Ham Hum

December 2012

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

Next Meeting :

Club BBQ—8th Dec 11am

BYO

Contact Details 2012

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NZART Examiners:	ZL1IC, ZL1PK & ZL1TJA		

From the Editor

Another year comes to an end and we will soon be welcoming in 2013. It was a very sad time for the club as our patron of many years Fin ZL4HI became silent key. His funeral was a great send off for all he had achieved in life.

Our club has done great this year, starting with a very well run National System Award though to the annual Ski Race down the Waikato River. We are a very strong and competent club and I can see that 2013 will be another great year for us all.

ZL9HR is now active on Campbell Island. Campbell Island (Motu Ihupuku) is a remote, uninhabited, subantarctic island of New Zealand and the main island of the Campbell Island group. It covers 112.68 square kilometres (43.51 sq mi) of the group's 113.31 square kilometres (43.75 sq mi), and is surrounded by numerous stacks, rocks and islets like Dent Island, Folly Island (or Folly Islands), Isle de Jeanette Marie, and Jacquemart Island, the latter being the southernmost extremity of New Zealand. The Island is mountainous, rising to over 500 metres (1,640 ft) in the south. A long fjord, Perseverance Harbour, nearly bisects it, opening out to sea on the east coast.

Campbell Island is inscribed in the UNESCO World Heritage list together with the other subantarctic New Zealand islands in the region as follows: 877-005 Campbell Island S52.33 E169.09 11331 Ha 1998

The island holds the distinction of being the most remote location (on a significant piece of land) from London, England and from Dublin, Ireland.

Next Committee Meetings - 5th December & 16th January

The K7RA Solar Update

26/11/2012

In November 16 edition of the Solar Update, we reported that the average daily sunspot number on November 8-14 was 104.9. In the next seven day reporting period -- November 15-21 -- the average was 126.9, making for a nice increase; with solar flux, the average over the previous period was 129.5. In the most recent period, the average daily sunspot number increased to 138.9. In the four days since the last reporting period ended (November 22-25), the sunspot numbers were weakening at 93, 85, 87 and 64, and the solar flux was 127.7, 126.7, 118 and 121.6.

Sunspot numbers for November 15-21 were 132, 141, 163, 136, 122, 119 and 75, with a mean of 126.9. The 10.7 cm flux was 141.7, 138.3, 135.5, 141, 133.9, 141.2 and 140.4, with a mean of 138.9. The estimated planetary A indices were 3, 5, 7, 5, 4, 11 and 7, with a mean of 6. The estimated mid-latitude A indices were 3, 5, 7, 4, 3, 10 and 7, with a mean of 5.6.

The latest prediction from NOAA/USAF as of Sunday, November 25 has the solar flux at 120 on November 26, 115 on November 27, 110 on November 28, 105 on November 29-30, 100 on December 1-3, 120 on December 4, 125 on December 5-6, 130 on December 7-11, 135 on December 12-15, and peaking at 140 on December 16-17. It then drops to a minimum of 110 on December 26-28 before rising again.

The planetary A index is predicted at 11 and 15 on November 26-27, 8 on November 28-29, 10 on November 30, 8 on December 1, 5 on December 2-4, 10 on December 5-8, 5 and 8 on December 9-10, 5 on December 11-15, 8 on December 16, and down to 5 on December 17-31.

On November 19, Jon Jones, N0JK, of Lawrence, Kansas, reported sporadic E propagation on 6 and 10 meters: “I heard the W4CHA/b in grid square EL88 on 50.079 MHz via E skip around 1740 UTC. No live ops around. About 10 minutes earlier, I worked the PT0S DXpedition while on fixed mobile on 10 meters SSB. I was running 100 W and a mag mount whip antenna on the car. PT0S peaked up to 10 over S-9. I was on a high ridge with a clear shot to PT0S across the Wakarusa River Valley, which helped.”

PT0S was the DXpedition to St Peter and Paul Rocks, which sits in the mid-Atlantic Ocean at 0.9169 degrees north, 29.335 degrees west. We received another interesting report forwarded by Frank Donovan, W3LPL, of Glenwood, Maryland. The report comes from last Thursday, November 22, and was written by George Wallner, AA7JV, who was on the DXpedition:

"During the short openings to Japan, the demand is very strong and pile-ups have very high densities that make copy difficult. Still, we are happy as we have more than 2500 Japanese contacts in the log.

