
VHF/UHF – An Expanding World

David Smith VK3HZ

Weak Signal

David Smith - VK3HZ

It's been a very good summer so far with lots of extended openings and many records being reset. Sporadic E openings on 2 m commenced in earnest around the middle of December and have continued to at least mid-January, livening up the Summer VHF/UHF Field Day in the process. On the tropo side, things have been almost as active, with openings across the Bight between VK6 and VK3, 5 and 7 and several between ZL and VK4, 2 and 3.

On the evening of November 23rd, weather conditions were ideal for an opening across the Bight. At 1126Z, Ian VK3AXH in Ballarat worked Bob VK6BE in Albany. At the eastern end, the opening extended well into Gippsland with Phil VK5AKK in Adelaide working Ralph VK3WRE in Traralgon on 70 cm. Peter VK3TPR worked Karl VK7HDX on 2 m with 59+ reports. Peter VK3KAI in Churchill then worked Bob VK6BE on 2 m.

The following morning, conditions between Adelaide and northern Tasmania were still excellent. Peter VK5ZLX worked Paul VK7BBW with S9+ signals and reported that the VK7RAE beacon was extremely strong. Mike VK3AAK reported hearing the VK6RST 70 cm beacon near Albany, and also worked VK5ZLX on 23 cm. The VK6's finally arose and VK6JR worked VK5NY and VK3AAK. VK6BE worked inland to Trevor VK3VG in central Victoria. VK7BBW and VK7HDX reported hearing the 2 m VK6RST beacon weakly. VK3AXH worked VK6JR. Jim VK3II reported hearing the Perth 2 m beacon and then worked VK6AO. That evening, there were still some good conditions between Adelaide and Perth, but they faded away as the night fell.

Unfortunately, I was away for most of December during the meatiest part of the E's activity, but Ron VK4KDD made a good summary of the happenings:

On 18th December, finally the Es have started on 2 m.

It was 9.35 am local time in Brisbane when I called CQ on 144.1, having the 6 m rig on as well. I heard VK7CEJ coming back to my call. I called on 2 m, he replied on 6 m. I called again on 2 m, but now like this: "CQ 2 metres, CQ 2 metres, this is VK4KDD". Bingo, this time VK7CEJ got it and the sound came out of my 2 m speaker. Signals came up from S3 to S9 when QSO was complete.

From then on things started to move quicker and one station after another made it into the log. Very short contacts were made, just time for callsign and report before they disappeared into the noise.

VK3 started to come in – VK3WRE, VK3PY, VK3UHF

Back to the VK7 – VK7FWAY, VK7MO

Then to VK5 (this opening would last for more than 2 hours) - VK5ZK, VK5BC, VK5BZK, VK5NY, VK5ACY, VK5EME, VK5DK, VK5DL, VK5UK

Finally another VK7 made it into the log - VK7XGW and VK7CEJ heard.

December 19th was pretty much a replay of the previous day, but with lots of excitement in other parts of the country. First openings from North VK4 to VK3 and VK7. Then the Es came down along the VK4 coast, from Rocky, McKay to Hervey Bay finally to Brisbane. VK3 and VK5 and VK7's were worked, pretty much the same stations as yesterday with a few new ones around. A notable contact - VK7MO to VK4BKP at 2429.6 km

On the VK Logger, I noted that in the south of the country, 2 m had opened between VK5 and VK6 on ES. VK6WG worked VK5NY, VK5EME and possibly more. Was it possible for a VK4 to VK6 contact via double hop Es? I started calling towards VK6.

VK2DAG who was also on the Logger, followed the plan and also called, his situation made difficult by heavy Ch 5A QRM. Then VK2DAG reported voices on 144.130. At 0332Z, he worked Wal VK6WG – a distance of 3146 km and new VK2 record. He even had time to exchange QTH info and Merry Xmas with Wal. However, his record was not to stand for long.

Steve VK2ZT who was following the Logger from work, thought it might be a good idea to head home for a break. At 0335Z, he worked VK6BE – a distance of 3207 km, resetting the VK2 record once again. (Later update – Bob VK6BE was not sure of Steve's callsign and so he may not claim the VK6 record for that contact).

But the excitement was not over. VK6HK in Perth appeared on the Logger, while VK1ZQR and VK1BG commenced calling to the west on 144.1. At 0442Z, VK6HK reported that he heard a "BG" on 100 signing with a whistled "K". At 0501Z, VK1BG reported that he got clear copy of the VK6HK callsign. At 0514Z, VK6BE worked VK2ADB who lives very close to the VK1 border. Unfortunately, nothing further was heard, so no VK1 to VK6 QSO was achieved.

