

# Ham Hum

April 2010



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



**Next General Meeting**

**21 April : 7:30pm**

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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>Acting 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**

I was speaking to one of our committee members the other day and he has some great plans for how we can be even more effective as an Amateur Radio club. Long term repeatable results rather than “flash in the pan” type ideas. And with Br 74 already making “joking” comments about what theme we will have for the National System Award in 2011, I think things are looking very very good.

I missed the AREC Section meeting in the last issue of Ham Hum. My apologies for that, and future ones are now listed in upcoming events on pages 11 & 12.

Upcoming Morse Code course.

The club will be running a course for members to bring their CW up to standard. Our instructor only asks one thing of you if you want to take part. You need to know Morse Code before you start the course. Keep watching for further details.

Subscriptions.

With the AGM over for another year, subs are now due for 2010. Some members received reminder forms with last months Ham Hum, while others will receive reminders with this months issue. If you have already paid, many thanks, and I've tried to make sure you don't receive another reminder. Deadline for payments is the end of May 2010.

I have included a blank membership form with the eMail version of this issue which you are welcome to pass on to others who might be interested in joining.

## **Next Committee Meetings - 7th April & 5th May**

## **SB PROP ARL ARLP013**

### **ARLP013 Propagation de K7RA**

Even though this bulletin may arrive a little early (due to the Good Friday holiday on April 2) jokesters are still too late for sneaking any first of April pranks into this bulletin. No matter when you read it, this bulletin is dated April 2 for good reason. Your bulletin editor serves as a solid wall against nonsense. Do not think of us as humorless, for your editor has enjoyed perpetrating many elaborate pranks, japes, and stunts, but never on April 1 (because that might give it away) and never in this bulletin (standing on principle). Also, we prefer to be perpetrators rather than recipients.

The solar report in Thursday's ARRL Letter attempted to correct some slightly faulty data regarding sunspot group numbers and their dates of emergence, but the result was more wrong than what it was attempting to correct. All of it is my fault. Now we see the problems, which included not looking back far enough to find the dates that regions emerged, and forgetting that the date of our source is the day after the date the data was gathered. The summaries are available for all to check at <http://www.swpc.noaa.gov/ftpmenu/forecasts/SRS.html>.

Sunspot group 1056 emerged earlier than reported, back on March 17, and was gone on March 24. The area it covered (all areas are in units of one-millionth of the solar hemisphere) on March 17-23 was 20, 50, 10, 30, 70, 50 and 5.

On March 23 new sunspot group 1057 appeared, and through March 31 the area it covered was 5, 240, 400, 320, 380, 410, 290, 260 and 250. It is still with us.

On March 25 a small group, 1058 appeared, and only lasted two days. The area it covered was just 1 and 5. On March 27, group 1058 became a "plage without spots". What is a plage? In this context, not a beach at a seaside resort, but a bright region in the solar chromosphere, in this case minus any spots.

March 27, group 1059 emerged, and through March 31 the size was 120, 100, 150, 130, and 70. 1059 never became as large as 1057.

Average daily sunspot numbers for the week were up over 4 points to 28.9, and average daily solar flux changed from 84.2 to 84.9. The renewed sunspot activity seems constant and steady. We have new 3-month moving averages of daily sunspot numbers through the end of March, which is centered on February, and the number has increased a few points from last time. The 3-month moving average of daily sunspot numbers centered on July 2009 through February 2010 was 4, 4, 4.6, 7.1, 10.2, 15.2, 22.4 and 25.7. The rate of increase has slackened, but it steadily moves higher.

Last week we reported that the trailing 50-day moving average of daily sunspot numbers for the prior week was 27.34, 28.18 for the end of last week. This week, ending on March 31, the trailing 50 day average is 26.8.

No report yet from Geophysical Institute Prague, and the April 1 NOAA prediction is not available either, but the March 31 prediction had solar flux at 80 through April 2, then dropping to 75 (is that an expectation for zero sunspots?) for April 3-5, then back to 80 on April 6-10.

The report also predicted quiet planetary A index of 5 through April 5, then values of 7, 7, 8, 5 and 5 for April 6-10.

For more information concerning radio propagation, see the ARRL Technical Information Service at <http://www.arrl.org/tis/info/propagation.html>. For a detailed explanation of the numbers used in this bulletin, see <http://www.arrl.org/tis/info/k9la-prop.html>. An archive of past propagation bulletins is at <http://www.arrl.org/w1aw/prop/>. Monthly propagation charts between four USA regions and twelve overseas locations are at <http://www.arrl.org/gst/propcharts/>.

Sunspot numbers for March 25 through 31 were 25, 27, 30, 33, 32, 32, and 23 with a mean of 28.9. 10.7 cm flux was 87.6, 85.9, 88.1, 86, 83.2, 82.8 and 81 with a mean of 84.9. Estimated planetary A indices were 5, 4, 3, 7, 4, 5 and 4 with a mean of 4.6. Estimated mid-latitude A indices were 4, 2, 1, 4, 5, 4 and 5 with a mean of 3.6.

