

Ham Hum

April 2011



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
27th April - 18:30

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From the Editor

In place of the normal General Meeting that would have been on the 20th April, we will be having a Club Dinner at Valentines at 1830 on the 27th April. Individual to pay their own bill. Dinner cost is \$29.50 (\$26.90 gold card)

Please advise Phil at branch.12@nzart.org.nz or zl1pk@xtra.co.nz or phone (27)2307129 so that he can reserve a large table for us all.

See page 9.

A group of AREC people went up the Coromandels recently. Apparently to spend time with several hundred mountain bike riders, some of whom always seem to need assistance from St John at various points. Wonderful weather and no accidents. One incident at Fantail Bay with a blue penguin which was handed over to DOC. Fletcher Bay received some fresh fish, so had an excellent lunch and dinner. The tsunami from the earthquake in Japan had us worried for a bit, until we realised it would arrive at low tide, and wasn't going to be as big as first predictions.



**Next Committee Meetings -
6th April & 4th May**

SB PROP ARL ARLP012

ARLP012 Propagation de K7RA

All solar indicators were lower again for the second consecutive week. Average daily sunspot numbers dedined over 28 points from the week before to 40.9, and average daily solar flux was off over 18 points to 94.8.

But looking at solar images from the STEREO mission at <http://stereo.gsfc.nasa.gov> we can see a great deal of activity about to rotate toward us over the Sun's eastern horizon. The whole "back" side of our Sun looks very busy.

The March 24 NOAA forecast for solar flux and planetary A index sees solar flux for March 25 to April 3 at 110, 115, 120, 125, 125, 130, 130, 130, 120 and 115. Planetary A index for the same period is predicted at 5 for March 25-29, 7 on March 30-31, and 5 on April 1-3.

This indicates improving HF propagation for the near term, with geomagnetic indicators unsettled only very slightly compared to recent very quiet conditions. Conditions should be good for the CQ World Wide WPX SSB Contest this weekend, and there is a useful web site devoted to this contest at <http://www.cqwp.com>.

Geophysical Institute Prague has a forecast for geomagnetic conditions quite different from NOAA, predicting quiet conditions for March 25-27, unsettled to active on March 28, unsettled March 29-30, and quiet to unsettled March 31.

Carl Luetzelschwab, K9LA pointed out that the nanoTesla values for each level of K index mentioned in last week's bulletin are actually for the Boulder, Colorado magnetometer, and the values are different for each observatory. He has a good description of how this all works at his web site, [http://mysite.ncnetwork.net/k9la/Where Do the K and A Index Come From.pdf](http://mysite.ncnetwork.net/k9la/Where%20Do%20the%20K%20and%20A%20Index%20Come%20From.pdf).

Jeff Hartley, N8II of Shepherdstown, West Virginia sent in a report last Saturday, March 19. He wrote, "Despite the dedine in solar activity 12 meters has been consistently open to Europe every weekday this week including some Russians, Latvia, and Lithuania. As the flux has dropped off, the band has been opening later.

The band was wide open to Europe at 1230Z Monday (March 14), Thursday and Friday (March 17-18) were good from about 1445Z to past 1600Z. 15 meters has been consistently good to Russia with loud signals (RL3A S9+20-30dB) and even central Asia including UK6, UK8, and UN3M (S9) worked 2 days and I even caught HS0ZDS on Wednesday right over the pole. The low K indexes seem more important than the high flux for anything close to the pole, no big surprise. VU4PB had a good signal Thursday (March 17) on 17 meters from 1300-1500Z and quite a few USA stations, including me, were getting thru the European pile for a new one."

NASA has a video at <http://www.youtube.com/watch?v=aTBgHd8exl4> explaining the very low sunspot activity over the past few years.

MIT Technology Review at <http://www.technologyreview.com/blog/arxiv/26568> has an article about the double-peak of many sunspot cycles.

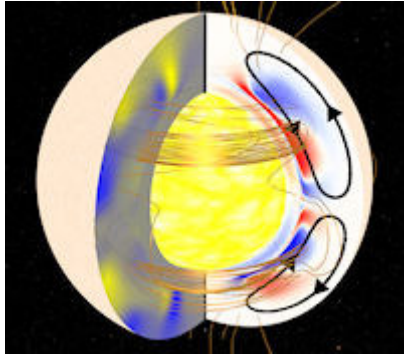
If you would like to make a comment or have a tip for our readers, email the author at, k7ra@arrl.net.



Researchers Crack the Mystery of the Missing Sunspots

March 2, 2011: In 2008-2009, sunspots almost completely disappeared for two years. Solar activity dropped to hundred-year lows; Earth's upper atmosphere cooled and collapsed; the sun's magnetic field weakened, allowing cosmic rays to penetrate the Solar System in record numbers. It was a big event, and solar physicists openly wondered, *where have all the sunspots gone?*

Now they know. An answer is being published in the March 3rd edition of *Nature*.



