The World Below 400 GHz

The Periodical Newsletter of the
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NZART
BRANCH 81

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WAIKATO VHF GROUP EXECUTIVE

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July General Meeting 2017

A General Meeting of the Waikato VHF Group will be held on
Sunday, 2nd July, 2017 at 1:30pm
at the Silver Fern Farms Event Centre, 44 Stanley Ave, Te Aroha.
See website - http://www.zl1is.info/meetings.html - for location map.

The speaker for this meeting will be Dr Murray Pearson from Lightwire, who will be speaking on

"Spectrum and technologies used by Lightwire to deliver services along with a few details about the Lightwire network and the area that we cover."

Lightwire provide fixed wireless internet services to rural and business customers in the BOP & Waikato.

Non Members and visitors most welcome.

Brian Smith, ZL1CJ, an early member of the Waikato VHF Group passed away on Thursday (20/4/2017) after a battle with cancer.

In March 2013, Brian cut our 50 year anniversary cake with me at Matamata
http://www.zl1is.info/historical.html

http://notices.nzherald.co.nz/obituaries/nzherald-nz/obituary.aspx?n=brian-william-smith&pid=185162552

-ZL1TAT (Treasurer and founding member of Waikato VHF Group, NZART Branch 81)

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The Waikato VHF Group owns and maintains a number of repeaters and beacons in the greater Waikato and Bay of Plenty area. These are available for sponsorship for a period of 1 year. Please see http://zl1is.info/sites.html for a list of repeaters, beacons & links that are currently available for sponsorship. If you are interested in sponsoring one of them, please contact our Secretary (ZL1GWP) or Treasurer (ZL1TAT).

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Te Uku Site - To date the equipment that was stolen has still not been found, after the Police and private detectives have been involved in trying to locate the equipment and the person or persons who stole it. There has been some progress, but the chances of getting the equipment back are looking mote unlikely by the day.

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The speaker for our next meeting is the result of my investigations into a faster broadband service for a farmer that is only 5 minutes out of town. And without UFB or RBI, their options were looking rather slim. Some telecom companies offer a cell phone technology based solution (4G normally) but the farmer was too far from the nearest cell tower. I knew about EOL over in Tauranga, but the farmer was in the Waikato. Then I came across Lightwire who offer fixed wireless links for rural customers in the Waikato. A quick search on RSM's SMART database revealed a long list of frequencies in use by Lightwire, and I began to think that they could provide an interesting talk for the VHF Group.

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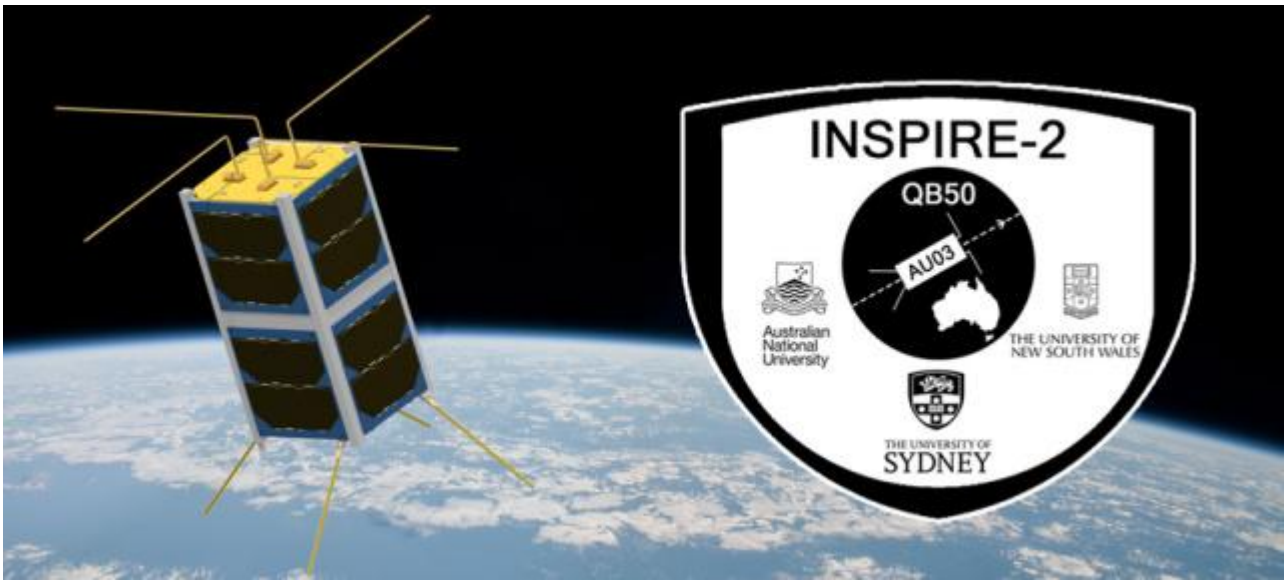
Amateur Radio to the rescue of Satellite