"There was a very good opening late afternoon on 6 meters. Interestingly, just a few minutes before the opening, 20, 17 and 15 meters went almost completely dead. I was operating 20 meters CW and had a huge pile-up. Within one minute, the pile-up completely disappeared. There was not even one weak signal to be heard. Almost instantly, the 6 meter radio came alive and we had more than 200 QSOs in 90 minutes, mostly with Southern Europe. A very nice surprise! Twenty, 17 and 15 meters recovered within a few minutes and we had big pile-ups going 15 minutes after the beginning of the disturbance.

"We got on 160 meters just after sunset at 2000. We could hear European stations working each other, but nobody could hear us. We switched over to 80 meters, where conditions were worse; 80 sounded like a bad 160. We then moved to 40 meters and worked both CW and SSB for a few hours, returning to 160 meters at 2145, by which time 160 was in decent shape and we were able to work a steady stream of European stations until about 1230 when conditions deteriorated. We the switched the main station between 40 and 160 meters a few times, trying to make QSOs while keeping our fingers in the 160 meter pie. We finished with 160 at sunrise, but could not hear any Japanese stations, just the odd North American caller, with mostly weak to very weak signals. We quickly changed over to 40 at 0730 where we were able to work a steady stream of Japanese stations until about 0830, when the band suddenly closed. Meanwhile, the second station was working North America, Europe and Japan on 80 meters, under good conditions until 0800."

The disruptions George spoke of were no doubt triggered by one or more of the several coronal mass ejections (CMEs) that our Sun spewed forth last week.

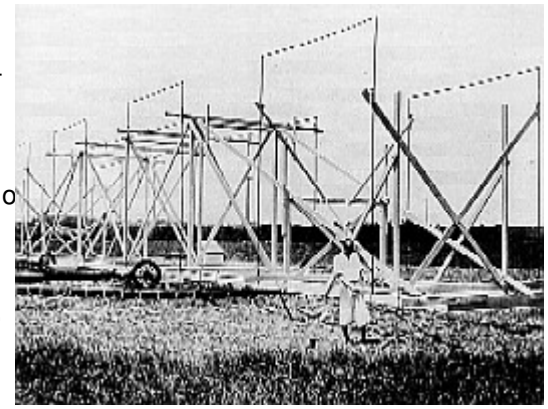
All times listed are UTC, unless otherwise noted.

Amateur solar observer Tad Cook, K7RA, of Seattle, Washington, provides this weekly report on solar conditions and propagation. This report also is available via W1AW every Friday, and an abbreviated version appears each Thursday in **The ARRL Letter**. *You can find a guide to articles and programs concerning propagation* ***here***. *Check* ***here*** *and* ***here*** *for a detailed explanation of the numbers used in this bulletin. An archive of past propagation bulletins can be found* ***here***. *You can find monthly propagation charts between four USA regions and 12 overseas locations* ***here***. *Readers may contact the author via* ***e-mail***.

Birth of Radioastronomy (VIII)

With the invention of radio, Thomas Edison was probably the first to recognize the possibility to listen signals emitted by stars. Professor A.Kennelly, one of Edison's assistant, suggested in 1890 an experiment going in that direction. In a letter addressed to a astronomer working at Lick Observatory, he suggested among others : "Simultaneously, to the electromagnetic perturbations coming from the Sun, and that we perceive, as you know, in the form of light and heat, perturbations on longer wavelengths are perfectly plausibles. If it was so, we could convert them in sound". Although his experiment was not conclusive, his project went to give birth to a amazing innovaiton, the radioastronomy.

Listening to the sky, in December 1932 the american radioastronomer Karl Jansky from Bell Telephone announced in the Proceedings of the IRE the detection of radio waves emitted from the center of the Milky Way, where at first sight there was no visible source of radiation. Radioastronomy was born. Almost at the same time, an amateur name Grote Reber, W9GFZ, began to look at the sky. A passion for the radioastronomy was growing.



Grote Reber and Radioastronomy

Radioastronomy is a direct descendant of amateur radio. In 1936, the famous Grote Reber, W9GFZ, contacted hams in more than 60 countries and achieved WAC, and thought that "there did not appear to be any more worlds to conquer". After have read Karl Jansky's article in the Proceedings of the IRE, explaining how he discovered the first emission from the centre of the Galaxy, Rebert found a new DX challenge !

