

## Radio Weather Summary for December 2008

Another classic bottom-of-cycle month. Apart from a small C-class flare, which appeared on the 11<sup>th</sup>, solar activity was very low. The C-class flare had been preceded by numerous sub-flares in the A and B class range and was the product of a small new-cycle sunspot group that appeared on the 10<sup>th</sup> and rotated from view on the 12<sup>th</sup>. Otherwise, most days were spotless. 2008 was the year with the most spotless days – 266 – since 1913, when there were 311.

As the table below shows, the solar flux again varied within very narrow limits, with lows of 68 at the beginning and end of the month and 'highs' of 71 on the 11<sup>th</sup> and 12<sup>th</sup>. The 90-day average was 68 on the 1<sup>st</sup> and 69 on the 31<sup>st</sup>. The most recent smoothed sunspot numbers, for May to July, were 3.5, 3.3 and 3.2 respectively. We still await confirmation that we have passed through solar minimum. The X-ray flux remained at A0 level throughout the month.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SFlux	68	69	69	70	69	69	69	69	69	71	70	71	70	69	69	69	69	68	69	69	69	68	69	69	69	69	69	70	70	69	69

Conventionally, geomagnetic minimum follows some 18 months after sunspot minimum and the month's provisional geomagnetic figures for the three UK observatories are all low or very low. The daily figures in the table below are the sum of the Ks for the 8 3-hour periods in the day. There were again no periods for which any of the observatories reported a K above 4, while the planetary A index reached double figures, just, on only two days – the 5<sup>th</sup> and 31<sup>st</sup>. By contrast, there were five days for which the index was 'inactive', with an Ap index of 0.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
LER	0	0	4	13	15	18	10	3	0	3	5	3	1	0	2	8	5	2	6	0	1	5	15	10	3	4	1	1	0	1	16
ESK	0	0	6	16	19	21	13	4	0	5	8	4	2	1	3	11	8	2	8	1	1	9	18	11	6	3	3	2	0	1	23
HAR	0	0	9	17	20	23	14	4	0	5	9	5	4	1	8	12	11	4	8	2	2	10	22	15	7	3	4	2	3	1	23
Ap	0	0	4	6	10	7	6	5	0	2	3	2	1	0	1	4	5	1	3	2	2	4	9	5	3	1	1	2	0	1	10

## 50MHz

### Propagation to and from Britain

#### Aurora-related

No reports

#### Meteor Scatter

This Report has frequently noted that the major meteor showers seemed not to have stimulated meteor scatter working. This month proved an exception, with the Geminids peaking on the 13<sup>th</sup>-14<sup>th</sup>. The number of reported contacts was scarcely overwhelming, but it was considerably larger than we have been accustomed to. Activity may also have been stimulated on the days preceding the peak.

The range of countries for which JT6M/ms contacts were reported was substantially greater than in recent months. The country breakdown was LA: 24; OZ 9; HB 8; EA 7; SM, CT, OE 6; PA, YU 3; SP, ON,I, IS, inter-G 2; S5, F,LZ,YL 1. DLs, who might have been expected to figure fairly prominently, are not allowed to use digital modes on 50MHz.

Dec 1 2231 PA

Dec 3 2224 LA

Dec 4 1456 SM7

Dec 5 2329 LA

Dec 6 0809 LA

Dec 7 0736 EA5 0841 EB1 0850 EA3

Dec 8 0931 HB

Dec 10 0842 LA 1836 OZ 1846 LA 1939 LA 2026 OZ 2121 CT 2303 LA

Dec 11 0930 LA 1121 EB1 1742 YT1 1749 YT1 1830 OZ 1841 G 1901 LA 1913 LA 1916 LA 1923 CT 2013 F

Dec 12 0806 OZ 0936 OZ 1541 EB1 1835 CT 2052 OE5 2140 YU1 2314 LA

Dec 13 1041 OE5 1056 LZ1 1102 SM7 1106 PA 1535 LA 1546 LA 1629 CT 2017 OZ 2021 HB 2051 CT 2116 OZ 2149 LA 2227 I1

Dec 14 0824 SM5 0947 ON 0947 LA 1001 I1 10-1100 EB1 1041 OE5 1157 CT 1229 LA 1338 HB 1415 LA 1457 HB 1505 LA 1553 LA 1658 HB 1659 HB 1706 YL 2026 SM6

Dec 15 1045 LA 1100 SP3

Dec 16 1640 SP9 2120 LA

Dec 17 1143 OE5

Dec 18 1550 ON

Dec 20 1713 HB

Dec 21 1234 LA 1644 LA 1833 OZ 1857 OZ

Dec 22 1528 SM7

Dec 23 2255 OE1

Dec 24 1044 PA

Dec 26 1037 IS0

Dec 28 1036 OE5 1312 SM7 1540 EA4

Dec 29 1749 GW-G 1857 S5

Dec 30 1007 IS0 1036 HB

Sporadic-E

The Christmas period sometimes produces interesting sporadic-E. Not much of that this year, as far as UK operators were concerned. That all three openings were towards Mediterranean areas was to be expected.

Dec 6 1004 GB3BAA I7 5 18 EA3SIX 5 1052 OE5 + 1101 9H +

Dec 13 1931 G4IGO>CT 9 1933 GB3MCB 7

Dec 14 0935 G4IGO>9A 9 1028-1039 ED7YAD 7 CT1ART 3 CS1RLA EA4Q 5 1058 EA7BYM 7

Tropo

Good tropo extended down in frequency to 50MHz, with at least one contact exceeding 500km and several over 400km.

Dec 12 1651 G3VYF>PC7M(424km)

Dec 13 1544 G3VYF>PE2PE(FB tropo)

Dec 26 1534 G4DEZ>PA(466km) 1549 G4AJC>PA(488km)

Dec 27 1437 G3MEH>PA(509km)

Dec 28 1408 G4DEZ>PA 1437 G3MEH>PA

Dec 29 1441 G3MEH>PA

## **Continental Europe, Africa and the Middle East**

### **Auroral-related Propagation**

As noted earlier, the geomagnetic figures for the month were consistently low. However, at high latitudes, there can still be periods when activity surges briefly without producing a K of 5 for the full three hours. And so it seems to have proved on at the four days listed below.

Dec 5 1630 ES3>SM2(57a) 2309 OH8>ES3(55a)

Dec 7 14-1500 SK3SIX>OH6(55a)

Dec 11 SM3>OH8(55a)

Dec 17 1642 OH9SIX>SM2(57a)

### **Other Modes**

It was, as SV1DH says, a poor month, A couple of brief sporadic-E events were reported, as were a small number of tropo contacts, but the default mode was quite clearly ms by means of JT6M (jt). Which is not everyone's favourite mode of operating. The peak period for the Geminids attracted a considerable increase in activity, indeed the most substantial amount we have seen recently on this band. Otherwise, the unremarkable record that unfolds below, speaks for itself.