## **NIST's Second 'Quantum Logic Clock' Based on Aluminum Ion is Now World's Most Precise Clock**

Physicists at the National Institute of Standards and Technology (NIST) have built an enhanced version of an experimental atomic clock based on a single aluminum atom that is now the world's most precise clock, more than twice as precise as the previous pacesetter based on a mercury atom.

The new aluminum clock would neither gain nor lose one second in about 3.7 billion years, according to measurements to be reported in *Physical Review Letters*.\*

The new clock is the second version of NIST's "quantum logic clock," so called because it borrows the logical processing used for atoms storing data in experimental quantum computing, another major focus of the same NIST research group. (The logic process is described at [http://www.nist.gov/public\\_affairs/releases/logic\\_clock/logic\\_clock.html#background](http://www.nist.gov/public_affairs/releases/logic_clock/logic_clock.html#background).) The second version of the logic clock offers more than twice the precision of the original.

"This paper is a milestone for atomic clocks" for a number of reasons, says NIST postdoctoral researcher James Chou, who developed most of the improvements.

In addition to demonstrating that aluminum is now a better timekeeper than mercury, the latest results confirm that optical clocks are widening their lead—in some respects—over the NIST-F1 cesium fountain clock, the U.S. civilian time standard, which currently keeps time to within 1 second in about 100 million years.

Because the international definition of the second (in the International System of Units, or SI) is based on the cesium atom, cesium remains the "ruler" for official timekeeping, and no clock can be more accurate than cesium-based standards such as NIST-F1.

## Call for papers - 2010 ARRL/TAPR Digital Communications Conference

Technical papers are solicited for presentation at the 29th Annual ARRL and TAPR Digital Communications Conference to be held September 24-26, 2010 in Vancouver, Washington [Portland, Oregon].

These papers will also be published in the Conference Proceedings (you do NOT need to attend the conference to have your paper included in the Proceedings). The submission deadline is July 31, 2010.

Please send papers to:

Maty Weinberg  
ARRL  
225 Main St  
Newington, CT 06111

or you can make your submission via e-mail to: [maty@arrl.org](mailto:maty@arrl.org)

Papers will be published exactly as submitted and authors will retain all rights.

-Steve, WB8IMY

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## History This Week

*A look back at events that made history **this week** -  
compiled by the Summerland Amateur Radio Club of Lismore, NSW*

### **Monday, 29 March, 2010**

**1826** Samuel Morey of Oxford, New Hampshire patented the internal combustion engine.

**1880** The first electric street lights installed by a municipality, Wabash, Indiana,

USA.

**1889** The Eiffel Tower opened for the Paris Exposition.

**1910** First military wireless message sent in Australia, Helensburgh, Sydney.

**1921** Formation of the Australian Air Force, 'Royal' added 31 Aug 1921.

**1995** US Coast Guard last Morse message ending over 100 years use.

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## Yorkshire space enthusiast records Earth using balloon

BBC news and the Daily Mail newspaper have reported how a Yorkshire space enthusiast **Robert Harrison, 2E0RJH** managed to get high altitude pictures of the earth.

Robert 2E0RJH, a training instructor at the Wakefield & District Radio Society, developed the balloon-mounted camera project for just £500 and it took spectacular images of the earth from a height of 35km.

Read the BBC news report and video at  
[http://news.bbc.co.uk/1/hi/england/west\\_yorkshire/8587749.stm](http://news.bbc.co.uk/1/hi/england/west_yorkshire/8587749.stm)

Daily Mail Story with picture of Richard Harrison 2E0RJH with what looks like an FT-817 and 70cm yagi  
<http://www.dailymail.co.uk/sciencetech/article-1260323/British-aerospace-enthusiast-takes-NASA-style-photographs-using-helium-balloon-pocket-camera.html>

The pictures taken can be seen at  
<http://www.robertharrison.org/>

Wakefield & District Radio Society  
<http://www.wdrs.org.uk/>

The APRS system developed by Radio Amateurs is now used to track many High Altitude Balloon (HAB) Test flights

APRS and Ballooning  
PowerPoint  
<http://www.eoss.org/aprs/APRSballoons2.ppt>



Amateur Radio Automatic Packet Reporting System (APRS)  
<http://www.aprs.org/>

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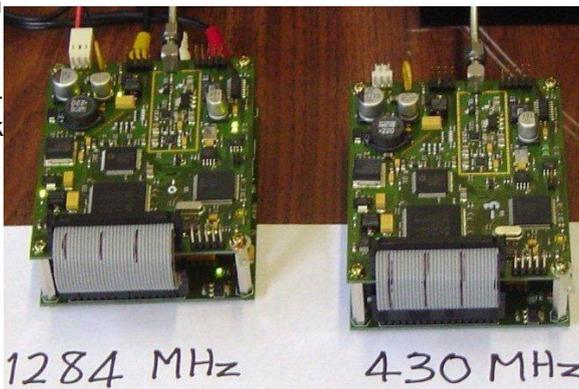
## Digital ATV "On-Air"

The following report by ZL2TGQ...