He spent the summer holidays of 1937 to build a 10m-diameter parabolic dish antenna made of wood and iron tuned on what he called the "ultra high" frequency of 160 Mc to listen to the celestial bodies. He made also some tests at 900 and 3300

Mc but recorded too much made-made interferences. This is at this occasion that he discovered the radio emissions the Sun, Jupiter storms, the emission of the Milky Way and several deep sky radiosources among them Cygnus-A and Cassiopeia-A.

Working for his own, Reber published his first radio map of the Milky Way in 1939 in the same Proceedings as well as in Nature, confirming Karl Jansky's observations made in 1933 who worked then for Bell laboratories then for the NRAO. Quickly, Reber was integrated in the NRAO team. In the '60s he donated his antenna to the NRAO and is today set up permanently on the NRAO grounds in Green Bank, WV. Meanwhile, Reber continued to study the sky and published many scientific works until the late 1980s. He was a Silent Key in 2002.

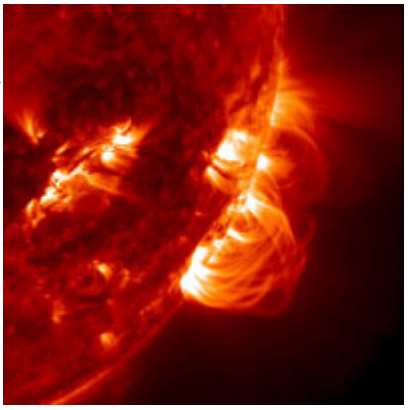
One step closer to "space climate" forecasting

(Nanowerk News) The Sun determines the course of the planets. But the planets may also exert an influence on the Sun. Their configurations appear to be responsible for long-term cycles of increased solar activity. Scientists at Eawag and the ETH Zurich, in collaboration with colleagues from Spain and Australia, have compared cycles of solar magnetic activity over the past 10,000 years – as reconstructed from ice cores – with the action of the planets. The agreement observed is very striking, raising hopes that our ability to forecast periods of intense solar activity may ultimately be improved. This is becoming increasingly important as our society is ever-more dependent on technologies such as satellite communications and navigation systems – as well as power grids – which can be disabled by major solar eruptions.

solar activity

Solar activity The Sun accounts for over 98% of the total mass of our solar system, and its gravitational field keeps the planets in their orbits. To date, the effects exerted by the planets on the Sun have been regarded as negligible – akin to the relation between a gnat and an elephant. But it would seem that a well-placed gnat bite can in fact inflame an elephant, and an international team of scientists has shown that something similar could happen to the elephantine Sun. The relatively small torque exerted by the planets appears to be the cause of the long-term cycles of solar activity. The well-known periodicities of 88, 104, 150, 208 and 506 years observable for the last 10,000 years correspond precisely to the periodic changes in torque exerted by the planets on a thin layer in the solar interior known

as the tachocline. Marking a transition between the radiative and convective zones in the Sun, the tachodine is believed to play a fundamental role in the generation of the solar magnetic field. The scientists suspect that planetary torque may act on this layer in a manner similar to the tidal effects of the Moon on the Earth. Thus, even small changes in the tachodine could affect the occurrence of solar eruptions.



Planets – an external "clock"

In their study, to appear soon in Astronomy & Astrophysics ("Is there a planetary influence on solar activity?"), the lead authors José Abreu (Eawag/ETHZ) and Jürg Beer (Eawag/ETHZ) show why they find the idea of planetary influence so convincing. Tracing the five most prominent periodicities of solar activity back over the last 10,000 years, they observed that the peaks and troughs reappear with precisely the same periodicity even after being attenuated or vanishing altogether for some time. Beer concludes: "Everything points to an external 'clock', and that can really only be the planets."

Archive of cosmogenic radionuclides in polar ice

Direct evidence of the number of sunspots (a measure of solar activity) has only been available for about 400 years – the era of telescopic observations. Anyone wishing to trace the history of solar activity further back over the last 10,000 years has to rely on indirect evidence. This evidence was obtained from polar ice cores (from Greenland and Antarctica), in which radionuclides produced by cosmic rays are stored. During the Sun's quiescent periods, more cosmic rays enter the atmosphere – with increased production of radionuclides – as the blocking effect of the solar magnetic field is weaker. In addition to ice-core beryllium (10Be) data, the authors also used tree-ring carbon (14C) data for their study. Both time series show excellent agreement.

