
VHF/UHF – An Expanding World

David Smith VK3HZ
Leigh Rainbird VK2KRR

Weak Signal

David Smith - VK3HZ

October was a fairly quiet month propagation-wise. On the morning of October 23rd, a high-pressure cell settled over central Victoria producing some enhancement. Joe VK7JG worked Peter VK5ZLX and Leigh VK2KRR, both on JT65b digital mode. Joe was a very good signal in Melbourne and managed several voice contacts without any problems. To the west, Garry VK5ZK also managed a voice contact to Nhill to Bill VK3LY and into Melbourne with VK3HZ. And that was about it for tropo openings.

Auroral Openings

On the afternoon of November 8th, a substantial auroral opening occurred following a mass ejection from the Sun. The opening was first noticed around 0400Z and it continued until well past 0800Z. A message posted to the VK-VHF Reflector seemed to bring out stations from near and far – all the more amazing given that it was a work day. On 2 m, there were many very strong signals, dogpiles on 144.1 and many contacts occurring simultaneously between 144.1 and 144.2.

Robbie VK3EK in Bairnsdale reports working VK3DOU, ZL3TY, VK3AJN, VK1ZQR, VK2BZE, VK2ZOM, VK4ZRT and JA8NAE on 6 m. On 2 m, he worked VK3UH, VK1ZQR, VK2BZE, VK3HZ, VK2EI, VK2TWR, VK2KRR, VK2UBF, VK2TWB, VK3KOS, VK2GKA, VK7MO, VK3KEG, VK3XPD, VK3CAT, VK3BJM and VK5DK. On 70 cm, he worked VK2BZE and VK2TWR. He reports hearing many more stations also.

Neil VK2EI at Port Macquarie reports that between 0420Z and 0520Z, when he had to go out, he worked VK3HZ, VK3EK, VK3DUT, VK2TWR, VK3KAQ and VK3UM.

Brian VK5UBC at Gawler reports that on 2 m, he worked VK3GOM, VK3UM, VK2KRR, VK3KEG, VK5DK, VK5NC and VK3HZ. On 6 m, he worked several VK3 and VK4 stations via aurora. He also worked Jeff VK8GF in Alice Springs.

Colin VK5DK reports that, despite struggling with a very sore throat and vocal chords (very hard to tell with auroral contacts), he managed to work the following stations on 2 m: VK3HZ, VK3UM, VK3BJM, VK3BG, VK3KAI, VK3DUT, VK3UH, VK3DDU, VK2GKA, VK3KEG, VK3EK, VK5UBC, VK2KRR, VK1ZQR and VK3GOM. On 70 cm, he worked VK3HZ and heard VK2FZ.

David VK3HZ worked 23 stations on 2 m via aurora including: VK1ZQR, VK2KRR, VK3DUT, VK2TWR, VK2EI, VK3BG, VK3EK, VK2BZE, VK2TWB, VK7BBW, VK2UBF, VK7MO, VK2GKA, VK7ZOO, VK3KEG, VK2FZ, VK2FLR, VK5DK, VK3UM, VK3ZQB, VK5UBC, VK5NC and VK5ZLX. He also heard at least another 9 locals including: VK3XPD, VK3KAI, VK3KAQ, VK3DDU, VK3UH, VK3KOS, VK3BJM, VK3GOM & VK3AUU. On 70 cm, he managed to work VK5DK and VK2FZ. The Adelaide, Mt Gambier and Nimmitabel 2m beacons were all clearly audible via aurora.

Then on November 10th, from about 2130Z to 2300Z, and from 0700Z to 1000Z, more auroral openings occurred. These were weaker than that of the 8th, and fewer stations were on the bands. During these openings, Rex VK7MO ran test

transmissions on 2 m for others to observe the behaviour of the Doppler shift on his signal. Doug VK3UM, David VK3AUU and David VK3HZ all reported negative shifts of 300 - 400 Hz during the morning opening, and positive shifts of the similar magnitude during the evening. However, the shift would sometimes reverse polarity and the spread of the signal would vary. At times, multiple Doppler-shifted signals were observed with differing shifts. Towards the end of the opening, the shift seemed to cycle between positive and negative over a period of about a minute, before the auroral enhancement finally disappeared. Further observations are planned, when next we get an auroral opening.

Spring VHF/UHF Field Day

The Spring VHF/UHF Field Day was held over the weekend of 6-7 November. In VK3, it was fairly quiet. I operated from home on 2 m, 70 cm and 23 cm and worked 27 different stations.

Not many stations were heard out in the field - only one "club" / multi-op station being VK3QM near Geelong – operators were Chas VK3PY, David VK3XLD and others. Several other single-op stations braved the elements - Jim VK5OM/P3 (ex-VK3AEF, Nhill), Gavin VK3HY (Mt Terrible in central Vic), Ken VK3YDK (Neerim South), Peter VK2BIT (near Young), and Rex VK7MO (Mt Wellington). Radio conditions were flat - Roger VK5NY was worked, but with a struggle. Virtually no stations were worked from the west of the state / Mt Gambier, and east Gippsland was also very quiet.