The following day – December 20th – was again lively. The band opened from VK5 to coastal VK2. VK5NY reported strong VK2's. VKEME, VK5DL and others worked Ross 2DVZ. VK5DL reported VK2AH 55 (829 km), which might not have been Es. ZL looked promising, but did not happen.

December 21st and yet another day of Es. 6 m was strong to ZL, and NZ FM stations started to appear. At 0015Z, ZL1AVZ was worked by VK2ZT and VK2DVZ via Es. In VK4, the MUF did not peak high enough. Otherwise, a relatively quiet day.

December 22nd, and more Es from VK5 to VK2 and VK1. That's the 5th day in a row with Es. VK1VP worked VK5NY and VK5BC. VK5NY also worked VK2BHO and was heard by VK2DAG and VK2ZT, but gone before a contact was made.

December 23rd was a difficult day for Es on 2 m. The MUF went up and down several times during the day, but just a little short for Es on 2 m. The evening had already started and then there was a report about 500 km short skip on 6 m in VK2. At 0920Z, VK4BG worked VK7JG.

December 29th brought a day of records for ZL and I think the best Es we have had so far. The 2 m band was open for early morning to late evening from coastal VK2 to mid VK4 to far north VK4 with openings to VK5.

ZL was open to far north Queensland. At 0035Z, ZL1IU worked VK4FNQ – a distance of 3171 km. VK4DMC worked ZL1CN for a new ZL record of 3549 km.

My best DX for the day - walking in the street in front of my house as pedestrian mobile with the FT817, 5 W and 1/4 wave telescopic vertical. Worked VK4FNQ in Charters Towers (1050 km) receiving a 58 report.

Thanks to Ron VK4KDD for that very comprehensive report.

Further to the new ZL to VK record, Dale VK4DMC in Atherton sent the following:

During the recent 2 metre openings, I worked ZL1CN located in Wellsford, NZ. Murray, ZL1CN, contacted me a few days later and said that the contact was a NZ VHF record and also the VK/ZL record distance worked (3549 km).

Conditions on the day were excellent and I owe a big thank-you to John VK4FNQ who rang me to let me know that the band was open to ZL and Southern VK areas.

Station details are: IC-7000 + 200 W linear into an 11-el yagi at 8 m above ground.

Continuing on, December 30th brought a Tropo opening across to ZL. David ZL1BT was hearing Channel 5A at increasing strength. At 2130Z, he worked Steve VK2ZT and later VK2TK and VK2DVZ on 2 m. Meanwhile, Andrew VK1DA who was holidaying near Batemans Bay had casually called CQ to the east, unaware of any opening. Imagine his surprise when Nick ZL1IU responded to his call, sounding like a local. Other contacts were ZL1SWW to VK2DVZ (5/5) and ZL1AVO to VK2ZT.

On January 2nd, there was some action across the Bight to VK6. The Albany 2 m and 70 cm beacons were audible in Melbourne from about 2000Z. At 2250Z, Bob VK6BE worked across to Mark VK5EME and Jim VK3II on 2 m. At 0030, Mark worked Wal VK6WG on 2 m and 70 cm. At 0057, Andrew VK3KAQ worked VK6WG on 70 cm. That evening, the enhancement was still present and at 1220Z, David VK3QM worked VK6WG on 2 m.

The following day, the band was still open across the Bight, and conditions intensified as the day wore on. At about 0100Z, VK6WG worked VK5BC/P and VK5DK on 70 cm and VK5AKK on 23 cm. By 0400Z, Wal was so strong in Adelaide on 2 m that he was heard off the back of the beam by VK5EME. With beam facing in the correct direction, VK5EME worked VK6WG on 70 cm with S9++ reports. That evening, signals were still strong. At 1000Z, VK5DL worked VK6BE on 2 m and VK6WG on 70 cm. At 1100Z, VK5NY worked VK6BE on 2 m (5/9) and VK6WG on 70 cm. VK5ZK also worked VK6WG on 70 cm. VK5RU reported still hearing VK6WG on 23 cm at 1200Z.

Meanwhile, at around 0330Z, there was a brief Es opening from VK4 to VK3 and VK7. VK4KDD worked VK7CEJ and VK4WS worked VK3ZYC, VK3XPD and VK3AFW.

January 8th saw another opening across to ZL, this time to the south island. Bob ZL3TY in Greymouth was hearing Ch 5A in Newcastle and pagers. At around 0200Z, he worked VK2ZT (5/9) and VK2AH (3/1) on 2 m. At 0420Z, he worked VK2DVZ (5/5), VK2KOL (5/3) and VK2ZT again, still at 5/9. At 0530Z, he worked VK2FZ and VK2ZCV (5/4) before the opening faded out.