Improved understanding of the Sun

Abreu and Beer are still describing their conclusions cautiously as a "hypothesis"; however, if the team's findings are confirmed, they will be of major importance. Firstly, should help to improve our understanding and to develop more realistic models of the Sun. In addition, they could help to generate more reliable forecasts of the "space climate" or even "space weather" – a matter of great importance for longer space voyages. But those of us who remain earthbound are also affected by solar magnetic activity, as our society is increasingly reliant on vulnerable technical installations (see Box).

Vulnerable electronic systems

Superflares are massive eruptions of solar plasma, hurling billions of tonnes of gas into the atmosphere and causing magnetic storms in space and on the Earth. Satellites, aircraft avionics, power grids, radio signals and many other systems could be disrupted or destroyed by an event of this kind. In 1859, the solar flare observed by the British astronomer Richard Carrington only disrupted the telegraph networks which had recently been established in Europe and North America. Today, it is estimated that a geomagnetic storm of the same magnitude would cause around two trillion (2x1012!) dollars' worth of immediate economic damage in the US alone. Whether an improved understanding of solar magnetic activity will help to predict the frequency and intensity of such eruptions remains an open question. As Jürg Beer admits, "Storm warnings are still a long way off." But the recent research takes us one step closer towards being able to give a better explanation of the longer-term "space climate".

Source: ETH Zurich/Eawag

Intrepid journey for remote radio contact

Ten amateur radio operators set out from Bluff yesterday for one of the holy grails of the transmitting world, Campbell Island.

The group, consisting of ham operators from New Zealand, Australia, the United States, Canada, Hungary and Borneo, left Bluff Harbour on the 25-metre yacht Evohe, destined for the remote sub-Antarctic islands.

Expedition leader Tommy Horozakis, of Melbourne, said the purpose of the trip was to erect at least five radio stations and transmit signals around the world for 10 days.

"Thousands of ham radio operators from every continent on Earth will attempt to make contact. We expect to make 60,000 contacts," he said from Bluff before the group weighed anchor.

For many ham operators the ultimate thrill is to receive contact from a list of 340 countries or entities on a list established within the ham community.

The highest-level award requires the applicant to contact all entities on the DXCC list. DXing is the hobby of receiving and identifying distant radio or television signals, or making two-way radio contact with distant stations in amateur radio.

Expedition co-leader John Halkiadakis said the list of entities were ranked on how

difficult they were to make contact with.

"Campbell Island is extremely remote, with the last major ham radio expedition to Campbell Island in January 1999," he said.

"So people have to wait a long time for a chance to make contact with some entities."

Campbell Island ranks at number 11 on the DXCC list. The list is toppped by North Korea, who ban ham radio use, Navassa Island in the Caribbean Sea, Bouvet Island in the South Atlantic Ocean, Yemen, and Heard Island, which is about two-thirds of the way to Antarctica from Madagascar.

Evohe will carry the group along with seven complete radio stations, amplifiers, antennas, more than 1.2 kilometres of cable, four generators and 1100 litres of petrol.

The Department of Conservation has granted the group permits to Campbell Island and use of several of the island's vacant buildings. The expedition is expected to return to Bluff in two weeks.

neil.ratley@stl.co.nz

- © Fairfax NZ News

Whichever way you look at it

New Zealand

is a great place to live !

Introducing ...

KORDIA NATIONAL SYSTEM AWARD 2013

Cities, Suburbs & Towns

A fun event, for all Amateurs. All who submit a log will receive a Certificate.

Starts: Tuesday 1 January 2013 - Closes: midnight Sunday 3 February 2013.

The BIG challenge, how many cities, suburbs and towns can you contact. Simple rules.

+ Contact an Amateur in any City via the National System - Both sender and receiver log 1 Point
+ Contact an Amateur in any Suburb of any City via the National System - Both sender and receiver log 1 Point
+ Contact an Amateur in any Town via the National System - Both sender and receiver log 1 Point
+ Contact a National System Trustee, (refer to Call Book Page 7-4 for list), log five Bonus Points

Cities, Suburbs and Towns may be logged only once. "Town" means any named community.