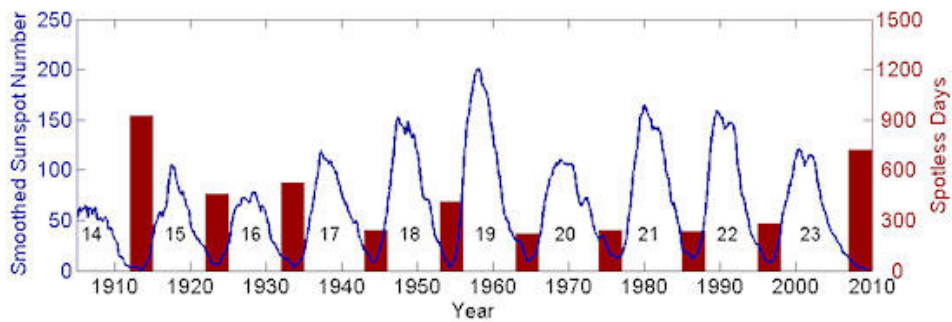
"Plasma currents deep inside the sun interfered with the formation of sunspots and prolonged solar minimum," says lead author Dibyendu Nandi of the Indian Institute of Science Education and Research in Kolkata. "Our conclusions are based on a new computer model of the sun's interior."

For years, solar physicists have recognized the importance of the sun's "Great Conveyor Belt." A vast system of plasma currents called 'meridional flows' (akin to ocean currents on Earth) travel along the sun's surface, plunge inward around the poles, and pop up again near the sun's equator. These looping currents play a key role in the 11-year solar cycle. When sunspots begin to decay, surface currents sweep up their magnetic remains and pull them down inside the star; 300,000 km below the surface, the sun's magnetic dynamo amplifies the decaying magnetic fields. Re-animated sunspots become buoyant and bob up to the surface like a cork in water—voilà! A new solar cycle is born.

For the first time, Nandi's team believes they have developed a computer model that gets the physics right for all three aspects of this process—the magnetic dynamo, the conveyor belt, and the buoyant evolution of sunspot magnetic fields.

"According to our model, the trouble with sunspots actually began in back in the late 1990s during the upswing of Solar Cycle 23," says co-author Andrés Muñoz-Jaramillo of the Harvard-Smithsonian Center for Astrophysics. "At that time, the conveyor belt sped up."

The fast-moving belt rapidly dragged sunspot corpses down to sun's inner dynamo for amplification. At first glance, this might seem to boost sunspot production, but no. When the remains of old sunspots reached the dynamo, they rode the belt through the amplification zone too hastily for full re-animation. Sunspot production was stunted.



Sunspot cycles over the last century. The blue curve shows the cyclic variation in the number of sunspots. Red bars show the cumulative number of sunspot-less days. The minimum of sunspot cycle 23 was the longest in the space age with the largest number of spotless days. Credit: Dibyendu Nandi et al.

Later, in the 2000s, according to the model, the Conveyor Belt slowed down again, allowing magnetic fields to spend more time in the amplification zone, but the damage was already done. New sunspots were in short supply. Adding insult to injury, the slow moving belt did little to assist re-animated sunspots on their journey back to the surface, delaying the onset of Solar Cycle 24.

"The stage was set for the deepest solar minimum in a century," says co-author Petrus Martens of the Montana State University Department of Physics.

Colleagues and supporters of the team are calling the new model a significant advance.

"Understanding and predicting solar minimum is something we've never been able to do before---and it turns out to be very important," says Lika Guhathakurta of NASA's Heliophysics Division in Washington, DC.



Three years ago on March 2, 2008, the face of the sun was featureless--no sunspots. Credit: SOHO/MDI

While Solar Max is relatively brief, lasting a few years punctuated by episodes of violent flaring, over and done in days, Solar Minimum can grind on for many years. The famous Maunder Minimum of the 17th century lasted 70 years and coincided with the deepest part of Europe's Little Ice Age. Researchers are still struggling to understand the connection.

One thing is clear: During long minima, strange things happen. In 2008-2009, the sun's global magnetic field weakened and the solar wind subsided. Cosmic rays normally held at bay by the sun's windy magnetism surged into the inner solar system. During the deepest solar minimum in a century, ironically, space became a more dangerous place to travel. At the same time, the heating action of UV rays normally provided by sunspots was absent, so Earth's upper atmosphere began to cool and collapse. Space junk stopped decaying as rapidly as usual and started accumulating in Earth orbit. And so on....