January 9th dawned promisingly with early reports from ZL of VK2 FM broadcast stations being heard via Es. Tropo conditions across VK3 were also very good, with Terry VK3ATS in Mildura reporting hearing the VK7RAE 2 m beacon in northern Tasmania. He then worked VK7HDX (917 km). At 2300Z, the Es then opened strongly between many stations in Brisbane and Adelaide. Phil VK5AKK reported working VK4WS, VK4KK, VK4XRA, VK4ASB, VK4OE, VK4ARN, VK4ARS and VK2ADY in a little over an hour. Brian VK5BC/P worked VK4's WS, ARN, XRA, OE, APG, ARS, KK, JMC, KR and VK2's ZT, ADY. Meanwhile, ZL had opened strongly to VK2 with ZL1BT reporting 2 m contacts with VK2ZT (5/8) then later VK2DVZ (5/9+20) and VK2DAG (5/9+40). VK2ZT also reported hearing VK5BC. Ross VK2DVZ reported that ZL signals seemed stronger when he was beaming at Adelaide. Brian VK5BC/P at Corny Point takes up the story:

A little after 0130Z, out of the noise on 2 m comes David ZL1BT calling CQ. David is 5/9 and an easy contact at a distance of approx 3402 km. Several other VK5's including VK5AKK, UK, GF (on a vertical!), DL and EME work him. At times, at this QTH, he peaked an unbelievable 20 over S9 and at one stage went QRP (2.5 w) and was still 5/1. In between the mayhem, VK2's were popping in and out and I worked VK2ZT & VK2DVZ. David ZL1BT was a good signal for about 30 mins.

Approx 1 hour later the band came to life again with Steve ZL1TWR in Katikati calling CQ at 5/6. Again a good contact was had at a distance of approx 3482 km (I think a VK5-ZL record). Following this contact I worked VK2ARA & VK2KOL & VK1BG.

There has been some discussion as to the mode of propagation from VK5 to ZL. A

VK2 station reported hearing both sides of the VK5/ZL contacts. ZL1BT reported that, at one stage, VK2DVZ was S9+20 when pointing Adelaide, but only S5 pointing ZL. There is no doubt that there was Tropo enhancement between VK2 and ZL. However, given the strength of some signals, there was also probably Es from VK2 to ZL. From VK5 to VK2, it was Es. The SPOT map from the VK Logger shows an interesting pattern.



However, the day was not yet over – we've only got to lunchtime. The Tropo enhancement starting moving south and ZL3's started appearing in VK2. At 0210Z, Bob ZL3TY in Greymouth reported working VK2ZQX, VK2ADY (Tamworth) and VK2DVZ on 2 m. VK2DVZ also worked ZL3AAU, ZL3MH, ZL3NW and ZL3OC. At 0310Z, Rex VK7MO in Hobart worked ZL1BT (5/5) – 2440 km. At 0549Z, ZL3TY reported hearing the VK3RGI 2 m beacon in Gippsland. At 0600Z, he worked VK3HZ in Melbourne on JT65a digital (-10). No voice contact was made although signals peaked strongly during the digital contact. ZL3TY then worked VK3VHF and VK3EK, both in Gippsland. Bob's CW was audible in Melbourne for nearly half an hour. By 0630Z, the opening had gone.

10th January – the tropo opening from VK to ZL was still present, but initially much weaker. Contacts were generally fairly marginal but widespread, between stations in VK2 and VK4 to ZL1, 2 and 3. However, at 0530, Nick ZL1IU was heard very strongly by Rex VK7MO, while attempting a digital-mode contact. They made contact on SSB with 5/9+ reports. Rex reported that Nick's signal was at S9 levels for almost 3 hours. Later that day, there was again a strong Es opening between VK4 and VK3, 5 & 7. Many stations at each end enjoyed some very loud signals.

Summer VHF/UHF Field Day

The Summer VHF/UHF Field Day over the weekend of 11/12 January has just happened, and it was good to see strong participation from stations both in the field and at home. It was good to hear people moving quickly away from the 150 calling frequency, leaving it free for others. Several distant, single-operator stations (VK3BJM/2 and VK1DA/1) nominated liaison frequencies away from 150 where they would call and the strategy seemed to work for them with many more contacts logged

than on the Spring Field Day. On Saturday afternoon, a sporadic-E opening on 2 m added to the action, with stations working from VK1, 2, 3 and 5 into VK4.