There seemed to be several reasons for the low turnout. The most obvious was the weather, which was, in a word, appalling! It rained fairly constantly and was quite cold. A similar thing happened last year, if I recall correctly, where Gavin VK3HY had snow on Mt Terrible. The other main issue was that several Hamfests were also held over the same weekend, attracting many away from their radios. Hopefully, with the revitalised WIA putting efforts into a national events calendar, we can avoid such clashes in future.



Gavin VK3HY at Mt Terrible during the Spring VHF/UHF Field Day



Rod VK2TWR at Kings Cross near Cabramurra

Beacons

Adam VK4CP has been working hard, adding features to the excellent VK/ZL Logger - <http://vklogger.brizwebz.com.au/> One feature that will be online by the time you read this is the Beacon Status page. This page contains up-to-the minute information on all VK/ZL VHF/UHF and microwave beacons and includes several fields of information that are not currently available from the Callbook or online. The Ident field contains the Ident type (CW/FSK), period and, for FSK, keying frequency offset (e.g. CW 60s, FSK +800 Hz 30s). A Comments field is available for noting things like actual frequency and any unusual keying arrangement (e.g. only keys for 12 sec on the 5 mins).

Another important field is the 6-digit grid locator for the beacon. A planned future enhancement is that, if you have entered your grid locator on the OpInfo page, you will be given a customised display showing distance and bearing from your QTH to each beacon. The 6-digit grid locator is needed for accurate distance/bearing calculations - particularly important for microwave beacons.

Obviously, such a page is only as good as the information it contains. Therefore, people are encouraged to enter data on beacons, but please only do so for beacons that you can currently hear, or for which you have current, first-hand information – data from an opening 6 months ago is of little use.

Roger VK5NY, on behalf of the VK5 Beacon Group, reports that Mark VK5AVQ has been busy upgrading the VK5VF beacons at Mount Lofty and also moved the 10 GHz beacon to a less-obstructed location. The old antenna (slotted waveguide) was not working well and was replaced with another built by Des VK5ZO in the change. The new location is perfect for microwave beacons with a clear horizon to the west towards VK6 and a good take off to the east towards Melbourne. The frequency does shift a little so tune either side of 10368.450. Field checks show a vast improvement to the east.

The VK5VF 1296.450 beacon at Mount Lofty at 8 W output should also provide good coverage. Once again the frequency is not spot on – currently it's about 2 kHz low. Plans are afoot to possibly Rflock the beacon, but time is always a problem.

The VK5VF 6 m beacon on 52.450 is currently off air. The PA has expired and will be fixed soon, when time permits.

Many thanks to Mark VK5AVQ (new beacon minder), to David VK5KK for all the previous construction work and to others for their component donations.

Please send any signal reports to Roger at vk5ny@picknowl.com.au

EME

The first leg of the ARRL EME contest was held over the weekend of the 9th-10th of October. Active VK stations included Trevor VK4AFL and Doug VK3UM, both operating on 70 cm. Doug reports that he worked a total of 36 stations over the weekend. "It was interesting that I was transmitting and receiving vertical into Europe and the USA as Faraday was almost 90 degrees and quite sharp. (Others with the more accurate measuring techniques confirmed this). All CW of course no loggers, spotting, or skeds. I ran out of time for stations that were present but hopefully will catch them in December. Activity down on previous years but much improved over previous months. Several new stations worked and a new country."

Another new face on digital EME is Ron VK6KDD. Apparently VK6 is fairly rare on EME, so Ron could find himself busy. Using only a single 12-element M2 yagi, Ron managed to work Joop PA0JMV on the 2nd of November. Unfortunately, Ron suffered some equipment damage soon afterwards but will be back trying for further contacts in the near future.

5.7 GHz Band Status

As mentioned a few months ago, the ACA has been evaluating a proposal to introduce apparatus licensing arrangements in the 5725-5825 MHz band that could allow greater opportunities for broadband wireless access services in regional and rural areas of Australia. The results of this ACA review have recently been announced, and represent a significant win for Australian amateur radio operators. Amateurs retain unencumbered access to the 5760 MHz band, which is currently used for weak signal applications. A proposal to use the amateur allocation for commercial services was rejected by the ACA.

Please send any Weak Signal reports to David VK3HZ at ...

Digital Modes

Rex Moncur – VK7MO

During October VK7MO undertook a DXpedition to outback VK5 and VK8 activating 14 grid squares and completing 5 EME (JT65) and 105 Meteor scatter contacts (FSK441) on two meters. Contacts were completed on meteor scatter with VK1WJ, VK2AWD, VK2EAH, VK2FLR, VK2FZ, VK2KRR, VK3AFW, VK3AXH, VK3CY, VK3FMD, VK3HZ, VK3II, VK3KAI, VK4TZL, VK5DK, VK6AO, VK6HK, VK7JG, and VK8RH. Stations seen but not worked on meteor scatter were VK3KQB, VK3ZYC, VK4CDI, VK6KDD and VK8GF. Typically 8 to 10 stations were worked in a few hours each morning. It was good to see all states and mainland territories participating.