Dec 2 1845 LA>LA(jt)

Dec 3 17-1800 DL>UR LA>SP9(jt) 2037 SM4>SP9(Jt) 21-2200 OH5LID(ms) LA>LA(jt)  
SM0>LA(jt) 21-2200 SM0>PA(jt) 22-2300 LA>OH5(ms)

Dec 4 1137 OZ7IGY>I4 SP9>I4(ms) 12-1300 SP9>OH5(ms) 1419 HB9SIX>DL(tr) 1549  
SM2>OH5(ms) 16-1700 LA>PA(jt) ES3>PA(jt) 20-2100 OH5>PA(jt) 21-200 ES3>PA(jt) 2204  
ES3>SM7(jt)

Dec 5 1155 OZ>OH5(ms) 12-1300 LA>OE5(ms) OZ>OH5(ms) 21-2200 OZ>LA(jt)  
W1JJ>PE1BTX(eme) 23-2400 OH8>LA(ms)

Dec 6 08-0900 OE5>EA5(ms) 0948 I0JX>PA(Es) 10-1100 9H>I8,ON,PA 11-1200  
CS1RLA>OE5(Es) ED7YAD,CT1ART,CS1RLA>DL(Es) 18-1900 OH5>LA(jt)

Dec 7 06-0700 OZ7IGY>I4(ms/Es) 08-0900 EA1,EA3>PA(jt) OD5SIX>I8 09-1000 5B4CY>I8  
9H>ON I0JX>F 10-1100 DL>IT9 I0>SM7(jt) I0>PA(jt) S5>9A DL>EB1(ms) DL>LA(jt) 1251  
YU1>PA(jt) 21-1200 SM7>LA(ms) SM7>PA(ms) 1901 OZ7IGY>I4(ms)

Dec 8 08-0900 I1>HB(jt) I1>EA5(jt) 09-1000 EA1>EA1(ms) 10-1100 HB>SP9(ms)  
OE5>EA2(ms) 1157 EA2>EA1(ms) 1237 EA1>OE5(ms) 17-1800 HB9SIX>DL(tr) 1843  
OE5>OZ,S5(ms) IT9>9A(jt) 20-2100 OH5>OZ(ms) CU3>CT 2158 OH5>LA(ms)

Dec 9 1329 HG1BVB>SP6MLK(tr) 16-1700 S5>EA5(ms) HB9SIX>S5 1814 OH5>OZ(ms)  
SM2>PA(ms) 2054 OH5>SP3(ms) 21-2200 SM2>PA(jt) 22-2300 LA>LA(jt) LA>OH5(jt) 2304  
SO5>OH5(ms)

Dec 10 07-0800 OZ>OZ(jt) 10-1100 LA>HB(ms) 11-1200 LZ1>PA(ms) S5>HB(ms)  
OK1>LZ1(ms) 13-1400 LZ1>HB(ms) OZ>LA(ms) 14-1500 OH5>LA(ms) LA>ES3(ms) 15-  
1600 OZ>LA 1605-37 PA>ES3(ms) SM2>LA(ms) 17-1800 SP9>PA(jt) EB1>PA(ms)  
PA>LA(ms) 18-1900 OH5>LA(ms) SM2>LA(ms) PA>LA(ms) SM0>LA(ms) 19-200 LA>LA(ms)  
20-2100 LA>Ia(MS) IT9>SP9(jt) 21-2200 OZ>LA(ms) IT9>9A(jt) 22-2300 PA>LA(jt)  
OH5>LA(ms) 23-2400 SM7>LA(ms) LA>LA(jt)

Dec 110847 LA>OZ(jt) EB1>EA5(jt) 1137 ES3>SM7(jt) 12-1300 IZ>SM7(tr) OZ>SM7(jt) LA>SM7(jt) 1651 LA>OZ(jt) 17-1800 EB1>EA5(ms) S5>EA5(ms) OH9>OH2 DL>LA(jt) EA3>EA6(tr) OZ>HA2(ms) 18-1900 LA>OE5(jt) SM3>SM1 OZ>SM2 LA>PA(jt) SM3>LA(ms) LA>SP9(jt) SP9>LA(jt) SM3>SP6 SA1>SM6 LA>LA(jt) YT1>PA(jt) LA>SP6 19-2000 LA>SM6(jt) LA>SP6(ms) OZ>SM1 SM2>LA(ms) SA1>SM6 OH9>OH8 LA>LA(jt) LA>PA(jt) 20-2100 OK1>LA(jt) 1026 SM1>SM6 OZ>LA(jt) PA>OK1(Ms) OH7>SM2 S5>IT9(ms) SM6>LA(ms) HB>LA(jt) 21-2200 I1>LA(jt) OH8>OH6(ms) SM0>PA(jt) LA>LA(jt) OH8>LA(jt) OH6>LA(jt) OH8>SP9(jt) OH6>LA(jt) JW7SIX>OH6 OH6>SP9(jt) SM6>PA(jt) 22-2300 YT1>SM0 I1>LA(jt) I1>IT9(ms) SM7>OK1(jt) LA>OK1(jt) EA1>EC1(ms) CT>EB1(jt) 23-2400 LA>LA(ms)

Dec 12 10-1100 SQ2>OH5(ms) 1206 DL>OH5(jt) 1459 PA>EB1(jt) 1543 OZ>LA(MS/ES) 17-1800 HB>EB1(jt) 19-2000 PA>CT(jt) PA>EB1(jt) YU`>PA(jt) 20-2100 LA>PA(jt) YU1>SP9(jt) CT>PA(jt) LA>HB(jt) HB>PA(jt) YU1>PA(jt) YO4>SP9(jt) 21-2200 PA>EB1(jt) YU1>ON(jt) OH5>ON(jt) 22-2300 PA>LA(jt) OZ>LA(jt) SP3>OH5(jt) 23-2400 PA>LA(ms) OZ>LA(ms)

Dec 13 00-0100 SP9>SM7(ms) 0753 I1>EA5(jt) 09-1000 I1>ON(jt) LA>ON(jt) 10-1100 i8>9H PA>EA5(ms) LZ1>SM7(Jt) ON>LZ1(ms) OE5>PA(jt) 11-1200 SM7>PA(jt) 1247 PA>HB(ms) HB>SM7(ms) 13-1400 OH5>PA(jt) 15-1600 PA>HB(jt) SM0>OH5(ms) LA>HB(jt) YT1>SM7(ms) 1658 OH1>OH5(jt) 17-1800 F>OZ(jt) S5>OZ I1>CT(jt) OZ7IGY>I3(Es) 19-2000 S5>F(ms) IT9>IS0(ms) LX>EA5(ms) EI0SIX>CT(Es) EA7>EA3(ms) OZ>HB(jt) SP3>LA(ms) 20-2100 OZ>OH1(ms) HB>OZ(jt) S5>SP3(ms) S5>HB(jt) OH1>LA(jt) CT>PA(jt) OZ>OH1(ms) OH5>SP7(jt) I1>HB(jt) OZ>LA(jt) 21-2200 CT>PA(jt) S5>I1(ms) OH7>OH5(jt) YU1>OZ(jt) S5>EA5(ms) OK1>OH1(jt) OH5>LA(jt) LA>LA(ms) OH5>OE1(ms) OZ>OE1(ms) SM2>LA(jt) PA>OE1(ms) YU1>LA(jt) 22-2300 OZ>OE1(ms) SV2>IT9(ms) PA>OE1(ms) SP7>OH5(jt) PA>SO5(jt)

Dec 14 09-1000 I1>PA(jt) CT>LA SM7>EB1(jt) LA>CT(jt) 11-1200 CT>F(Es) S5>LX CT>PA(Es) LX>HB(jt) DL>OH5 S5>DL(tr) CT>PA(tr) HB>DL(tr) 17-1800 YL3>SP9 LA>SP9(Jt) 18-1900 OH7>OZ(jt) 1954 PA>OH8(Jt) SM2>PA(jt) 21-2200 OZ>LA(ms) OZ>PA(jt) 22-2300 SQ2>PA(jt)