At their Group Meeting held on Thursday 25th March, Members were impressed with the inaugural transmission of digital ATV.

This project has now reached the stage where two sets of transmission equipment have been commissioned, one on 1284 MHz and the other on 430MHz. This result comes from the import of modules from a German supplier and a fair bit of work by, in particular, ZL2TAR, ZL2TVM, ZL2TGQ and with advice from ZL2TIQ.

The 1284 MHz transmitter was used for this test transmission, and had an output level of 5 mW,



which was more than adequate for “across-the-room” communication. The signal was received on a commercial digital receiver, with a simple quarter-wave (55mm) whip antenna.



The equipment was next displayed to over 200 Amateurs at the combined Branch EXPO 2010 held at Lower Hutt on Saturday 27th March. Here, in addition to a local digital receiver close by the transmission equipment, a remote digital receiver was located outside the main hall in the foyer to greet visitors arriving at the EXPO. On this occasion the frequency used was once again 1284 MHz, with the 5 mW power boosted to 300 mW by a linear amplifier constructed by ZL2TAR.

Many compliments were expressed, both on the progress of the DATV project, and the quality of the received video.

## **RESCUE RADIO: CHILIAN HAMS DRAW PRAISE FOR RESPONSE TO QUAKE**

There has been high praise for the Radio Club of Chile and its members following the recent earthquake and its aftershocks. At least one television news report describes the Chilean radio amateurs as a group of dedicated operators scattered across the country, proving to be an information lifeline during recent events.

According to news reports, while telephones and the internet largely failed, many of the radio operators had back-up power and were able to provide vital lines of communication. These were picked up by National Radio Chile and rebroadcast, giving status information of the various affected areas. The report went further to say that claims that ham radio is dying were put to rest as these operators provided some truly vital communication links.

For its part, the Radio Club of Chile has expressed its thanks to the world's radio amateurs for keeping emergency frequencies free during their nation's time of need. (GB2RS)

## Upcoming Happenings & Events

<i>Date</i>	<i>Happenings &amp; Events</i>
<b>3-4 April</b>	<b>NZART Low Band Contest</b>
<b>4th April</b>	<b>NZART HQ Info-Line</b>
5th April	HF Net, 3.575 MHz, 19:30
6th April	VHF Net, 146.525 MHz, 20:00
<b>10-11 April</b>	<b>Thelma Souper Memorial</b>
12th April	HF Net, 3.575 MHz, 19:30
13th April	VHF Net, 146.525 MHz, 20:00
<b>17th April</b>	<b>KDMG RTTY Sprint 80m</b>
<b>18th April</b>	<b>NZART HQ Info-Line</b>
19th April	HF Net, 3.575 MHz, 19:30
20th April	VHF Net, 146.525 MHz, 20:00
<b>21st April</b>	<b>General Meeting</b>
<b>24th April</b>	<b>KDMG RTTY Sprint 40m</b>
<b>25th April</b>	<b>NZART Official Broadcast</b>
26th April	HF Net, 3.575 MHz, 19:30
27th April	VHF Net, 146.525 MHz, 20:00

**1st May—Rotorua Marathon (AREC)**  
**6-9 May—40th WRC Rally New Zealand (AREC)**  
**8th May—NZART Boat Anchor Sprint**  
**9th May—NZART HQ Info-Line**  
**10th May—Break-In copy due**  
**15-16 May—NZART Sangster Shield Contest (CW)**  
**19th May—General Meeting**  
**23rd May—NZART HQ Info-Line**  
**30th May—NZART Official Broadcast**  
**5-7 June—NZART Conference (Auckland)**  
**8th June—NZART Official Broadcast**  
**12-13 June—NZART Hibernation Contest**  
**13th June—NZART HQ Info-Line**  
**27th June—NZART Official Broadcast**  
**27th June—NZART HQ Info-Line**  
**30th June—AREC Section Meeting (AREC)**  
**3rd July—NZART Memorial Contest**  
**10-11 July—IARU HF World Championship**  
**24th July—Waitakere Sprints (Phone)**  
**7th August—Waitakere Sprints (CW)**  
**7th August—NZART Boat Anchor Sprint**  
**7-8 August—NZART Brass Monkey Contest**  
**August—Hamilton Market Day**  
**21-22 August—Lighthouse Weekend—ILLW**  
**September—Kairangi Hillclimb (AREC)**

## AREC Event Operators Page

<b>WRC Rally NZ/ Possum Bourne Rally</b>	<b>Saturday 6-9 May 2010</b>	<b>Organiser : 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>	<b>November 2010</b>	<b>Organiser : 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 September 2010</b>		<b>Organiser : ZL1IC</b>
<u>Position</u>	<u>Operator</u>		
1.			
2.			
3.			
4.			
5.			
<b>School Cycling</b>	<b>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: Amateur Radio on The Simpsons (TV Show). This "rig" belongs to Marge's sister, Selma.*

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