

# Ham Hum

August 2010



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



**Next General Meeting**  
**Annual Club Dinner**  
**Valentines Restaurant—6:30pm**

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### Contact Details 2010

<b>Patron:</b>			
Fin Bruce	ZL4HI	843 9634	
<b>President:</b>			
Robin Holdsworth	ZL1IC	855 4786	<a href="mailto:zl1ux@nzart.org.nz">zl1ux@nzart.org.nz</a>
<b>Vice Presidents:</b>			
Gavin Petrie	ZL1GWP	843 0326	<a href="mailto:zl1gwp@nzart.org.nz">zl1gwp@nzart.org.nz</a>
Phil King	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>
<b>Secretary:</b>			
David Nation	ZL1TCE	843 0108	<a href="mailto:zl1tce@nzart.org.nz">zl1tce@nzart.org.nz</a>
Phil King	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>
<b>AREC Section Leader:</b>			
David Nation	ZL1TCE	843 0108	<a href="mailto:zl1tce@nzart.org.nz">zl1tce@nzart.org.nz</a>
<b>Deputy Section Leaders:</b>			
"Jono" Jonassen	ZL1UPJ		<a href="mailto:zl1upj@nzart.org.nz">zl1upj@nzart.org.nz</a>
Phil King	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>
<b>Treasurer:</b>			
Tom Powell	ZL1TJA	834 3461	<a href="mailto:zl1tja@nzart.org.nz">zl1tja@nzart.org.nz</a>
<b>Committee:</b>			
"Jono" Jonassen	ZL1UPJ		<a href="mailto:zl1upj@nzart.org.nz">zl1upj@nzart.org.nz</a>
Colin McEwen	ZL2CMC	849 2492	
Raymond McNickle	ZL1RGM	827 0304	
Terry O'Loan	ZL1TNO	824 7561	<a href="mailto:zl1tno@nzart.org.nz">zl1tno@nzart.org.nz</a>
Mike Sanders	ZL2MGS	855 1612	<a href="mailto:zl2mgs@nzart.org.nz">zl2mgs@nzart.org.nz</a>
<b>Ham Hum Editor:</b>			
David King	ZL1DGK	847 1320	<a href="mailto:zl1dgk@nzart.org.nz">zl1dgk@nzart.org.nz</a>
<b>Ham Hum Printer:</b>			
John Nicholson	ZL1AUB	846 7477	
<b>ATV Co-ordinators:</b>			
Phil King	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>
Robin Holdsworth	ZL1IC	855 4786	
<b>Market Day Co-ordinator:</b>			<a href="mailto:harcmday@nzart.org.nz">harcmday@nzart.org.nz</a>
Robin Holdsworth	ZL1IC	855 4786	
<b>Webmaster:</b>			
<b>BBS Team:</b>			
Phil King (sysop)	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>
Alan Wallace	ZL1AMW	843 3738	<a href="mailto:zl1amw@nzart.org.nz">zl1amw@nzart.org.nz</a>
Doug Faulkner	ZL4FS	855 1214	
Gavin Petrie	ZL1GWP	843 0326	<a href="mailto:zl1gwp@nzart.org.nz">zl1gwp@nzart.org.nz</a>
<b>Club Custodian:</b>			
Alan Mowry	ZL1UGM	847 7868	
<b>Equipment Officer/Quartermaster:</b>			
Colin McEwen	ZL2CMC	849 2492	
<b>QSL Manager:</b>			
Sutton Burtenshaw	ZL4QJ	856 3832	<a href="mailto:suttonb@slingshot.co.nz">suttonb@slingshot.co.nz</a>
<b>Net Controllers:</b>			
80m net—Phil King	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>
2m net—Phil King	ZL1PK	847 1320	<a href="mailto:zl1pk@nzart.org.nz">zl1pk@nzart.org.nz</a>

## **From the Editor**

We have now had three new hams pass their exam: Brett Pascoe, Shaun McNickle and John Swarbrick. Congratulations to them all and we hope to hear them soon with their new callsigns.

Upcoming Events of particular interest to members are :-

The Hamilton Market Day. Saturday 14th August at the Hamilton Table Tennis Club. If you can help with this event please contact Robin ZL1IC or Joni ZL1UPJ. Helpers are required before, during and after the event.

The Annual Club Dinner is upon us again. Instead of a meeting at the clubrooms on 18th Aug we will be at Valentines Restaurant at 6.30pm on 18th August.

Kairangi Hillclimb is coming up in September. This is a fun day with Vintage and Veteran vehicles of all ages and shapes.

**Next Committee Meetings -  
4th August & 1st September**

## **SB PROP ARL ARLP030**

### **ARLP030 Propagation de K7RA**

Sunspot activity increased again this week, but on Tuesday and Wednesday (July 27-28), a stiff solar wind increased Earth's geomagnetic activity, which is a negative for HF propagation.