Dec 15 1638 PA>PA(ms) 19-2000 SP3LA(ms) F>DL(jt) 2050 OZ>F(jt) 21-2200 OZ>LA(jt) PA>OZ(jt) SM7>PA(jt) 22-2300 PA>LA(ms) 2324 LA>LA(ms)

Dec 16 10-1100 K6QXY>LX1FX(eme) 16-1700 PA>PA(jt) 2021 DL>OH1 2244 F>EA5(jt) 2308 LX>CT(jt)

Dec 17 1330 PA>ON(jt) 1244 OE5>ON(jt) 19-2000 SM0>PA(jt) JW7SIX>SM2(tr)

Dec 18 1507 PA>ON(jt)

Dec 19 2049 I5>PA(jt) 2102 I5>SP9(jt)

Dec 20 0656 K2ZD>PE1BTX(eme -24) 09-1000 I5>IT9(ms) S5>SP9(jt) IS0>IT9(ms) SP9>S5(ms) 11-1200 ON>HB(tr) HB9SIX>DL(tr) PA>SP9(ms) IS0>HB(jt) 12-1300 ON>SP9 PA>IS0(jt) 1549 LA>HA1(jt) 1937 SM2>PA(jt) SM2>LA(jt) 20-2100 OZ>HB(jt) OZ>OH5(jt) 21-2200 SO5>HB(jt) 22-2300 OH8>LA(jt) OH8>PA(ms/tr)

Dec 21 0831 PA>EB1(jt) 09-1000 EB5>EB1(ms) PA>LA(jt) ED7YAD>ZB(tr) 10-1100 ON>EB1(ms) 1143 HB9SIX>DL(tr) 12-1300 LA>PA(jt) ED7YAD>CN 1753 HB>HB(jt) 18-1900 F>OZ(ms) 20-2100 PA>OE5(ms) LA>HB(jt) LA>ON(jt) LA>PA(jt) 21-2200 UR>UR 2257 OH8>LA(ms)

Dec 22 0941 CT1ART>ZB(tr) 1236 ON>IS0(jt) 17-1800 LA>ON(jt) 18-1900 UR>DL(jt) SM2>ON(jt) 20-2100 PA>ON(jt) SM2>ON(jt) F>ON(jt) F>EB1(jt)

Dec 23 1155 SM7>HB(ms) 12-1300 PA>SM7(ms) 13-1400 I0>S5(tr) LA>ON(jt) 1440 9A0BHH>S5(tr) 1741 PA>OH5(ms) 20-2100 F>DL(jt) F>PA(jt) 22-2300 F>PA(jt) OE5>OE1(jt) 2325 OH8>OH5(ms)

Dec 24 0851-8 F>OE5(ms) F>EA4(jt) 09-1000 OE5>EB5(hjt) PA>ON(jt) 10-1100 PA>F(jt) PA>DL(jt) EA7>ON(ms) EA1>ON(ms) ON>EA3(ms) 1250 PA>LA(ms) 1322 LA>PA(jt)

Dec 25 0841 ON0SIX>DL(tr) 10-1100 EA3>EA5 CT1ART>EA7 1122 HB9SIX>DL(tr)

Dec 26 0856 EA3>PA(jt) 10-1100 F>PA(jt) F>CT(jt) 11-1200 HG1BVB>DL(tr) OK1>IS0(jt) IS0>I0 12-1300 CT1ART>EA7 PA>HB(jt) 13-1400 B>PA(ms) RA3>HB(jt) SM7>HB(jt) 14-1500 PA>OH5(ms) LA>HB(jt) 15-1600 IS0>I0 2025 OH6>PA(jt)

Dec 27 1413 HB9SIX,DF0ANN>DL(tr) 1951 F>DL(jt)

Dec 28 11-1200 OE5>EA2(jt) PA>EA2(jt) YT1>PA(jt) 1240 YT1>PA(jt) 14-1500 LA>PA(jt) HB>PA(ms) 15-1600 PA>EA4(jt) 21-2200 OH8>LA(JT) PA>OH5(MS)

Dec 29 17-1800 IS0>IT9(jt) 18-1900 S5>OZ 2241 OH8>LA(jt)

Dec 30 10-1100 DL>OZ(tr) 1116 IS0>I0 1357 PA>PA(ms) 14-1500 PA>PA(ms) HB9SIX,LX0SIX>DL(tr) 2249 PA>HB(ms)

Dec 31 no reports

#### 50MHz PROPAGATION REPORT FOR DECEMBER 2008 BY SV1DH

1. Data for all days (31)
2. Relatively good days on: NIL
3. 48 MHz AF video (9L+3C) on: NIL
4. 55 MHz AF video (5N) on: NIL
5. Openings to: SV9 on 1(T)
6. Special events on:
  - 10-12(SSN up 14, SFI up 71)
  - 11(0925 C1.4 flare)
  - 14(0630 ZL to SP+EM +2300 VK4 to W1 on 10m F2)
  - 18(1830 W6 to EA8 on 10m F2)A very poor month!
7. DXCC entities heard/worked during December 2008: 1 on 1 cont. 73 COSTAS

## The Americas

### Auroral-related Modes

Dec 4 0354 VE6EMU>VE7(429a)

Dec 23 04-0500 VE6EMU>W7(56a) VE7FG>W7(56a) W0(EN28)>W0(EN35 53a)

Dec 31 01-0200 VO2FUN>W1(FN44)(AuE) 0251 VE6EMU>W7(51 AuE) 03-0400  
W0(EN28)>W0(EN35 59a) VE3(EN35)>VE3(EN58 59a) W0(EN32)>VE4(EO10) K0KP>W8(Au/ms)

### Other Modes

Much more was happening in the western hemisphere than in the old world, though none of it was remarkable. To the south, there were 25 days when what appeared to have been evening-type tep was reported, the same as in November - though it looked as if it may have been falling away at the end of the month and to have a slightly more limited reach at both the north and southerly ends. We shall see when the January results are in whether this was indeed the end of the season.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+					+			

**CE** 1 day 2(KP4)

**CX** 2 days 5(YV) 11(YV)

**LU** 8 days 5(YV) 7(KP4,YV) 8(KP4,YV) 9(KP4,9Y) 10(KP4) 11(KP4) 16(YV) 18(KP4)

**PY** 24 days 1(V4) 2(FM) 3(V4) 4(KP4,YV) 5(YV) 6(HH,KP4,V4,YV,9Y) 7(FM,V4,YV,9Y)  
8(HH,KP,V4,YV) 9(KP,V4,9Y) 10(HH,KP4,V4,YV,9Y) 11(V4,YV) 12(KP4,V4,YV) 13(FY,KP4,YV,9Y)  
14(KP4,V4,YV,) 15(V4) 17(KP4,V4,9Y) 18(KP4,YV) 19(V4) 20(KP4,V4,YV) 21(KP4,V4,YV) 22(YV)  
23(V4) 24(V4,YV) 29(V4,YV,9Y)

However, in addition to tep much of South America also enjoyed sporadic-E during local summer; the detailed listings below record not only many PY<>LU and LU<>CE contacts but also many within LU. In LU callsigns, the letter following the number indicates location, with the first letters assigned to the capital and later letters (broadly) to the south. Thus, on the 1<sup>st</sup>, we have LW3EX in the Buenos Aires area reporting stations in Tierra del Fuego, which have 'Y' identifiers. And so on. It is not impossible – though this is mere speculation – that the poor tep results at the end of the month were at least in part due to occlusion by sporadic-E. And, whatever happened to ZP activity this month?

