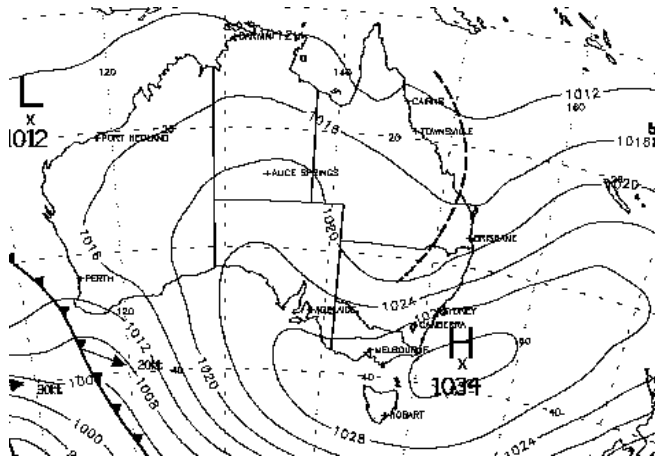

VHF/UHF – An Expanding World

David Smith VK3HZ
Leigh Rainbird VK2KRR

Weak Signal

David Smith - VK3HZ

Not a great deal to report this month on the propagation side of things. However, even in winter, it is worth keeping an eye on the weather chart for the presence of a high-pressure cell in the right location. On the evening of 29 June, conditions picked up between Melbourne and Mt Gambier, with the VK5RSE 23 cm beacon reaching S9 in Melbourne. The weather chart for the time is shown below.



Of note is the presence of an intense high-pressure cell in a position where the isobars form a line of constant pressure between Melbourne and Mt Gambier. When you have this sort of alignment, it is definitely worth having a listen to the beacons as, more often than not, you will find tropo enhancement in the area. I scan the weather chart each night on the evening news, looking for such areas.

Doug VK3UM reports that, following his GippsTech presentation, he has released version 5.0 of his EMRCalc program. Several refinements have been added including ACMA Compliance Level 2 indication, E and H Plane requirement calculations, FCC levels in line with their current requirements as well as CEU (Council of European Union. ICNRP recommendations). On screen help/definitions have been extended. It may be downloaded from www.qsl.net/vk3bez/VK3BEZ.htm

GippsTech 2005 was another great success with nearly 100 amateurs and their partners attending. There was a full program of talks covering many areas of weak signal, EME, digital, microwave and even optical communications. During the coffee breaks, attendees had the opportunity to purchase specialty bits and pieces from several stalls, or browse the many technical displays. The lunches and evening dinners provided the opportunity to catch up with many of the like-minded enthusiasts in attendance. Thanks go to Peter VK3KAI and his cast of thousands who organised the weekend, which ran without a hitch (apart from Peter's car and house keys departing back north with one of the attendees). Also thanks to Alan VK3XPD who donated several prizes raffled off over the weekend. GippsTech 2006 is tentatively planned for 8 & 9 July, so mark that in your diary.

EME

Doug VK3UM reports on his activity during the recent DUBUS EME contest over the weekend of 11-12 June.

"Conditions on 432 were poor to terrible at this location (worst for years). From my Moon rise at 0120z 11 June 05 to about 0230z fairly normal but significant defined (mostly aligned) Faraday. Suspect a disturbance at about 0230 as Libration became significant to extreme all through to my Moon set at 1033z. Deep short-term fading was also predominate making copy very difficult. Sun noise measured at 0315z indicated very high activity and from my calculations relate to a SFU of about 140.

On Sunday 12 June 05 at my Moon rise 0140z Libration was still significant and again Faraday seemed still very narrow but nearly aligned. Fading was minimal but alignment was such as to make things difficult. I was transmitting and receiving vertical with one exception K0RZ. (normally I Tx V and Rx H into NA). Conditions had improved significantly at Moon rise into Eu at about 0830z. Libration had disappeared and signals were good. Unfortunately it did not last and from about 1010z polarity again began to swing and Libration and deep short term fading returned with a vengeance. It was extremely hard going. Sun noise measured at 0330z Sunday was back to normal at about a SFU of 80.

Participation was not great from NA but good from Eu. Plenty to keep me very busy though. The "gentlemen" operating times for us all were great for a change!