Andrew VK1DA had an interesting time on Mt Ginini:

I would like to thank all the other field and home stations for participating in the weekend's operations, even if the field day contest was at times merely a distraction from the 2 m DX. My total score was 197 - roughly double my previous single operator score.

The contest opened for me when my mobile rig monitoring 2 m heard Ed VK1VP working a VK4 while I was still setting up the antennas just after midday. After putting up the 2 m and 70 cm beams, starting the alternator and setting up the IC910, I joined in for the first 20 contacts, 6 of whom were VK4's.

(While working the VK4s in this period a couple of tough looking characters turned up in their 4WDs, having fearlessly braved the rough road to reach this distant point for their day's expedition. They asked "where is that bloke coming in from" and shrugged when I named a Queensland location. I told them this was on 144 MHz but they weren't impressed. You can't please everyone all the time.)

My log shows a gap from 0325 till 0512, which was the period when I put up the remaining antennas and the tent just in time for the rain to start, followed by some rather close thunder with nearby lightning strikes. This situation worsened to the point that I sealed up the tent, leaving nothing connected to anything, got into the car and drove down the hill 200 m to get away from what felt to me like a precarious situation. I stayed away until the strikes were occurring on more distant hills and didn't seem to be so near to me. Even so it took a while for me to believe it was safe to reconnect the radios, but in the meantime I assembled the other gear, moved other stuff into the tent and generally finished setting up.

The weather stayed mild and the sky was fairly clear at midnight when I stopped for the night, disconnected all antennas and the power cable, turned off the power and lights to get some sleep. At 2 am, I realised the lightning from the west was lighting up the top of the tent and I studied it with some interest through the side window. At 2:30 I decided that maybe the car was a better place to be. The storm arrived around 2:45 and put on quite a big display with the nearest strike apparently being about 3 seconds away. The storm passed over or around Ginini and the area to the east was well lit for a while. Finally went back into the tent around 4:30 and at 5:30 decided to get up and start the day's operations. Filled the tank and it lasted over 6 hours, only to run out when making the final contact of the day with Barry VK3BJM, after the field contest ended.

My radio impressions:

- *using a smaller 2m beam (8 el) didn't seem to make any difference to contacts made*
- *I think my plan to use 180 as a liaison frequency did work well.*
- *on 1296 I had a rather small Jaybeam 12+12 element slot yagi and expected to work only the locals - but was delighted to make several contacts with Adrian VK2FZ in Sydney and Robbie VK3EK in Bairnsdale. I did hear Barry VK3BJM's keyer sending dits but given the power differential and the weak signals we didn't attempt a two way contact at the time.*
- *made good contacts with VK3BJM/2 near Balranald on 2 m and 70 cm - skeds assisted by microwave communications (mobile phones)*
- *had a problem with my 2 m rig (IC271H) and fortunately I had taken a backup rig. It's a long drive (72 km, about 80 minutes each way) to go home to get spares*

from this location.

- use of calling frequencies for contacts did not seem to be as much of a problem, but that may be because I didn't spend much time on the calling frequency. I did hear some people making contacts and complaining about QRM from people calling CQ.

I would support doing away with calling frequencies for contests. It's a contest. Let people work out for themselves what the big knob is for if they can't hear anyone. The rules could simply remind people to observe the band plan and to avoid established DX calling frequencies for contest operation.



The VK1DA Field Day Setup (Note the Dark Clouds)

Beacons

From Mark VK5AVQ: *Good news - the VK5VF Adelaide beacons have received a great Christmas present - a new home not far from the previous site. At this stage*

there are still formalities, but we are confident enough to announce that it's looking good.

The short-term intent is to get 2 m and 70 cm up temporarily for the "DX season", with a more permanent mast to be installed over the longer term.

A late note – the beacons were heard on 15 January.

Please send any Weak Signal reports to David VK3HZ

Digital DX Modes

Rex Moncur – VK7MO

This year, the British Astronomer, Alastair McBeath, forecast a "great year" for the Geminids meteor shower with a peak at 1645 UTC on 14 December. This meant a number of hardy soles got up at 3.00 am (and for Queensland this was 2:00 am) to try for special meteor scatter contacts on two metres. A number of contacts were made from VK1, 3 and 7 to the South Island of New Zealand with the longest being from Rhett VK3VHF to Bob ZL3TY over 2074 km. The furthest ping copied was from Wayne VK4WS to ZL3TY at 2322 km. Overall it is estimated that the Geminids produced about 5 times as many pings as normal background.