Recent commentaries have noted the paucity of reports from North America. There could be no such criticism this month. Unlike Europe, the United States and Canada enjoyed the kind of increase in sporadic-E that we are told to watch out for but less frequently actually experience. This was most notable between the 24<sup>th</sup> and 27<sup>th</sup>, which were characterized by strong sporadic-E lasting several hours, extending to all the US call areas and, on the 27<sup>th</sup> in particular reaching coast-to-coast. All this at a time when many more operators than usual were at leisure at home, in many cases with new rigs

they were itching to try out. While even a casual glance shows that the detailed listings for the period are more substantial than we have been accustomed to recently, they actually understate the position because the listings generally list contacts between call areas only once for any hour - and as often as not - a single contact is all there was, on this occasion there were often a whole string of contacts between those call areas. It just shows that, when people become aware that the band is strongly open, they quite rapidly come out of the woodwork in impressive numbers. How long will it be before we see a repetition? It should perhaps be noted, too, that there were several small openings within the Caribbean area and between the Caribbean and the US which appear also to have been attributable to sporadic-E, but no tep-Es linked contacts were observed.

Dec 1 21-2200 LU3YC,LU7YS>LW3EX 22-2300 P43JB,YV4AB>KE4WBO YV4AB>W4MOT(EL96)  
V44KAI>PP5XX,PY2HT 23-2400 VE3UBL>VE2(gw) VE3>W8

Dec 2 00-0100 NP4A>CE3SAD FM1HM>PP5XX 1515 W7>W5 22-2300 W8>W4 23-2400  
FM5BH>PP5XX

Dec 3 00-0100 V44KAI>PP5XX W5GOM>W9(tr) 02-0300 W4>W8 W4>VE2(ms) VE2>W8(ms) 1254  
W4>W8 15-1600 48.3,49.2(CE)>LW3EX 1716 PE1BTX>KE4WBO(eme -18) 20-2100 LU7YS>LW3EX  
49.2(CE)>LW3EX 21-2200 LU1WDY,LU8WAT>LW3EX 21-2200 LU8WAT>LW3EX  
LU8EXX>CA3SOC 22-2300 LU8WAT>CA3SOC,LU1FVE 2343 V44KAI>PY5EW

Dec 4 00-0100 TI2NA>NP3CW NP4A>PY5IP,PY2HT 01-0200 NP4A>>PY2REK W4>W4 03-0400  
VE7>W7 W3PIE,WA3TTS>W3 12-1300 W4>W9 22-2300 LU1DMA,LU1WDY>CE3SAD  
LU5EGY,LW3EX>VP8NO 23-2400 CE5PRD>LU1DMA VP8NO>LW6DC,LU4DMX LU7FTF>LU7YS  
YV4AB>PY5EW

Dec 5 00-0100 9Y4D>PU2PAV,PT7ZAP,PY2SEX,LU5CAB,PY5EW 16-1700 W8>W9 W0>W4(es/ms)  
18-1900 LU5EGY,LU9EO,LU8EML>LU7YS LU7YS>LW3EX 19-2000  
LU7FTF,LU7DZ,LU5HD>LU7YS 2159 VP8NO>LW3EX 23-2400 CX4CR,LU1WDY>PY3NZ  
YV4DYJ,YV5LI>CX4CR LU8EML>CX4CR YY5LI>LU5CAB

Dec 6 00-0100 VE3>VE3 CX>CX 01-0200 9Y4D,V44KAI,YV4AB>PY4AQA  
NP4A>PP5XX,PY3NZ,PY2HT,PY3MSF NP4A>PY3NZ 0450 VR4SPT>VE7 11-1200 W9>W4 12-  
1300 W4>W5 W8>W4(ms) W4>W4(tr) 13-1400 W0,W1>W4(ms) W8>W1(ms) W4>W3(Es) 16-1700  
W5,W0>W8 2031 48.2(CE)>LW3EX 22-2300 LU7YS>LW3EX VE3>W8 23-2400 V44KAI>PY5EW  
HH07RH>PY6KR

Dec 7 00-0100 9Y4D>PY3NZ PR8ZIX>PP5 01-0200 YV5KG>LUI1FVE,PP5XX,LU6HTR14-1500  
W8>VE3,W4 W7>W7(ms) 16-1700 W0>W9 W7>W7(ms) 19-2000 47-49(CE),LU7YS>LW3EX  
LU7WW>LU6HTR FY7THF>NP4A LU2MCA>LW3EX CX7BBR>PP5XX LU7YS>CE3RR 20-2100  
CE3RR>LU6HTR 21-2200 LU7WW(Patagonia)>PY3NZ,PP5XX PY3>PY2 PP5>PU2  
LU5EGY>PY4AWA CE3SIE,CA3SOC>LW3EX LU4FLJ,LU8EML>PP5XX 22-2300 W1>W8  
LU1MPV>PU2BFG LU2DEK>PP5XX,PP5AR LU7WW>LW3EX LU5DEM,LU1PMK>PP5AR  
FM5AA>PP5XX,PU2BFG LU1MPK,LU6HAR,LU9HH>PY2SRB CE6SAX>LU6HTR 23-2400  
PY2SHF>LU6DC,FM5AA W2>W4 V44KAI>PY5EW,PY4AQA,PY2SHF  
LW6DC>PP5AR,PP5XX,PY3PT

Dec 8 00-0100 W8>W0(sc) NP4A>PY3NZ,PY4AQA YV5KG>PW8GTB>PP5XX  
NP4A,YV5KG>LU6HTR 01-0200 OA4TT>PP5XX,PY4AQA  
NP4A>PY3MSF,PY4AQA,LU5CAS,PY2KPC 02-0300 W1,W2>W2 12-1300 WZ8D>>W4 14-1500  
W7>W7 18-1900 CX1CCC>PY2MAJ,PY4AQA LU5EGY>PY4AQA 19-2000 CX1CCC>PY4AQA  
PP2SIX>LW3EX 20-2100 CX1CCC>PY4 W5>W6 LU7FTF,LU1FVE>PY2MAJ PY2XB>LW3EX



PT9TA>LU1FVE LU1FVE<PY2SRB 21-2200 LU1FVE,LU8DIO>PT9PA LU7YS>LW3EX  
HH07RH>PY6KR LU2DEK>PY2SRB 22-2300 LU2MCA>LW3EX  
VP8NO>PP5XX,CX8DS,CX5CR,PU5AAD,PY4AQA LU4YAO,LU7YS>LW3EX  
LU9EO,LU8EML,LU6HTR>PP5XX LU6HTR>PY2SRB LU7FTF>PY3NZ LU4DQW>PY4AQA 23-  
2400 PW8>PY2 LU2WC>CE3RR,LW3EX LU1FVE, NP4A>PY4AQA,PP5XX,LW3EX,PY3NZ,PY2MAJ  
PU2PAV>CX5CR,LW3EX LU7FPA,LU5CAB>PY2SRB V44KAI>PP5XX,PY2MAJ YV5ESN>PP5XX  
LU1FVE>PY2KEY PW8>PY4,PY2 LU5HD>PY2PAV CX2CC,LU2DEK>PY2MAJ

