,

**Jeroen Rotteveel**

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## Metal-eating bugs found on ISS

Micro-organisms capable of eating the International Space Station have been discovered aboard the orbiting space base.

"We have come across this at the Mir station and seen it on the ISS - the microflora having an adverse effect on the structure of the station. These microbes damage not only metals but also polymers. They can lead to equipment failure," Interfax quoted the Russian Academy of Sciences vice president Anatoly Grigoryev as saying on Monday.

<http://themoscownews.com/international/20120423/189656759.html>

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## 16 Japanese educational satellites to be launched

Sixteen educational satellites are under construction in Japan. The first should be launched in May 2012 followed by the others over the next two years.

The first to launch is the amateur radio satellite **HORYU-2** built by students at the Kyushu Institute of Technology (KIT). The launch is on a Japanese H-IIA rocket planned for May 17 at 1639-1642 UT.

The mission aims to take pictures of the Earth using a small CMOS camera SCAMP (Surrey Camera Payload) developed by the University of Surrey, a sister university of KIT. SCAMP takes a 640×480 pixel picture in a JPEG format. From 700 km altitude, one pixel corresponds to 1.6 km.

HORYU-2 will be followed in July by the launch of the HTV3 to the International Space Station (ISS). This will deliver the JEM-Small Satellite Orbital Deployer (J-SSOD) along with the Japanese CubeSats WE-WISH, FITSAT-1 and RAIKO. These CubeSats should be deployed from the ISS in September using the Japanese Experiment Module (JEM) robot arm.

FITSAT-1, also known as NIWAKA, will use a neodymium magnet for attitude control. It has multiple downlinks, CW on 437.250 MHz, AX.25 on 437.445 MHz and a 4 watt high speed data transmitter on 5840 MHz capable of sending a 640 by 480 VGA JPEG image in 6 seconds.

In addition it carries high power LEDs that will be driven with 100W pulses to produce extremely bright flashes. These, it is hoped, will be observable by the unaided eye or with small binoculars. Both the 5840 MHz and optical downlinks have a high power consumption so it may be that they are only activated over Japan.

In December TSUBAME is planned to be launched on a H-IIA. It aims to have a CW beacon on 437.250 MHz and AX.25 1200/9600bps telemetry on 437.505 MHz.

Further information on all the satellites can be found on the AMSAT-UK website at <http://www.uk.amsat.org/6691>

AMSAT-UK publishes a colour A4 newsletter, OSCAR News, which is full of Amateur Satellite information.

Free sample issue at [http://www.uk.amsat.org/on\\_193\\_final.pdf](http://www.uk.amsat.org/on_193_final.pdf)

Join online at <http://tinyurl.com/JoinAMSAT-UK>



## Rubber Chicken Flies into Solar Radiation Storm

**April 19, 2012:** Last month, when the sun unleashed the most intense radiation storm since 2003, peppering satellites with charged particles and igniting strong auroras around both poles, a group of high school students in Bishop, California, knew just what to do.

They launched a rubber chicken.

The students inflated a helium balloon and used it to send the fowl, named

"Camilla," to an altitude of 120,000 ft where she was exposed to high-energy solar protons at point blank range.

"We equipped Camilla with sensors to measure the radiation," says Sam Johnson (age 16) of Bishop Union High School's Earth to Sky student group<sup>1</sup>. "At the apex of our flight, the payload was above 99% of Earth's atmosphere."



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## Upcoming Happenings & Events

<i>Date</i>	<i>Happenings &amp; Events</i>
1st May	VHF Net, 146.525 MHz, 20:00
<b>4th May</b>	<b>NZART HQ Infoline</b>
7th May	HF Net, 3.575 MHz, 19:30
8th May	VHF Net, 146.525 MHz, 20:00
<b>10th May</b>	<b>Break-In copy due</b>
<b>12th May</b>	<b>VK/Trans Tasman (80m Phone)</b>
14th May	HF Net, 3.575 MHz, 19:30
15th May	VHF Net, 146.525 MHz, 20:00
<b>16th May</b>	<b>Hamilton Club General Meeting</b>
<b>18th May</b>	<b>NZART HQ Infoline</b>
<b>19-20 May</b>	<b>NZART Sangster Shield</b>
21st May	HF Net, 3.575 MHz, 19:30
22nd May	VHF Net, 146.525 MHz, 20:00
<b>27th May</b>	<b>NZART Official Broadcast</b>
28th May	HF Net, 3.575 MHz, 19:30
29nd May	VHF Net, 146.525 MHz, 20:00
<b>30th May</b>	<b>AREC Section meeting</b>