Here are some observations that may be of interest. Sun Noise on Saturday showed a 2.5dB advantage in vertical polarization over horizontal as did ground noise in this polarity over what I measure as normal. Sundays' measurements returned normal figures. The apparent very narrow polarization also provided some interesting and most detrimental effects. When Steve K1FO called me at 0159z Sunday I could not believe it was him at first and thought he was a little tardy in rotating the array. Not so, signals were "only" 55n so even the most experienced polarization alignment expert did not have it right. I also spent some time trying to decipher a very weak signal that turned out to be Trevor VK4AFL whose alignment at the time must have been close to a null for me. HB9Q was also "weak" at 55n and was only being received horizontal - were they Tx Linear? There were amongst all these degraded signals some outstanding and totally devoid of fading and Libration (at the time I was listening). These included from memory K5JL, DL9KR, D7APV, F2TU.

It was the hardest weekend I have participated in that I can recall. The Sun activity appeared to screw things up big time and for hours and hours on end. It must have tried everyone's patience to the extreme. It proved however to be most rewarding though, as one had to pull every trick in the book to decipher the extremely librated signals. I witnessed time and again the skill and patience from our fellow operators. I could not help thinking how much computer power (without any outside assistance) would be required to do what we humans were employing at the time. I felt I was using more ESP than DSP! It also appeared that the effect was not always reciprocal as I spent many Y's trying to decipher who was calling at times. One QSO took over half an hour! It was apparent that the other station was copying fine at the time when I was suffering from severe Libration. After it was all over I listened on 20 meters for a while to "detox" and assure myself what non-librated CW still sounded like! How easy is it there!

The following is an abbreviated list of stations were worked:-

11 June 2005 - K5JL, VK4AFL, JA6AHB, KL6M, VE6TA, K0RZ, N9AB, OZ6OL, SM3BYA, SM3AKW, SP6JLW, SV1BTR, RW3RW, DR3RU, OZ4MM, HB9Q, DL9KR, OK1CA, DL0GER, F6KHM, G4YTL, G4RGK, DK3WG, JJ4NNJ

12 June 2005 - K1FO, JA6DZI, JA9BOH, KL7HFQ, DL7APV, SM2ILF, SM4IVE, RW3PX, F2TU, OK2BDQ, DL7UDA, EA3DXU, G3LQR, DJ6MB, I5CTE, S53RM, S53J, G3LTF, S54T, SM5IOT

for a claimed total of 44 stations and 23 multipliers 101200 points. (total 6.5 hours operating time .. all totally random .. zilch assistance in any shape or form.. a ticket holding member of the elite Dinosaur Club and proud of it! ..)”

Despite the poor conditions and the additional handicap of a far southern location, Doug’s efforts seem to have paid off. According to the latest 432 and Above EME Newsletter, it looks like Doug has taken out second place in the contest against many much more favourably located stations. Congratulations to Doug.

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

Digital DX Modes

Rex Moncur – VK7MO

Joe Taylor, K1JT, has released a “maintenance update of WJST” Version 4.9.8. It is useful in eliminating computer lock-ups with older versions and there are a few other minor bug fixes. Joe is now going back to the drawing board for a major re-write and has been seeking advice from users on their preferences for new features. His intention behind the re-write is to make WSJT independent of the Operating System, which would hopefully allow him to overcome some of the timing issues associated with Windows. This in turn may make it possible to achieve such things as averaging the input to the correlation (or deep search) decoder and make further sensitivity gains. From a VK point of view I have been encouraging Joe to add a more effective Meteor Zapper for JT65 and to allow longer message strings on FSK so one can send messages to more than two stations at a time, such as would be helpful on DXpeditions.

It is good to see John, VK5PO and Jeff, VK8GF trying out FSK441. John has also worked Wayne, VK4WS. Interest in VK4 is increasing with Phil, VK4CDI and Trevor, VK4AFL also now active.

The ZLs have established weekend activity sessions on 144.230 and have 4 or 5 stations participating each Saturday and Sunday. Bob, ZL3TY, reports that this is already leading to equipment improvements by a number of stations and hopefully it should be result in some meteor scatter contacts from VK2 and VK4 to the North Island.