Dec 9 00-0100 PY2SRB>LU6HTR LU7FA,LU6HTR,LU1FVE>PY8ELO NP4A,V44KAI>PY4AQA  
NP4A>LU4HTR,LU4EFC W5>W6,W7,W4 W5>W0 PR9ZIX>PY2 9Y4D>PY5EW 01-0200  
9Y4D>LW3EX NP4A>LU5CAB W5>W4 C6AFP>W5 K6FV>W7 02-0300 N6NB>W7 03-0400  
W6>W7(Es),W6 1504 47-49(CE)>LW3EX 20-2100 PP2RON,PP2SIX>LW3EX PY2GVY>LI1FVE 21-  
2200 W8>W4 PY2MAJ>LW3EX 22-2300 LU5EGY>PY2MAJ  
LU8DIO,LU4EFC,LU2DEK,LU2DEK,LU9EO,VP8NO,LU1EEP 23-2400 LU5CAB>PY2SRB,PY2MAJ  
PY2XB>LW3EX CX1DDO>PY2SRB LU8DIO>PY2SRB NP4A>PY4EEP,PT9PA,PT7ZAP  
CX1DDO>PT9PA

Dec 10 00-0100 NP4A>PT7ON,PU2WDF,PY2EL YV4AB>PY2SRB,PY2EL V44KAI>PY2SRB 13-  
1400 LU7YS,LU8WAT>LW3EX 14-1500 LU2MCA,CE5DXU>LW3EX LW3EX>CA3SOC  
LU6HTR>LW3EX 15-1600 LU3YC,LU7YS>LW3EX 48.3(CE)>LW3EX 20-2100 PY2MAJ>LW3EX  
LU6WN,LU1VD,LU7YS>CA3SOC LW3EX>PY5EW 21-2200 LU1FVE>PY2SRB PY2,PY5>PY9  
LU7FN>PY2SRB LU2MCA>PY5EW PP2RON>PP5XX LW6HAR>PY2SRB 22-2300 PY5EW>PY5EW  
HH07RH>PY6KR LU6HTR>PY2SRB LU2WC>LW3EX LU3YC>LW3EX,PY3MSF  
NP4A,LU3SOC,LU1WDY,LU7WW>PY3MSF LU1WDY>CE3SAD 23-2400  
9Y4D>PY3MSF,PY5EW,PT7ZAP LU6WN,CE5DXU>LW3EX YV5IAL,YV5ESN>PY5EW  
NP4A>PY2CUF,PY2SEX,PY5EW V44KAI>PY5EW CA3SOC,LU6HTR>PY3MSF LU2WC>LU6HTR  
YV4AB,9Y4D>PY5EW

Dec 11 00-0100 V44KAI>PY2OC YV5IAL>CX4CR W4>W4 W7>W6 0204 W6>W7 0413 VE7>W7 12-  
1300 LU1MPK>CA3SOC LU7YS>CE3SAD 13-1400 LU7YS,LU8WAT,LU3YC>LW3EX 14-1500  
LU6WN>LW3EX WZ8D>W4 LU3YC>LW3EX 1535-59 47-49(CE)>LW3EX LU5EGY>PY5EW 17-1800  
LU1DMA,LU8DIO>PY5EW 19-2000 LU5EGY,LU3HR,LU3ADK,LU5DDX,LU8DIO,LU8EMH>PY2MAJ  
PY5EW>LU3EX,LU5DDX,LU5EGY,CX1CCC,LU8EMH,LW2ETU,LU2MCA 20-2100  
PY5EW>LU7FN,LU6DC,LU2WC LU5DDX>LU2WC CX5CCC>CE3RR LW2ETU>PY2MAJ  
CX1CCC>CE3RR LU8ANB,LW3ENV>PY5IP CX6DI>CA3SOC,PY2SRB PY3AT>LU5DDX  
LU7TS>LW3EX LU5EGY>PY2SRB LU3YC>LU5DDX 21-2200 PY2NF,LU6WN>LU5DDX  
LU9DO,LU2MCA,LU8AJ,LW3ENV>PY2SRB LU5VV>CA3SAC PY3DU,PY3AT,PY2NF>LW3EX  
LU7FTF>PY2MAJ 22-2300 PP5AR>LW3EX PY2>PY2 LU8WAT,LU1FVE>LW3EX  
LU8EHQ>PY2SRB LU6WN>LU6DC CX1DDO,LW6DC>PY2SRB CE5DXU>LU5DDX  
LU5EGY,CX1DDO>PY2EL LU8YE>LW3EX,LW3EWZ LU9DO>LW3EWZ LU1MPK,CA3SOC>LW6DC  
CA3SOC>LW3EWZ 23-2400 LU1MPK>PY2SRB YW1TI>YV5SSB  
V44KAI,CX1CCC,LU5EGY,LU2MCA, LU6HFQ,LU9DO,LU9HH,LU7FTF,LW2ETU>PY5EW  
PT7ZAP>YV5ESN LU5BE,LW3EX>PY2HT LU2WC>CE3SAD LU1NPK>LW6DC

Dec 12 00-0100 V44KAI>PY2MAJ PR8ZIX,YV4AB,NP4A>PY5EW 0100 NP4A>LU5CAB 0431  
VA7SIX>VE7 1338 LU6WN>LU5DDX(tr) 1834 WZ8D>W4 19-2000 W9DR/4>W1 21-2200  
48.2(CE)>LW3EX VP8NO>LU5DDX 23-2400 TI2NA>NP4A NP4A,V44KAI>PY5EW(tep)  
LU5EGY>CA3SOC NP4A>PY5XX,PY3KN LW6DC>PY3KN

Dec 13 00-0100 LW6DC>PY3NZ,PP5XX NP4A>PY3NZ 9Y4D>PY3NZ,PY5EW,PP5XX  
YV4AB>PY5EW 01-0200 9Y4D>NP4A FY7THF>PY W9DR/4,K0KP>W1 W8>VE2 W5>W8 02-0300  
W0>W0,VE3 VE3>W9(ms) VE1>VE1,VE3,VE2(ms) W8>W3 W3>W9 W0>W8,VE2 03-0400  
VE1>VE9,W3,VE1 W4>VE3(ms) VE7>W7 04-0500 W7>W7(ms) W0>W7 0527 VE3>W7(ms) 11-

1200 W5>W4 W4>W3(ms) 12-1300 W4>W8(ms) WZ8D>VE2(ms) W4,W8>W5 W9DR/4>VE2(ms) 13-1400 WZ8D>VE2,VE3(ms) W8,W9>VE3 K4TQR,W9>VE2 KP4>W3 14-1500 W4>W1 W8>W4 23-2400 VO1ZA>VE2 NP4A>PP5XX,W1,W3,W4 9Y4D>PP5XX LU7WW>CA3SOC

Dec 14 00-0100 VE3WCC>VE2 NP4A>PP5XX,PY3NZ,W1,W2,W3,W4,VE3 V44KAI,YV5IAL>PP5XX 01-0200 V44KAI>PY4AQA KP4>W4 YV4AB>PY4AQA NP4A>W3,W4 C6AFP>W3 03-0400 WZ8D(Es),W9DR/4>W4 0422 N3CJM>W4 W7>W7 11-1200 W5,W4>W8 12-1300 W0>VE3 W4>W8 1358 W4>W4 14-1500 K8EB>W1 VE9>W3 W9>W4 1556 W4CLM>XE3 16-1700 W9DR/4,W4CBX,W4IT,VE2>XE3 W3>W0 17-1800 W4>KP4 19-2000 W6>W0 2225 W5>W0

Dec 15 00-0100 W0MTK>W5(Es) 0146 HI8LAM,C6AFP>W3 0207 VE2>W2 0303 W3DOG>W3 13-1400 WZ8D>W4 1435 C6AFP>W4 16-1700 WR9L,W0,W9DR/4,N0LL>W4 W5>W3 17-1800 W5GPM,WB0RMO,XE2,W4>W4 W4>W9(Es) W3,W1,W8>W5 NL2XM/2>W4(Es) XE2>W3 PY1>PY1 18-1900 WZ8D,K2ZD,W0,W9>W4(Es) W4>W5(Es) W5,W0>W3 19-2000 W0>W8 23-2400 V44KAI>PY2MAJ W3DOG>W2

