
VHF/UHF – An Expanding World

David Smith VK3HZ

Weak Signal

David Smith - VK3HZ

VK3RXX beacons

Alan VK3XPD reports on the status of the VK3RXX beacons in Camberwell. The 2403.530 MHz beacon is still working fine. The 10,386.530 MHz beacon has been repaired and is working from a temporary location on his upstairs Balcony.

The 1296.530 MHz beacon was suffering from poor quality signal. A change of hardware from direct PLL generation to a high-side transverter plus some other hardware and software modifications have cleaned up the signal substantially and it is now back on air with a much improved quality.

All beacons are, of course, GPS locked.

All signal reports welcome.

New VK1 beacon

Chris VK1DO reports that there is a new beacon in Canberra – VK1RSB on 144.410 MHz - located in the northern Canberra suburb of Evatt, which has an excellent outlook towards VK3 and probably quite a decent takeoff towards Sydney. The beacon uses 850Hz FSK keying and is running 10 W into a temporary vertical antenna. Dual cloverleaf antennas are planned. There are also beacons for 70 cm and 23 cm in the pipeline.

Alan VK1WX and Rob VK1KW are the people behind the project with the Canberra Region Amateur Radio Club (CRARC).

Reception reports would be appreciated.

23 on 23

Adam VK4GHZ reports on a new initiative in South East Queensland to stimulate activity on the 23 cm band.

The "23 on 23" activity days will be held on the 23rd of each month, commencing in March. This concept means that the actual day will change each month, which will help accommodate those who may not be available on certain days of the week due to family/work/etc commitments. Activity will be centred on 1296.1 MHz commencing at 8 pm (1000Z) on weeknights and during the day on weekends (times to be confirmed). Keep an eye on the VK Logger forum area for updates to the planning.

The VK Logger's 23 & Above chat area will be used for liaison.

This would also be an ideal opportunity for 23 cm equipped stations outside of S/E Qld to look in that direction. Digital modes could also be tried to improve the distances worked. Hopefully, this might become more of a national "thing".

Originally intended to start in March, an impromptu gathering on February 23rd included VK4CZ, VK4CRO, VK4EA, VK4GHZ, VK4KJJ, and VK4MJF. A great start!

There are ten 150W class 1296 PA's being built in Brisbane alone, so there are

plenty of stations keen to be active, more often.

Please send any Weak Signal reports to David VK3HZ.

Meteor Scatter

Dr Kevin Johnston – VK4UH

Activity levels and conditions for Meteor Scatter were not great through February. Other activities and events, including the Wyong convention, further reduced the number of stations on-air during the weekend activity sessions. There were no major meteor showers to rely on in February or much evidence of tropospheric enhancement extending meteor scatter paths. Random meteor rates were similar it seems to last month but rapidly declining after sunrise, at least here in VK4.

In case anyone has not spotted this, there has recently been a new version released of the WSJT suite of programs. The latest version 9.7 is available, free of charge, from Joe Taylor K1JT's site at:

<http://www.physics.princeton.edu/pulsar/K1JT/wsjt.html>.

Here is some information about V 9.7 from the site :

WSJT 9.7 is the latest version of the familiar weak-signal communication program WSJT. Until a complete WSJT 9 User's Guide is available, the present document should be read in conjunction with the older WSJT6 User's Guide and Reference Manual, most of which is still relevant.

New features in WSJT 9 (relative to WSJT 6 and WSJT 7) include the following:

1. New Modes

a. ISCAT is a new mode that replaces JT6M. It has significantly better performance on the propagation paths where JT6M has been popular, such as tropospheric and ionospheric scatter and weak Es or F2 on 6 meters. If you liked and used JT6M, you will like ISCAT even better.

b. JTMS is a new mode for meteor scatter. It uses a variation of FSK called Minimum Shift Keying (MSK), which allows a faster transmission rate per unit bandwidth. Extensive tests show that JTMS performs slightly better than FSK441, especially with very short pings. It also tends to produce cleaner decodes and less on-screen "garbage".

c. Echo mode has been missing in recent versions of WSJT, but is re-introduced in WSJT 9. It allows testing for echoes of your own signal from the moon.

2. Enhancements to FSK441: an improved decoder does a better job of (1) determining frequency offset DF and (2) rejecting non-FSK441 signals and noise spikes, thereby producing fewer "garbage" decodes. Sensitivity to legitimate FSK441 signals is unchanged.

3. T/R period for ISCAT is normally 30 seconds, the same as for FSK441. However, WSJT 9 also supports optional T/R sequence lengths of 15 s for both FSK441 and ISCAT modes. The shorter sequences may be useful in particular situations such as contests, multi-hop Es, etc.

4. Message Templates: the Setup | Options screen offers an improved user interface for setting your preferences for templates that generate messages for the FSK441

and ISCAT modes.

5. Lunar Librations cause EME signals to exhibit fading at VHF/UHF frequencies and Doppler spreading at higher microwave frequencies. WSJT 9 computes these effects in real time and displays the expected frequency spread both for your own echoes and for the DX station. Fading timescale is the inverse of frequency spread.

6. User interface has been cleaned up and simplified in several ways. In general, only those controls relevant to the selected mode appear on screen. The new version downloaded and installed without any difficulty being experienced onto a fairly "strandard" laptop at this QTH.

The new modes ISCAT and JTMS installed directly without the need to open any hidden files, as on earlier versions, while they were under development.

The only issue that has arisen at this location, and one that I have yet to sort out, is how the new version of WSJT writes the auto .wav files at the end of each receive period. Clearly there has been some change as it has not proved possible to run the MSRX decoding programme in the background while running Version 9.7. With earlier versions MSRX performed a decode on each new .wav file saved at the end of each receive period provided the "Save" function was active.

I would be grateful to hear from anyone who has got both programs to run together, as was discussed last month there is a distinct advantage in having "the second bit of the cherry" with MSRX running in the background.

Don't forget the next significant Meteor Shower will be the Lyrids Shower expected around 22nd April 14.

Please send any reports, questions or enquiries about Meteor Scatter in general or the digital modes used to Kevin VK4UH