Ron VK6KDD reports that he and Don VK6HK have been testing with JT6M on 50.230 MHz between Port Hedland and Perth - a distance of approximately 1500 km. Contacts were made quite easily, completing in about 15 minutes. Long bursts and audio were clearly heard with many multiple decodes. Ron described it as an easy contact. Compared with 2 m, the bursts on 6 m are much longer - multiple seconds instead of fractions of a second. This allowed the noise blanker to be used. Ron’s next sked on 6 m is with Otto YB0ASG in Jakarta – a distance of 2014 km. Ron managed to work him the Sunday prior on 50.110 in SSB.

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

The Magic Band – 6 m DX

Brian Cleland – VK5UBC

The month of June started with the very disappointing news that the Australian Broadcasting Authority had released a discussion paper which indicated that one of the candidate bands for the introduction of Digital Radio Services was VHF Band I (45-52 MHz and 56-70 MHz). This would obviously be very detrimental to 6 m operation in the 50-52 MHz area and could mean interference which would make weak signal overseas contacts impossible or even mean the loss of the first 2 MHz (50-52 MHz) of the 6m band for Australian Amateur operation. The paper sought submissions by the 27th June on the issues raised in the paper and several 6 m operators around the country submitted submissions. The WIA also produced an excellent submission, which in summary opposed the introduction of DRS in the 45-52 MHz band and sought the allocation of the 50-54 MHz band to the Amateur service on a primary service basis once the existing Channel 0 transmissions are discontinued. The 50-52 MHz portion of the 6 m band is presently secondary service. Check the WIA submission, which is available on the WIA WEB site and let the WIA Directors know how you feel about this important issue.

The month of June produced several winter E's openings. On the 13th June the band opened between Brisbane and far north Queensland. Scott VK4JSR in Brisbane reported working Gary VK4ABW Townsville and Paul VK4APN Cairns.

Then on the 15th June Rob VK1ZQR reported the band open from VK4 to VK7 and all points south of VK1. On the same day Dave, a SWL in Adelaide, reported hearing the Alice Springs VK8RAS/b and Richard VK5USB worked Ray VK4BLK Yeppoon. Steve VK3SIX also reported hearing some JA activity on that day.

The main winter openings then occurred on the 19th & 20th June. Brian VK5UBC reported the band opening to northern VK2, VK4 and VK6 on both days with several contacts completed. The opening to VK6 on the 19th was particularly good with both Peter VK6KXW and Steve VK6VZ being worked. Steve is new to 6 m and had good signal running 70 w and using a 5 el yagi. This was his best DX to date, welcome Steve. On these days the band was also open up and down the east coast with ZL contacts being reported from VK2, 3, 4 & 7.

On the 29th June Norm VK3DUT and SWL Dave from Adelaide reported ZL TV and the ZL3SIX/b but no stations heard. To round off the month on the 30th June Wayne VK4WS worked Brian VK5UBC.

The month of August is probably the best time to carry out any antenna work etc in preparation for the coming DX season.

Please remember to send any 6 m information to Brian VK5UBC at ... Thanks to those who are sending me information - I can only report what I know.

2 m & 70 cm FM DX

Leigh Rainbird - VK2KRR

Only very few openings in VK during June.

Some limited conditions appeared around north Queensland in the morning of the 13/06. Mike VK4MIK at Butchers Creek had good signals in from the Townsville repeater just after 0700. Mike spoke to Felix VK4FUQ from Ingham, with repeater signal up to S7, but slowly dropped out. Mike then had a listen to VK4RTA repeater on the Atherton Tablelands and could hear John VK4FNQ coming in from Charters Towers, Ross VK4AQ at Innisfail and also Dale 4DMC and Russell 4BEG from at Kurramine Beach. Mike had a listen on reverse and was able to copy all these stations also on the direct path.

An interesting report from Damien VK3HGY at Mirboo North in South Gippsland. On the evening of the 29/06 Damien got a taste of some real 2 m DX, working into VK5. Damien was able to make it into the Mt Gambier 146.900 repeater over a distance of 474 Km. Welcoming Damien's signal to the repeater were Bill VK5WCC, Colin VK5DK and Michael VK3KVW (Ballarat). Damien reports the signal was up to S4 at times and he is running an Alinco dual-bander and a Diamond X50 vertical. This was Damien's furthest repeater contact to date.

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