Dec 16 00-0100 YV4AB>LW2EQS LU1FVE>YY4ACU 01-0200 W1>W5 02-0300 K4TQR>VE3 W0>W2,W3,VE3 W4>W3,VE3,W9(Es),W5,VE2,W9,W2 W5GPM>VE3 W1>W4,W5 W2>W3 03-0400 W2>W3,W5 N0LL>W3 W3,W4,W5>W9 K4TQR>VE2 W8,W0,VE2>W5 W0>W3,W6 04-0500 W3APL>VE2 VE3UBL>VE2 W4>W2 W0>W3 W9>W6 W2,W7>W9 W5-W6 N0LL>W7 0952 LX1FX>W7GJ(eme -23) 14-1500 VE1>W4 15-1600 VE3>VE2 KD4AOZ>VE1 W3,W2>W4 16-1700 W1>W4(Es) W3DOG>W4,W3 W4>W4(Es) UN8GC>W7GJ(eme -23) WZ8D>W4 17-1800 W9DR/4>W4 XE2WWW>W0,W4 W4>W5 W5>W7,W4 W7>W4 18-1900 XE2WWW>W7,W4 W5>W4 19-2000 W4>W4 22-2300 CE3RR>LW6DC 2351 W3>VE3

Dec 17 00-0100 W4>W4 01-0200 NP4A,V44KAI>PV8AZ 02-0300 W0,W9>W4 03-0400 W4>W5,W0 15-1600 W8>W7(eme -21) 16-1700 W1,W5>W4 PA3GCV>K6QXY(eme -25) 18-1900 K0KP>VE2 2037 W0MTK>W7 23-2400 V44KAI,NP4A,9Y4D>PY5EW

Dec 18 00-0100 PU8>PY5 W8>W8 01-0200 W2>W1(Es) W1,W4>W4 OA4TT>PV8AZ 02-0300 W4>W0 03-0400 W4>W0(Es) W4,K0EC>W5 05-0600 KA0CDN,WA7X>W7 K0EC>W7 15-1600 C6AFP>W4 W9>W1(Es) 1744 LU8EMH>PY2MAJ 18-1900 W7>W7 19-2000 VE3>W3 LU5EGY,LW3EX>PY2MAJ PY2BW>LW3EX W7>W7 21-2200 LU5EGY>PY5EW PY5EW>LW3EX 2259 V44KAI>PY5EW 2353 NP4A>PY5EW,LW3EX

Dec 19 0014 VW2>W9 01-0200 W4>W4 W3>W2 1546 W4>W4 16-1700 W4>W4 W1>W8(sc) 1911 47-49(CE)>LW3EX 2329 V44KAI>PY5EW(tep)

Dec 20 00-0100 NP4A>PY5EW 01-0200 W9>W9 0259 V44KAI>PY5EW 03-0400 YV4AB>PY5EW VA7SIX>VE7 0612 VE7>W7(ms) 1250 W4>W4(tr) 13-1400 W8>W4(ms) 15-1600 W8>W4,W5 KD4AOZ>VE2(Es) 16-1700 VE2>W8 W9DR/4>VE2,W8(Es) VE2>W3 17-1800 W4>W0(Es) 2329 V44KAI>PY5EW

Dec 21 00-0100 NP4A>PY2HB 01-0200 YV4AB>PY5EW N0LL>W7 12-1300 LU5EGY,LU1DMA,LW1DX,LU9AEA>PY2MAJ PY2MAJ>LW3EX 13-1400 W8>W4(Es) W1,W4>W4 VE9>W8 14-1500 W4>W4W8>W1(ms) 47.9(CE)>LW3EX 15-1600 KA7BGR>W6 W4>W3(sc) 1643 W9DR/4>W8 17-1800 FY7THF>NP4A 19-2000 PY2MAJ>LU4EFC PU3TZY>LW3EX 20-2100 PY3NZ,PY3PT>LW3EX LU8EMH,LU1DMA,LU4DQW,LU3DZK>PP5AR CX1DDO>PP5AR LW6DX>PY3NZ ,PY2MAJ 48.3(CE)>LW3EX PY3PT>LW6DC 21-2200 LU2DKX>PY3PT LU3DDH,LU1AL,LU2DKX>PP5AR CX5CR,LU5EGY>PP5XX PY3AT>LW3EX,LW6DC W4>W4 PP56XX>LW3EWZ 22-2300 LU1XAD(Tierra)>PP5XX LU7DTU,LU6DLL,LW6DC>PP5XX W3>W4 23-2400 V44KAI,YV4AB>PY5EW(tep) LU7YS>LW3EX

Dec 22 00-0100 YV5ESN>PY5EW CX1DDO>CE3SAD 13-1400 LU5EGY>CE3SAD  
LU9AEA,LU1DMA,CX1CCC,LU5EGY>CA3SOC 1450 W0>VE3 19-2000 48.2(CE)>LW3EX  
LU2MCA>PY2MAJ 20-2100 CA3SOC>LW3REX W9DR/4>W9 21-2200 LU2MCA>PY2MAJ,PY3SRB  
LU4FLJ>CE3SAD LU7FPA>PY2SRB

Dec 23 0125 V44KAI>PY5EW 13-1400 W8>VE3 1755 WA1OJB>VE9(tr) 18-1900  
CX6DH,CX1CCC>PY5EW 19-2000 LU7FTF,LU5EGY,LW2ETU>PY5EW KP2>W4  
LP8LP,LW3EX>PY5EW LU2MCA>PT9IR 20-2100 LU8EMH>PT9IR LW3EX,LU9HH>PY5EW  
LU6DRV>CE3SAD CE3SAD,PY5EW>LW3EX LU8DIO>PY5EW PT9IR>CX7TT 21-2200  
LU9AEA>CE3SAD PT9IR>LW3EX W0>W0 22-2300 PT9IR>LU9HH,LU1FVE W8>W8 2326  
V44KAI>PY5EW

Dec 24 00-0100 W4>W4 YV4AB>PY5EW W3>VE3 01-0200 V44KAI>PY4AQA K4TQR>W0  
W8,W5>W4(ms) 13-1400 VE1SMU>W8 W4>W3(ms) W5>W8 W8>W4(sc) 14-1500  
W3,W8,W9,W0>W4 W4>W4(Es) W4>W9(Es) 15-1600 W4,W8>W4 K0KP>W5 W5>W3,W4,W8  
W4>W9(Es) W9DR/4>XE3 16-1700 W4>XE3,W9,VE3 VE3,W5,K0KP>W4 W3DOG>W2 W8>W5,W9  
N0LL>W7 17-1800 VE3WCC,K8PLF,VE3UBL,W0>W4 W4,W5>W8 W4,W5>W9 18-1900  
W0>W4,W7,W0 W9,W4>W9 19-2000 W4,W5,W0>W7 W0,W4,W9VW,W8IF>W0 20-2100  
W0,W6>W7 VE4ARM,VE4VHF,VE4APT,K0GUV>W1(Es) W4>W4 21-2200 LU6AEA>CA3SOC  
KG0VL>W1 W9>W9 CE3SAX>LU1DMA 22-1300 CE3SAX>LU6HTR W5GPM>VE2(Es) W0>VE2  
KG0VL>VE3 23-2400 W0>VE2 W3,W8>W0 W3,W0>VE3 W4>W4(Es)