Sunspot group 1089 grew, shrunk, and is growing again, visible a total of 12 days as of early Friday. Three more sunspot groups appeared this week, with the latest, 1092 rapidly emerging on Wednesday with a relative size of 180 millionths of a solar hemisphere, growing to 210 on Thursday. The relative size of group 1089 for July 19-29 was 130, 150, 310, 240, 200, 160, 140, 100, 70, 90 and 140. Unfortunately, 1089 will shortly be out of view, rotating across our Sun's western horizon.

Last week's bulletin ARLP029 mentioned rising weekly solar flux averages (our reporting week for data at the bottom of each bulletin runs from Thursday through Wednesday) and for the last four weeks it was 72.8, 79.2, 80.6 and 85.3. Average daily sunspot numbers over the same weeks were 16, 18.9, 21.7 and 35.6.

Although the average for this week was greater than last, a glance at a table of sunspot numbers at <http://www.swpc.noaa.gov/ftpdir/indices/DSD.txt> shows that the highest sunspot numbers for July were really centered around the seven days from July 20-26.

Predicted solar flux (as of Thursday) is 87 for Friday and Saturday (July 30-31), 85 on August 1-3, and 87 on August 4-6. Predicted planetary A index for those days is 8 on July 30-31 and 5 on August 1-9. This is from the USAF and NOAA forecast at <http://www.swpc.noaa.gov/ftpmenu/forecasts/45DF.html>, released daily around 2100z.

Geophysical Institute Prague seems to agree with NOAA/USAF, predicting quiet to unsettled conditions for July 30-31, and quiet conditions August 1-5.

Steve Daniel, NN4T of Murfreesboro, Tennessee posed an interesting question in an email this week. "As the 6 meter sporadic E season winds down (at least it

seems to be winding down here in Tennessee) I find myself thinking back to the 2000/2001 time frame when I was first on 6. That was at or near the peak of the last cycle and F2 propagation on 6 seemed quite common. How high does solar activity have to be for F2 propagation on 6 meters to occur?"

I posed that question to Carl Luetzelschwab, K9LA, and to several others, including Jon Jones, N0JK and Vince Varnas, W7FA.

Vince commented, "The key to 6 meter F2 is solar flares. These briefly enhance the F layer, raising the MUF to and above 50 MHz. In cycle 19 it seemed to some as if there were daily openings to Europe, South America, Africa and/or Japan. Such was not the case. Even then, F2 was not a daily occurrence for most of us living in the U.S. It is unlikely that we will ever have solar flux/sunspot levels high enough to produce the same daily consistency and dependability of F layer openings as is seen on 20 meters. The bottom line is the higher the SSN/solar flux, the more likely to see solar flares producing temporarily high enough MUF levels to cause F layer propagation on 6 meters".

Jon noted that assuming lower activity during the current solar cycle 24, there will be far less F2 propagation on 6 meters than in cycle 23.

"From North America the 6 meter F2 propagation with low sunspot numbers will be to South America and possibly Hawaii. Unlikely for openings to Europe, Asia, Africa, etc. Big CMEs (Coronal Mass Ejections) can occur at any time, even weak solar cycles. Recall the Carrington solar flare of 1859 (the largest on record) occurred during a weak solar cycle. However we may have to wait a while until the next 'Carrington Flare' as ice cores show these major solar events happen only once per 500 years."

Jon continued, "The primary terrestrial long haul 6 meter DX mode for a weak cycle 24 will be E-layer for mid-latitude stations. TEP (Trans-Equatorial Propagation) occurs even with low solar fluxes for stations located at appropriate distances from the geomagnetic equator. Occasional Es linking to TEP will take place. JT-65a EME will play an increasing role for 6 Meter DXers".

Jon provided an excellent review of 6 meter F2 propagation by Jim Kennedy K6MIO/KH6, at <http://www.uksmg.org/content/f2propagationmech.htm>.

Carl referred us to his excellent article "Predicting 6 Meter F2 Propagation", which you can read on his web site.



**Hamilton Market Day**  
**Saturday, 14th August 2010**  
**Waikato Table Tennis Clubrooms**  
**Edgecumbe St (off Ulster St)**  
**Doors open 10am**



**NICKY WAGNER MP Christchurch Central**  
**Visits 5th ZL3 Radio Buildathon in Christchurch**  
**NZ**

Christchurch's youngest licensed radio amateur, radio callsign ZL3LD, with MP Nicky Wagner  
[www.nickywagner.co.nz](http://www.nickywagner.co.nz) [July 08, 2010]

As part of CCC Kidsfest 2010 [www.kidsfest.co.nz](http://www.kidsfest.co.nz) the 2nd in a series of three ZL3 Radio Buildathons was held in Burnside, Christchurch, July 8th.