Logs must be in the hands of the Custodian no later than 28 February 2013, and may be submitted either attached to an E-mail to zl2wa@clear.net.nz with KNSA 2013 in the subject line, or post to,

Kordia National System Award
Wellington VHF Group Inc
PO Box 12259
Thorndon
Wellington 6144

Copies of the Promotion and Log forms are available in PDF (portable document format), from our website at <www.vhf.org.nz>, or from the Award Custodian, via E-mail <zl2tgq@paradise.net.nz>.

The Kordia National System Award 2013 is proudly presented by Wellington VHF Group Inc for the enjoyment of all Amateurs, to emphasize the coverage of the National System, and to recognize the contribution to Amateur radio made by Kordia.

Upcoming Happenings & Events

Date	*Happenings & Events*
1-2 December	**NZART VHF+ Field Day**
2nd December	**NZART HQ Infoline**
3rd December	HF Net, 3.575 MHz, 19:30
4th December	VHF Net, 146.525 MHz, 20:00
8th December	**Annual end-of-year club BBQ**
10th December	HF Net, 3.575 MHz, 19:30
11th December	VHF Net, 146.525 MHz, 20:00
16th December	**NZART HQ Infoline**
17th December	HF Net, 3.575 MHz, 19:30
18th December	VHF Net, 146.525 MHz, 20:00
18th December	**NZART Official Broadcast**
24th December	HF Net, 3.575 MHz, 19:30
25th December	VHF Net, 146.525 MHz, 20:00

16th January 2013—Combined Committee-General meeting

2-3 February 2013—NZART DX Weekend Contest

23-24 February 2013—NZART Jock White Memorial Field Days

2nd March 2013—Paengaroa Junk Sale (Te Puke)

30-31 March 2013—NZART Technology Conference - Auckland

6-7 April 2013—NZART Low Band Contest

13-14 April 2013—NZART Thelma Souper Memorial

20th April 2013—KDMG RTTY 80m

27th April 2013—KDMG RTTY 40m

3rd May 2013—NZART Sangster Shield

1-3 June 2013—NZART Conference—Masterton

8-9 June 2013—NZART Hibernation Contest

1st July 2013—NZART Memorial Contest

27th July 2013—Waitakere Sprints SSB

3rd August 2013—Waitakere Sprints CW

3-4 August 2013—NZART Brass Monkey Contest

2nd September 2013—NZART Doug Gorman Memorial Frequency Measurement Contest

5-6 October 2013—NZART Microwave Contest

7th September 2013—SPAM Nostalgia Night

1st October 2013—NZART/WIA Oceania Contest SSB

2nd October 2013—NZART/WIA Oceania Contest CW

3rd November 2013—ZL1AIH Straight Key Night

1st December 2013—KDMG Twin Sprint PSK & RTTY 80m

7-8 December 2013—NZART Field Day Contest

AREC Event Operators Page

WRC Rally NZ/ Possum Bourne Rally	June 2013	Organiser : ZL1DK
Please contact the Section Leader with your team information and he will pass it on to Auckland.		

Rollo's Marine Bridge to Bridge Water-Ski Race		26-28 October 2013	Organiser : ZL1UPJ
Position		**Saturday Operator**	**Sunday Operator**
Base			
Start Boat			
Rescue Boat			
X-Band			
A.	Ngaruawahia/Taupiri		
	Start/Finish at Point		
B.	Ngaruawahia Ramp		
C.	Ngaruawahia W/S		
D.	Horotiu		
E.	Pukete Ramp		
F.	Days Park		
G.	Fairfield Bridge		
H.	Malcolm St		
I.	Narows		
J.	Field Days		
K.	Between Pipe and F/Days		
L.	High Level Bridge		

Kairangi Hill Climb	September 2013	Organiser : ZL1IC

Position	Operator
1.	
2.	
3.	
4.	
5.	

School Cycling	July 2013	Organiser : ZL1IC

Position	Operator	Position	Operator
1.		5.	
2.		6.	
3.		7.	
4.		8.	

Colville Connection	March 2013	Organiser : ZL1PK

Position	Primary Operator	Secondary Operator	Other Operator
Base			
Stony Bay			
Fletcher Bay			
Hill 1			
Hill 2			
Fantail Bay			
Stand By			

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://zl1ux.tripod.com
eMail:	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 Repeaters:	146.675MHz -600kHz split 438.725MHz -5 MHz split
ATV Repeater:	615.250 Ch39 (off air)

Cover Photo: Image of ZL9HR DX operation at Campbell Island

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