Dec 25 00-0100 VE3,W5,K0KP>W4 W0>VE2,VE3 W5GPM,W0,W2>W3 VE3>W0 W4>W6,W9  
CR5PRD>LU4EFC W5>W3 W0>W6 01-0200 W0>W4,VE3,W9 W5GPM,WB0RMO,N0LL>VE2  
W5>W3,W4,VE3,W7,W0,W9 K8EB,W8GTX>W0 W7>W8,W0 W6>W4,W9 02-0300 W4,W5>W6  
W5>W7,W9,W4 W8>W5 W0>W7,W4(Es) W5,W7>W7 K0KP>W5 K0EC,KA0CDN>W8  
K8EB,WZ8D>W0 03-0400 W5>W6,W0 W8>W5 W7,W5RP>W7 WB0RMO,K0KP,N0LL>W4  
W9JN,VA2FZN>W0 13-1400 48.3(CE)>LW3EX W4>W4 14-1500 W4>VK4(tr) W0>W4(Ms) 15-1600  
W8IF>W4 W7>W6 W0>VE2 W1>W4,W9 W0>VE2(ms),W8 W7>W7 16-1700 W7,VE2,K8EB,W0>W8  
N0LL>W7 W4>W4(tr) 17-1800 W0,W4>W4 21-2200 C6AFP>VE2(Es) 22-2300 W4,W3>VE2  
W1>W4(Es) W4>VE3 W2>W0(ES) W4>W3,W2 W3>W5,W8,W1 W9>VE2 W9DR/4,W2,VE3>W9  
VE4ARM>W1 W0>W1,VE2,W2(Es) XE2>W4 23-2400 W9,W0,W5GPM,W5HN,W4,W8>VE2  
W8IF,W8EH,W9VW,W4>W0 W0>W1,W2,W3,W8,VE3 W4,W2,W3,W1>W9 W5,K0KP>W4  
W6,WB0RMO,K0GUV>W3 LU2WC>CE3RR VE7>W7

Dec 26 00-0100 W4>W0 W1,W4>W9 W5HN,W5RP>W4 W5,W6,W0>W3 W8,W9>W5  
W0>W1,VE3,W8,VE2,W4,W6,W0 WZ8D,KD4AOZ>W0 W5,W6,K0GUV,KA0CDN>W4  
LU1VD>LU6HTR W5>VE2,VE3,W3 W2>W1,W9 W5GPM>W1 W9>W4 W7>W9 01-0200 W3,W8>W5  
W5,W6,WR9L,W8>W4 KD4AOZ,W0>W0 W5,W7>W9 W3,W0>W6 W4>W7 02-0300 W7>W3,W4,W0  
W4>W5,W0,W6,W7 W8,W5>W9 W5RP>W3 WB0RMO>W5,W9 03-0400 W5,W6,W7,W0>W9  
W5>W3,W4,W6,W8 N0LL>W5 W5,W6,W0>W4 W4,W0,W5GPM>W7 04-0500 N0LL,W7,W5RP>W0  
W5>W6,W7,W9 W3,W6>W4 W4>W7,W9 12-1300 C6AFP<W9DR/4>W8 W0>W4(ms) 13-1400  
KP4>W8(ms) W8>W4 W1?W3(tr)14-1500 40.2(CE)>LW3EX N0LL>W4(Es) K4TQR>W1 W5>W8  
W0>W7 W9,W0>W5 LU5EGY>CE3SAD 15-1600 C6AFP>W8 W5>W7,W1,W5,W9 VE3>W8,W4(Es)  
W1>W9 W5>W1(Es) 16-1700 WA4FC,WR9L(Es),W3,VE3>W4 W1,W0,W9>W8 C6AFP>W9,W7  
N0LL>W7 W6>W4,W8 17-1800 W3PIE>W3 W0,W9>W0 W4>W9,W8 1805 W0>W8 19-2000  
W0>W0,W8 20-2100 W4>W3 2256 YV4AB>KE4WBO 23-2400 W4>W8(Es) LU1MPK>CA3SOC  
YV4AB>N3LL/4 W4>W4,W8

Dec 27 00-0100 YV4AB>N3LL/4(Es) PY5>PY3(jt) K0KP>W4 W3>W5 W4>W9,W0 01-0200  
W9DR/4>VE2,W9 WB0RMO,N0LL>VE2 W4>W0 W5GPM,N0LL>W3 W3,VE3,W8>W4 W6>VE2  
W0>W3,W4(Es),VE2,W9,W1,W5 K8EB>W0 W5>W8,W5(psk),W3 VE3UBL>W0 W4>VE4,W9  
W5,N0LL>VE3 02-0300 W5>W3,W9,VE3 W1,W4>W9 W0>W4,VE3,W1,VE2,W8,W9

W8GTX,W9,K0KP,VA2ZFN,W3PIE>W0 VE5,W4,VE4ARM>W4 W6>W1,W8 W4>W3,W8 03-0400  
W0>VE2,W9,W8 W4,W5,VE4 W5>W3,W8,W9 W4>W8,VE4,W4 VE3,W3,W0>W3 04-0500  
W0>W4,W6 KA0CDN,N0LL>W4 W0MTK>W9 W9>W5 W4>W6 11-1200 PP2SIX>LW3EX  
LU5EGY>PU2MJU 12-1300 LW3EX>PU2MJU W4>W4(ES) LU7FTF>PU2MJU W9DR/4>KP4(ms)  
LU5EGY,LW3EX>PY2MAJ 47-49(CE)>LW3EX LW3EWZ,LW6DEX,LU8EMH,CX1CCC>PY2MAJ 13-  
1400 LU7FTF,LU7FHS,LU2MCA>PY2MAJ LU8WAT,PY2YRK>LW3EX W4>KP4,W4 W9DR/4>W8  
W9>W4 PY1>PY2 LU8EMH,PY1WS,PY1RO>PUY2MJU LW2ETU,LW3EWZ>PY2MAJ  
LW3EX,LU8EMH>PY2HT 14-1500 LU7FTF,LU8EMH,LU1DVT,LU8DIO,CX1DDO>CA3SOC  
CA2SOC>LW3EX PP2SIX,PY2HT>LW3EX VE2>VE3 W8>W3 47-49(CE)>LW3EX 15-1600  
LU7YS,CA3SOC,LU5VV,PY2YRK,LU1VD W4>W4(tr) CA3SOC>PY1RO LU7FTF>PY2MAJ  
PY2MAJ>CE3RR CX1CCC,LU5EGY>PY2MAJ 161-1700 LU7YS>PY2MAJ  
LU7FPA,CX1RP>CA3SOC LU5EGY,PY2MAJ>PY2SRL CX8DS>PY2MAJ CA3SOC>CX1RP(tr)  
N0LL>VE2 W0>W3 LU2MCA>LW3EX 17-1800 PY5ZW>LW6DC VE2>W4 VE3>VE3  
CX1DDO>PY2MAJ,PY2SRL 20-2100 WR9L>W9 W4>W4(tr) 21-2200 K0KP>VE3(ES)  
WZ8D>VE2(ms) W2>W3 22-2300 WZ8D>W3 KD4AOZ>VE2 23-2400 W4>W4

Dec 28 00-0100 W9>W0(gw) W0>VE4(ES) VA2ZFN>VE2 WE9L>VE2(ms) 12-1300 W4>W3(ms)  
W4>W4(tr) 13-1400 W4>W4 1459 W3>W4 15-1600 W4>W5(tr) W4>W4(tr) 1648 W3>VE3 1910  
W0>W0 21-2200 LU5EGY>PY5EW 22-2300 LU7FTF,LU7HA,LU2MCA,LU4ML,LU1MPK>PY5EW