**1st June—NZART HQ Infoline**  
**1-4 June—NZART Conference—Nelson**  
**3rd June—NZART HQ Infoline**  
**3rd June—NZART Official Broadcast**  
**9th June—NZART Hibernation Contest**  
**15th June—NZART HQ Infoline**  
**20th June—Hamilton Club General Meeting**  
**21-24 June—Rally New Zealand NZRC/WRC (AREC)**  
**24th June—NZART Official Broadcast**  
**6th July—NZART HQ Infoline**  
**7-8 July—NZART Memorial Contest**  
**10th July—Break-In copy due**  
**20th July—NZART HQ Infoline**  
**21st July—VK/Trans Tasman (160m all modes & 80m CW/Digi)**  
**28th July—Waitakere Sprint (Phone)**  
**29th July—NZART Official Broadcast**  
**4th August—Waitakere Sprint (CW)**  
**4th August—NZART Brass Monkey Contest**  
**August—Hamilton Market Day**  
**6th October—NZART Microwave Contest**  
**31st October—AREC Section meeting**  
**4th November—NZART Straight Key Night**  
**10-17 November—Silver Fern Rally-North Island (AREC)**  
**30th November—AREC Section meeting**  
**1st December—NZART VHF+ Field Day**  
**Easter 2013—NZART Technology Conference - Auckland**

## AREC Event Operators Page

<b>WRC Rally NZ/ Possum Bourne Rally</b>	21-24 June 2012	Organiser : <b>ZL1DK</b>
Please contact the <a href="#">Section Leader</a> with your team information and he will pass it on to Auckland.		

<b>Rollo's Marine Bridge to Bridge Water-Ski Race</b>	December 2012	Organiser : <b>ZL1UPJ</b>
<u>Position</u>	<u>Saturday Operator</u>	<u>Sunday Operator</u>
<b>Base</b>		
<b>Start Boat</b>		
<b>Rescue Boat</b>		
<b>X-Band</b>		
<b>A.</b>	Ngaruawahia/Taupiri	
	Start/Finish at Point	
<b>B.</b>	Ngaruawahia Ramp	
<b>C.</b>	Ngaruawahia W/S	
<b>D.</b>	Horotiu	
<b>E.</b>	Pukete Ramp	
<b>F.</b>	Days Park	
<b>G.</b>	Fairfield Bridge	
<b>H.</b>		
<b>I.</b>		
<b>J.</b>		
<b>K.</b>		
<b>L.</b>		

<b>Kairangi Hill Climb</b>	<b>Sunday September 2012</b>		<b>Organiser : ZL1IC</b>
<u>Position</u>	<u>Operator</u>		
1.			
2.			
3.			
4.			
5.			
<b>School C ycling</b>	<b>July 2012</b>		<b>Organiser : ZL1IC</b>
<u>Position</u>	<u>Operator</u>	<u>Position</u>	<u>Operator</u>
1.		5.	
2.		6.	
3.		7.	
4.		8.	
<b>Colville Connection</b>	<b>10th March 2012</b>		<b>Organiser : ZL1PK</b>
<u>Position</u>	<u>Primary Operator</u>	<u>Secondary Operator</u>	<u>Other Operator</u>
<b>Base</b>			
<b>Stony Bay</b>			
<b>Fletcher Bay</b>			
<b>Hill 1</b>			
<b>Hill 2</b>			
<b>Fantail Bay</b>			
<b>Stand B y</b>			

For Details about and to help w ith these events, contact the person indicated as the organiser for the event. See Page 1 for their contact information.

## Club Information



### Contacts :-

**Business Meeting:** 1930 First Wednesday of each month  
88 Seddon Road, Hamilton

**General Meeting:** 1930 Third Wednesday of each month (except Jan)  
88 Seddon Road, Hamilton

**Homepage:** <http://z1ux.tripod.com>  
**eMail:** [branch.12@nzart.org.nz](mailto:branch.12@nzart.org.nz)

**HF Net:** 3.575MHz LSB 1930 Mondays  
**VHF Net:** 146.525MHz simplex 2000 Tuesdays

**2m Repeater:** 145.325MHz -600kHz split  
**STSP** 146.675MHz -600kHz split  
**Repeaters:** 438.725MHz -5 MHz split  
**ATV Repeater:** 615.250 Ch39 (off air)

*Cover Photo: Regis Matthey photographs his friend Johannes using a long exposure on Abel Tasman Beach, New Zealand. Although it looks like there are two people engaged in a light duel, Johannes assumed one position and then quickly moved to another eight feet away, armed with a strobe light and a torch. Picture: Regis Matthey / Barcroft USA <http://www.aliraqi.org/forums/showthread.php?p=147890235>*

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