Nandi notes that their new computer model explained not only the absence of sunspots but also the sun's weakened magnetic field in 08-09. "It's confirmation that we're on the right track."

Next step: NASA's Solar Dynamics Observatory (SDO) can measure the motions of the sun's conveyor belt—not just on the surface but deep inside, too. The technique is called helioseismology; it reveals the sun's interior in much the same way that an ultrasound works on a pregnant woman. By plugging SDO's high-quality data into the computer model, the researchers might be able to predict how future solar minima will unfold. SDO is just getting started, however, so forecasts will

have to wait.

Indeed, much work remains to be done, but, says Guhathakurta, "finally, we may be cracking the mystery of the spotless sun."

Credits: This research was funded by NASA's Living With a Star Program and the Department of Science and Technology of the Government of India.

Author: [Dr. Tony Phillips](#) | Credit: Science@NASA



A N-connector from Klondyke that was responsible for some recent outages at that site.

-SPECTRUM (Auckland VHF Group)



Annual Club Dinner

**27 April 6:30pm
Valentines**

**Cost : \$29.50 per person
(\$26.90 with Gold Card)**

**Please RSVP to Phil at
branch.12@nzart.org.nz, or
z11pk@xtra.co.nz or 027-230-7129 so
he can reserve a large table for us all.**



Earthquake - ham radio provides a link for families

The Hindi Business Line newspaper reports how Ham Radio has helped link families to loved ones in Japan in the aftermath of the Earthquake

Read The Hindu article 'When Ham radio, social networks provided the connect'
<http://www.thehindubusinessline.com/industry-and-economy/article1532157.ece?homepage=true>

Upcoming Happenings & Events

<i>Date</i>	<i>Happenings & Events</i>
2-3 April	NZART Low Band Contest
3rd April	NZART HQ Info-Line
4th April	HF Net, 3.575 MHz, 19:30
5th April	VHF Net, 146.525 MHz, 20:00
11th April	HF Net, 3.575 MHz, 19:30
12th April	VHF Net, 146.525 MHz, 20:00
16th April	KDMG RTTY (80m)
17th April	NZART HQ Info-Line
18th April	HF Net, 3.575 MHz, 19:30
19th April	VHF Net, 146.525 MHz, 20:00
22-25 April	VHF Convention (Wellington)
23rd April	KDMG RTTY (40m)
24th April	NZART Official Broadcast
25th April	HF Net, 3.575 MHz, 19:30
26h April	VHF Net, 146.525 MHz, 20:00
27th April	Hamilton General Meeting—Club dinner
30th April	Rotorua Marathon (AREC)

8th May—NZART HQ Info-Line
10th May—Break-In copy due
14th May—Tasman Sprint (Phone)
18th May—Branch General Meeting
21st May—Tasman Sprint (CW)
22nd May—NZART HQ Info-Line
29th May—NZART Official Broadcast
4-5 June—NZART Conference (Upper Hutt)
5th June—NZART HQ Info-Line
5th June—NZART Official Broadcast (Conference)
11-12 June—NZART Hibernation Contest
19th June—NZART HQ Info-Line
26th June—NZART Official Broadcast
29th June—Branch AREC Meeting (AREC)
2-3 July—NZART Memorial Contest
6-7 August—NZART Brass Monkey Contest
13th August—NZART Boat Anchor Sprint
31st August—Branch AREC Meeting (AREC)
5th September—NZART Doug Gorman Freq Measuring Contest
1-2 October—NZART Microwave Contest
1st October—Oceania All Bands SSB Contest
3-4 December—NZART VHF Field Day Contest

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

AREC Event Operators Page

WRC Rally NZ/ Possum Bourne Rally	7/8 May 2011	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	November 2011	Organiser : ZL1UPJ
<u>Position</u>	<u>Saturday Operator</u>	<u>Sunday Operator</u>
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.		
I.		
J.		
K.		
L.		

Kairangi Hill Climb	Sunday September 2011		Organiser : ZL1IC	
<u>Position</u>	<u>Operator</u>			
1.				
2.				
3.				
4.				
5.				
School C ycling	July 2011		Organiser : ZL1IC	
<u>Position</u>	<u>Operator</u>	<u>Position</u>	<u>Operator</u>	
1.		5.		
2.		6.		
3.		7.		
4.		8.		
Colville Connection	10th March 2012		Organiser : ZL1PK	
<u>Position</u>	<u>Primary Operator</u>	<u>Secondary Operator</u>	<u>Other Operator</u>	
Base				
Stony Bay				
Fletcher Bay				
Hill 1				
Hill 2				
Fantail Bay				
Stand B y				

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

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: Two AREC vehicles deployed after the Christchurch Earthquake.

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