I-Inspire-2 is a 20 x 10 x 10cm CubeSat built by the University of Sydney in collaboration with the Australian National University and the University of New South Wales (Sydney)

WIA News reports:

On board the tiny spacecraft is an experiment, part of the QB50 project, designed to "explore the lower thermosphere, for re-entry research and in-orbit demonstration of technologies and miniaturised sensors", as reported in earlier editions of the WIA broadcast.

Its operational frequency was coordinated by IARU to be in the satellite segment of the 70cm amateur band.



It was placed in orbit from the International Space Station in late May. The deployment was successful; however there were no signs of life when the ground stations started looking for it. The engineering group quickly tested various scenarios on the engineering model only to come to the conclusion that, due to the extended delay in the deployment, the satellite's battery was likely to be depleted and the satellite was trapped in an endless loop, trying to deploy its antenna.

The engineering group suggested that the satellite is still listening albeit with its antennas in the stowed position. This meant that the satellite command receiver might have difficulty receiving any signals from ground control stations. A set of commands were devised which, if received, would instruct the satellite to wait until the battery is charged before attempting to deploy its antenna. Both UNSW and ANU ground stations transmitted the recovery command to the satellite; however after a week or so of no success it was decided that more transmitter power was required to overcome the lack of receiver sensitivity caused by the still stowed antenna. A request for assistance was passed to EME operators around the world and many responses were received.

The greatest hope for a successful recovery was thought to be PI 9 CAM using high power and a 25 m dish, normally used for radio astronomy but also EME. They were scheduled to transmit on the weekend of June 10-11.

On Sunday June 11, during the morning pass, Rob VK1KW reported a strong signal every 30 seconds on I-Inspire-2's frequency. Dimitris VK1SV who is part of the ANU team, verified reception from home around midnight. The following morning Dimitris drove to the ANU ground station and was able to send commands to the satellite for the first time since it was deployed. Many other radio amateurs around the world also reported reception of the beacon. The satellite had come back to life!

This is a wonderful example of successful collaboration between radio amateurs and the academic community. If a frequency outside the radio amateur band had been used, it is doubtful that the satellite would have been brought back to life.

The crew of I-Inspire-2 wishes to thank all radio amateurs involved and is looking forward to a successful collection of data for the scientific experiment!

I-Inspire-2 official web site:
http://sydney.edu.au/inspire-cubesat/project/index.shtml

(Dimitris Tsifakis VK1SV/VK2COW)

Source WIA News
http://www.wia.org.au/members/broadcast/wianews/

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Upper atmospheric "heat wave" wipes out noctilucent clouds

Every year in June, far-northern sky watchers see electric-blue tendrils creeping over the western horizon at sunset.

These are noctilucent clouds (NLCs) formed by summertime wisps of water vapor crystallizing around bits of meteor smoke at the edge of space. Every year in June ... except this year.

NLCs have been mysteriously absent in June 2017, and researchers have just figured out why. A 'heat wave' in the upper atmosphere has temporarily wiped them out.

Visit today's edition of Spaceweather.com for the full story and the prognosis for future NLCs.