Gavin VK3HY was one of the participants: *I operated FSK441 on 144.230 MHz from 05:30 local time on Saturday morning and was greeted on the VK/ZL logger by Wayne VK4WS with 'Good afternoon Gavin' so I'm guessing he and others may have started a few hours earlier. There was quite a bit of activity with many loud pings and numerous burns. It was certainly a well above average morning. I completed FSK441 contacts with VK4EME VK4WS VK4JMC VK2ZT VK2KOL VK1WJ VK2AWD and VK2FZ. I'd not worked VK2KOL or VK2ZT previously so that was a bonus.*

I didn't participate in the earlier attempt to work ZL because there is a little hill, not far from where I live, called Mt Dandenong in the way. I have worked ZL on 2 metres tropo but MS seemed a little optimistic.

Sunday morning was back to normal - the meteors shower seemed to have moved on.

With lots tropo and sporadic E openings on two metres over summer, a number of stations have made JT65 contacts prior to the openings being good enough for SSB. VK3VHF and David VK3HZ to ZL3TY. Steve VK2ZT, Colin VK2KOL and Rex VK7MO to ZL1BT. The practice across the Tasman is for ZL to transmit first on 144.225 using JT65a.

VK3VHF has his 1296 MHz station operational and made his first contact to southern VK7 with VK7MO using JT65.

Welcome back Doug VK3UM, who surprised many with an appearance during a FSK441 meteor scatter session – such that one VK4 rang Doug to warn him a pirate was using his callsign.

Please send any Digital DX Modes reports to Rex VK7MO

The Magic Band – 6 m DX

Brian Cleland – VK5BC

After a slow start, the summer sporadic E season got into full swing from Dec 13th. Although there were some days where the band opened all day when most states & ZL could be worked, the season did not seem to reach the heights of the 2006/2007 season with far less openings to VK6 and ZL. The season was made more interesting with several Pacific stations being active and worked from most states of VK & ZL.

From VK6 Graham VK6RO reports a reasonably quiet season with good openings on the 18/19th December to VK2, 3 and ZL and on the 29th December to far north Queensland when VK4AQ, VK4FNQ, VK4DB and VK4BEG were worked.

Paul A35RK operating from Lifuka Island, OC-169, grid locator AH20te (part of the Tonga group of Islands) was much sought after from both VK & ZL and was first worked by Kerry ZL2TPY on 28/11/07 on SSB and then in VK by Steve VK3OT, John VK4FNQ & Kevin VK4BKP on 3/12/07 on CW. The most distant station worked by Paul was John VK6JJ on the 31st December, a distance of 6970 km. Paul regularly monitored the band and openings occurring on 15 days from late November to early January. The table below is a summary of Paul's log to up to 2nd January 2008.

AREA	CONTACTS	CALLSIGNS WORKED	
VK1	1	1	VK1VP (SSB)
VK2	63	36	16 CW, 47 SSB
VK3	27	16	10 CW, 17 SSB
VK4	46	27	18 CW, 28 SSB
VK5	21	10	7 CW, 14 SSB
VK6	1	1	VK6JJ (CW)
VK7	1	1	VK7JG (CW)
VK8	1	1	VK8MS (SSB)
VK9	1	1	VK9ZLH (SSB)
TOTAL VK	161	94	53 CW, 108 SSB
ZL1	5	4	1 CW, 4 SSB
ZL2	8	4	1 CW, 7 SSB
ZL3	21	10	12 CW, 9 SSB
ZL4	2	2	1 CW, 1 SSB
TOTAL ZL	36	20	15 CW, 23 SSB
FK8	1	1	FK1TK (SSB)
3D2	3	1	3D2AG/p (1 CW, 2 SSB)

Paul was running 100 W from a Yaesu FT-857 and using a 4-el yagi on a 3 m boom. It just shows what can be achieved with multiple hop sporadic E when there is a station out there monitoring the band. Thanks Paul for your great efforts and time - you were a new country on 6 m for the large percentage of those who managed to work you. The picture below shows Paul in his shack.



Another station of interest from the Pacific area was Tony 3D2AG who was operating portable from Rotuma (north of Fiji), grid locator RH87mm. Tony worked Phil VK2FHN on the 23rd December on CW and then several VK/ZL stations on the 30/31st December on CW & SSB. This included VK1, VK2, VK3 & VK4's (from Cairns to Brisbane) and Garry VK5ZK, Roger VK5NY & Brian VK5BC/p (Corny Pt).

Doug VK9ZLH from Lord Howe Island also made a couple of appearances, notably on the 17th November when he was very strong into VK5 working several stations. Richard VK5UK reports Doug being 20 over S9. Doug also worked into VK3 & VK5 on the 27th December.

Keep monitoring the beacons and call channels as many openings occur well into March.

Please send any 6 m information to Brian VK5BC