As predicted by theory, meteor scatter worked well in the range 1000 km to 1800 km with contacts becoming very difficult above 2000 km or below 700 km. The data from the meteor scatter contacts was used to compare the performance of a small 2.3 wl yagi and a 6 wl yagi. While it was not apparent at the time, a detailed analysis showed that at distances below 1650 km the shorter yagi is to be preferred because of its greater beamwidth, but that the longer yagi has an advantage at distances beyond this.

Please send any Digital Modes reports to Rex VK7MO at ...

2 m & 70 cm FM DX

Leigh Rainbird - VK2KRR

Tropospheric Propagation was 'on the boil' in Queensland during October, and this was our main area of propagation. There were only a few tropo openings in the southeast to speak of and most were overshadowed by the significant activity happening in Queensland.

After keeping his eye on all the charts and indicators, Mike VK4MIK on the Atherton Tablelands, came across an opening on the 6th where he ended up working as far as the Hodgson Range repeater. This is quite a mountainous path and Hodgson is to the SW of Mackay. Also around the same time, Felix VK4FUQ at Ingham was working into the Mackay repeater and the Hayman Island repeater with almost full-scale signals. David VK4DJC on Hayman Island was able to hear Felix direct at times, but no simplex contact was completed.

Down to the southeast on the 9th, a 'half decent' opening saw signals passing between VK2, 3 and 5 on 2 m but nothing much on 70 cm. This was one of those openings where the signals had QSB and poor unstable signals. At VK2KRR signals peaked around 7 am with the higher repeaters around the Adelaide Hills being present at some time or other. The furthest repeater heard was VK5RLH in the central north at 833 km. Garry VK3KYF was heard working the Mt Macedon VK3RMM repeater from Mildura.

Good news for those looking for propagation indicators and an east west link, is that the Grampians VK3RWZ 146.950 repeater is now back into full steam ahead mode after being in a temporary state for a year or more. It is reported that the coax and antenna have been replaced. Reports of monster signals are now emanating from many miles around and I believe that before its demise a few years ago, it was worked by stations located in Western Australia.

Onto the 13th of October, and a great long path was workable by some along the VK4 coast. Both Mike VK4MIK and Felix VK4FUQ were able to hop into a duct which dropped them off at Amy's Peak VK4RGA. Responding to the calls from the distant stations were not only Mike VK4JOO not too far away in Gladstone, but also an unexpected call in from Kevin VK4BKX, 371 km south in Toowoomba. The distance for Mike to the repeater worked out at a whopping 951 km! And for Felix a big 805 km. For Mike the 1000 km barrier was now in sight.

On the 11th, Karl VK7HDX was able to work 502 km across the water from Launceston to the Mt Macedon repeater on the north side of Melbourne where he caught up with Gavin VK3VTX. Karl mentions he could access a few other VK3 repeaters but no one was about to answer the call.

A very interesting report was received from Don VK6HK in Perth, relating to some very unusual conditions during the 19th of October along the VK6 coast.

In the morning of the 19th, Phil VK6ZKO in Perth first reported hearing Indonesian FM simplex signals across the 2 m band.

Glen VK6IQ and Don VK6HK (and maybe others) also copied Indonesian language (a female operator) traffic via the output of the Cataby 2 m repeater 147.200 in Perth around 0100Z and earlier. Glen 6IQ at Wandina northeast of Perth also copied the signal on the repeater input. There was no indication that the DX operator copied or was even listening to the repeater output or input. Signals into the repeater suffered QSB but ranged up to noise free. Distance from the repeater site to the most likely origin of Indonesian signals is 2700 km and to VK6ZKO is 2850 km. Unfortunately no AR related transmissions or callsigns were heard.

The Indonesian activity on the VK6RCT repeater was repeated again in the evening with the reappearance of Indonesian transmissions albeit at reduced strength. As far as is known, these signals are the first reported Indonesian based signals on 2 m into Perth.

The big VK4 tropo boil over occurred on the 25th with Mike VK4MIK reporting some big distance along the coast. The best ones being to Amys Peak at 951 km; Springsure at 793 km; Gympie at 1231 km; Bundaberg at 1118 km and Hervey Bay at 1151 km. Well done to Mike for breaking the 1000 km barrier to several sites.

Also during this significant opening, Wayne VK4ZRT in Gladstone was able to work the Cairns repeater and speak to some of the locals over a big 954 km path. Wayne also took part in the big one, where he spoke to VK4MIK through the Gympie repeater which is 310 km south. Wayne worked Wal VK4AIV in Mackay on FM simplex which is 367 km and also found the Hodgson Range 438.500 repeater at 350 km.

Felix VK4FUQ also stepped in on the action and made it to Amys Peak at 805 km; Hodgson Range at 491 km; and Springsure at 639 km. Felix could hear Rockhampton at 694 km, but could not access.

There was again a similar opening on the 28th where similar areas were worked, but not quite as extensive or as easily as was found on the 25th.

Please remember to send through any 2 & 70 FM DX reports to Leigh VK2KRR at ...