Designed to introduce electronic construction and amateur radio to Christchurch youth, an enthusiastic group of 15 builders completed their AM Broadcast radio receivers in record time. All worked!



Builders also came from as far away as Timaru and Hamilton NZ, plus Asia and Egypt.

Nicky Wagner MP was presented by David ZL3DWS with a wide ranging History of Amateur Radio in N Z written by Ian Dougherty.

She then spent an hour meeting the children and local radio amateurs who gave of their time to ensure each radio worked!

At total of 44 parents, children and radio amateurs joined in the fun, sponsored by the Christchurch City Council, NZART Radioscience Education Trust Inc, N Z Vintage Radio Society Christchurch and Branches 05, 56, 68 of NZART and C.A.R.D.S.



Nicky Wagner MP Christchurch Central and the technology and communication experts of the future, at ZL3 Radio Buildathon, Christchurch July 8th, 2010.

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## ROS mode development definitely continues

It appears that the author of the new amateur radio digital mode software **ROS** has had a change of heart, and has reversed his earlier decision to discontinue development work on the project.

The GB2RS website reports:

GB2RS are delighted to confirm that the author of ROS has definitely decided to continue development work.

The software's author, Jose Alberto Nieto Ros, told GB2RS that he will be implementing new modes and enhanced facilities.

The most recent development is an auto reporting system linked into the PSK-Reporter system at <http://pskreporter.info/pskmap.html>.

The latest version of ROS is available for download at <http://rosmodem.wordpress.com>.

-Southgate ARC

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## **New world record on 10GHz**

The RSGB report that a new world record in distance on 10GHz has been established between the Cape Verde islands and southern Portugal.

On 10 July at 10:46 UTC the previous record of 2070km was smashed by a SSB QSO at 2696km during the Hyperatlantica 2010 DXpedition.

A detailed report will appear in the September 2010 RadCom but in the meantime details, in French, can be found at [www.hyperatlantica.ch](http://www.hyperatlantica.ch).

Congratulations to all involved.

-GB2RS



## Vanuatu DXpedition gets YJ0VK callsign

This DXpedition, with a team of four Australian radio amateurs, will be operating for six days, 0001 UTC on 27 August through to 0100 UTC on 2 September.

Team Leader Chris Chapman VK3QB advises that **YJ0VK** on Vanuatu's main Island of Efate will be on the HF bands, with special attention to the WARC bands.

The stations will be fairly simply yet effective 100 watts feeding vertical and dipole antennas, and an Inverted-L for 160m.

More information is available on the website [yj0vk.vkham.com](http://yj0vk.vkham.com)

Depending on internet availability the plan is to update the online log at least once a day.

The team consists of:

Chris Chapman VK3QB (Leader), Allan Meredith VK2CA (QSL Manager & Webmaster), Luke Steele VK3HJ and Benton Vowles VK3CBV.

-Jim Linton VK3PC



## MAKE MAGAZINE BLOG PRESENTS \$8,000 DIY HAM SATELLITE KIT

If you have ever wanted your own personal ham radio satellite but thought it was financially out of reach, the Make Magazine blog carries a short item on a satellite that can be yours for just \$8,000.

Called a TubeSat, the magazine says that the kit for a tiny bird from Interorbital Systems that is designed to function as a basic satellite bus or as a simple stand-alone satellite. Included are the satellite's structural components, printed circuit board.

electronic components, solar cells, and everything needed to build the satellite. Also included are the required programming tools.

Make's blog says that with these components alone, the builder can construct a satellite that puts out enough power to be picked up on the ground by a hand-held amateur radio receiver. It says that simple applications include broadcasting a repeating message from orbit or programming the satellite to function as a private orbital amateur radio relay station.

Interorbital Systems says it can deploy 32 of these tiny satellites simultaneously on a Neptune 30 launcher from the Pacific island of Tonga. The first launch is slated for the end of the year. These satellite will go into a very low Earth orbit and would probably have a lifetime of only a few months.

If you have an extra \$8000 and want to be the first with his or her own personal ham radio satellite you can read more about the concept on line in the MAKE magazine blog at [tinyurl.com/personalbird](http://tinyurl.com/personalbird).

We will have more ham radio space related news later on in this weeks Amateur Radio Newslite report.

-WIA, Southgate, MAKE Blog



## **EMERGING TECHNOLOGY: TWISTING CRYSTALS**

Chemists in the United States and Russia have created crystals that can twist and untwist. This they say points to a much more varied process of crystal growth than previously thought and could pave the way for new electronic products. Bill Pasternak, WA6ITF, is in the newsroom with the details:

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Crystal growth has traditionally been viewed as a collection of individual atoms, molecules, or small clusters adding to a larger block that remains in a fixed translational relationship to the rest. But the New York University and St. Petersburg State University chemists have discovered a wholly new phenomenon for growth in a crystal structure that continually changes its shape as it grows.

To do this, the researchers focused on crystals from hippuric acid which is a derivative of the amino acid glycine. As molecules were added to the end of fine crystalline needles, stresses built up at the tips of the crystals and resulted in a helical twist. The process was reversed when crystals thickened from the opposite end of the growing tip thereby undoing the twisted formations.

The researchers work, which appears in the latest issue of the Journal of the American Chemical Society, may explain some of the properties of high-polymers. These are used in clothing and liquid crystal displays, among other consumer and telecommunications products.

For the Amateur Radio Newslines, I'm Bill Pasternak, WA6ITF, in Los Angeles.

You can read more on this fascinating scientific breakthrough on-line at [tinyurl.com/crystaltwist](http://tinyurl.com/crystaltwist). (Science Daily)

## Upcoming Happenings & Events

<i>Date</i>	<i>Happenings &amp; Events</i>
2nd August	HF Net, 3.575 MHz, 19:30
3rd August	VHF Net, 146.525 MHz, 20:00
<b>7th August</b>	<b>Waitakere Sprints (CW)</b>
<b>7th August</b>	<b>NZART Boat Anchor Sprint</b>
<b>7-8 August</b>	<b>NZART Brass Monkey Contest</b>
<b>8th August</b>	<b>NZART HQ Info-Line</b>
9th August	HF Net, 3.575 MHz, 19:30
10th August	VHF Net, 146.525 MHz, 20:00
<b>14th August</b>	<b>Hamilton Market Day</b>
<b>14-15 August</b>	<b>WIA VK Remembrance Day</b>
<b>14-15 August</b>	<b>International Lighthouse/Lightship Week-end</b>
16th August	HF Net, 3.575 MHz, 19:30
17th August	VHF Net, 146.525 MHz, 20:00
<b>18th August</b>	<b>Annual Club Dinner</b>
<b>21st August</b>	<b>Te Puke Club Mid-Year Luncheon</b>
<b>22nd August</b>	<b>NZART HQ Info-Line</b>
23rd August	HF Net, 3.575 MHz, 19:30
24th August	VHF Net, 146.525 MHz, 20:00
<b>28th August</b>	<b>ALARA Contest</b>
<b>29th August</b>	<b>NZART Official Broadcast</b>
30th August	HF Net, 3.575 MHz, 19:30
31st August	VHF Net, 146.525 MHz, 20:00

**5th September—NZART HQ Info-Line**  
**6th September—NZART Doug Gorman Freq Measuring Contest**  
**11th September—NZART Nostalgia Night**  
**12th September—Kairangi Hillclimb (AREC)**  
**15th September—General Meeting**  
**19th September—NZART HQ Info-Line**  
**26th September—NZART Official Broadcast**  
**2nd October—Oceania All Bands SSB**  
**2-3 October—NZART Microwave Contest**  
**3rd October—NZART HQ Info-Line**  
**9th October—Western Suburbs Equipment Sale**  
**9th October—Oceania All Bands CW**  
**16-17 October—JOTA/JOTI**  
**17th October—NZART HQ Info-Line**  
**31st October—NZART Official Broadcast**  
**6th November—NZART Straight Key Night**  
**13th November—NZART Boat Anchor Sprint**  
**13th November—GlobalSET**  
**4-5 December—NZART VHF/UHF/SHF Field Day Contest**  
**4-5 December—KDMG Twin Sprint**  
**March 2011—Colville Connection (AREC)**  
**22-25 April 2011—VHF Convention (Wellington)**  
**4-5 June 2011—NZART Conference (Upper Hutt)**

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

## AREC Event Operators Page

<b>WRC Rally NZ/ Possum Bourne Rally</b>	2011	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>	November 2010	Organiser : <b>ZL1UPJ</b>
<b><u>Position</u></b>	<b><u>Saturday Operator</u></b>	<b><u>Sunday Operator</u></b>
<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>	Malcolm St	
<b>I.</b>	Narows	
<b>J.</b>	Field Days	
<b>K.</b>	Between Pipe and F/Days	
<b>L.</b>	High Level Bridge	

<b>Kairangi Hill Climb</b>	<b>Sunday 12th September 2010</b>		<b>Organiser : ZL1IC</b>
<u>Position</u>	<u>Operator</u>		
1.			
2.			
3.			
4.			
5.			
<b>School Cycling</b>	<b>3-4 July 2010</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>March 2011</b>		<b>Organiser :</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 By</b>			

For Details about and to help with 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://z11ux.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: Exam information image from <http://www.nzart.org.nz/exam/index.html>*

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