Dec 29 00-0100 V44KAI,YV4AB>PY5EW W4>W4 YV5IAL>PY5EW 01-0200 W8,W4>W4  
N0LL>W7(ES) 0231 W4>W4 18-1900 V44KAI,FY7THF,TI2NA,KP4,C6AFP>KE4WBO  
FY7THF>WA2SEI/4 1925 YV4AB>KE4WBO 23-2400 V44KAI,9Z4FZ>PY5EW

Dec 30 00-0100 W3>W3 0310 W0>W4 12-1300 LU7FTF,LU7HCS,CX1CCC,LU5EGY>PY2MAJ 13-  
1400 W4>W4 LU5EGY,LU7FTF>PY2SRB W4>W4 14-1500 CX1CCC,LU8DIO,LW2ETU>CE3SAD  
WZ8D>W4 1556 W3>W0 1624 W1>W1 1756 W4>W8(jt) 1805 W5>W8 19-2000  
KP4EIT,C6AFP>KE4WBO 20-2100 CX3DAC,LU5EGY>CE3SAD LU1DMA>CA3SOC 21-2200  
LU5CAB,LU7JTW>CE3SAD LU2MCA,CE3SAD>LW3EX 22-2300  
LU7HCS,LU7FA,LU7FTF(ES)>CE3SAD K8LEE>W0 23-2400 CE2/K4UNM>LW3EX LU3HR>CE3SAD  
CE3SAD>LU6HTR

Dec 31 00-0100 CE3RR,CE4WJK>LU6HTR LU7FTF>CE3SAD aurora 0332 W4>W4 0516 W3>W3  
1259 W9DR/4>W4(ms) 1311 W8>W4(ms) 1456 K8LEE>W0 1501 C6AFP KE4WBO 16-1700 W8>W9  
K0KP>W7(tr) 21-2200 K4TQR>VE2 22-2300 LU2WC>CE3SAD LU2WC>LW2EQS,CE3RY 23-2400  
FM/F5IRO>W5ZF W5GPM,W4,W0>W1 K4TQR>VE2 N0LL>W7 K4MHZ>W9 W0>VE3

## Japan, Australia and the Pacific

### Japan/Asia

A very quiet month!

Dec 17 0550 46171.7(QG53)>JA7 45250(ZL)>DU7

Dec 22 0557 45250(ZL)>DU7

Dec 24 0354 45250(ZL)>JA1

Dec 26 0747 49749.9>JA7

Dec 29 0540 55250>JA7

## Australia/Pacific

Not all that long ago we heard little or nothing about 50MHz activity in Australia, New Zealand and thereabouts. Things are very different now. Activity seems to have increased substantially and/or the VKs and ZLs more readily post 'spots' to the admirable VK Logger page, which carried in excess of 2000 spots in the course of the month. Also, of course, this was the height of their sporadic-E season. The result is the most substantial chronicle of contacts to date from down under. Reports relating to TV transmissions above 50MHz are included in the listings below but reports of TV reception on frequencies below 50MHz within the VK/ZL area are not included.

The great majority of contacts summarized appear to be attributable to single hop Es and call for no particular comment, though it is worth noting the appearance, at long last, of FK8s on a couple of days, in addition to the regular loggings of the FK8SIX beacon. Note also reports of 3D2ER and T31DX. More interesting in terms of propagation is the number of contacts at well over single-hop Es range. The greatest reported distances were for 9V1UV (range?), the Guam beacon over 5000 km, DU7/PA0HIP at around 5000k, A35RK ~4000km, P29NB at up to 3498km and KH8 television (up to 4400km). Some of these, as with reports of Asian television may have involved mixed modes. Impressionistically, reports exceeding 2300 km seem more numerous than one would expect to find in a European Es season. The fact that a number relate to relatively high-power broadcasters may have something to do with it, but there are plenty of reports relating to typical amateur power levels. For discussions of why Es distances are relatively few between 2400 and 2800km (though you'll find a few below) papers by Emil Pocock, W3EP ([www.uksmg.org/content/doughnut.htm](http://www.uksmg.org/content/doughnut.htm)) and Todd Emslie on the preferred ranges for Es at 50MHz ([www.geocities.com/toddemslie/Es\\_distances.html](http://www.geocities.com/toddemslie/Es_distances.html)).

Incidentally, note to what good use the VKs and ZLs put their beacons

Dec 1 00-0100 VK5RBV>VK4 VK3>VK4 VK7RAE>VK2 57250(PF96)>VK6 VK6RPH,VK4>VK5 01-0200 VK5,VK7RST>VK4 VK6>VK5 VK6RSX>VK6 0228 VK7RST>VK2 0336 VK6RSX>VK6 04-0500 VK8RAS>VK3 95-0600 VK5>VK3 VK8RAS>VK5 VK5RBV>VK4 06-0700 57260(QF23)>VK6(2649km) 51760(QF58)>VK5 57250(PF96)>VK6 VK4RTL,VK2RHV>VK5 51672(QF53)>VK7,VK5 VK8RAS>VK5,VK6 VK4RGG>VK7 VK4RTL>ZL3(3597km) VK3>VK4 07-0800 VK4RGG>VK5 VK8RAS>VK6,VK5 08-0900 VK4>VK7,VK5,VK2,VK3 VK2RHV>ZL4 0915 VK4>VK7 10-1100 50740(RF72)>VK4 21-2200 VK4,VK3 22-2300 VK3>VK4 VK3RMV>VK4 FK8SIX>VK2VK5 (3022km),VK3(2897km) VK5RBV,VK7RAE>VK4 VK4>VK2 23-2400 VK4,VK2>VK3 VK7RAE>VK4

Dec 2 00-0100 VK2>VK5 VK4RTL,VK8RAS>VK3 VK4RGG>VK2 01-0200 VK4RGG>VK7 FK8SIX>VK4 0302 51740(QF35)>VK4 05-0600 ZL1>ZL4 VK7RAE>VK4 ZL2MHF>VK5(3250km) 55250(RE79)>VK3(2567km) ZL2MHF>VK3(2572km) 55250(RE79)>VK5(3242km) 55250(RE79)>VK3(2850km) 06-0700 VK4>VK4 VK4RTL>VK5 VK4RGG>VK5 55260.4(RE54)>VK3 VK5,FK8SIX>VK4 VK4>ZL3,VK2,VK1,VK3 VK4RTL>ZL3 07-0800 VK4>VK1,VK5,VK3,VK7 VK4RTL>VK1,VK5 VK2RSY>VK4 08-0900 VK3>ZL4 VK4>ZL3 ZL3SIX>VK3 09-1000 FK8SIX>VK4 20-2100 FK8SIX>ZL2,VK2 VK2RHV>ZL2 21-2200 FK8SIX>VK2 VK4RTL>ZL2 51740(QF35)>ZL3 FK8SIX>VK2 VK2RHV>ZL3 VK4>VK1,VK2,VK5 22-2300 VK4>VK2,VK5

Dec 3 00-0100 VK4>VK3,VK5 VK2>VK5,VK4 VK7RAE>VK4 01-0200 VK4>VK3 VK7RAE>VK2 VK7>VK4 VK8RAS>VK6 VK2RHV>VK3(sc./Es) 02-0300 VK3,VK7>VK4 VK2RHV,VK5>VK3 VK2>VK5 519150(QG53)>VK3 52100(QF57)>VK5 51740(QF35)>ZL3 03-0400 VK5>VK3 VK2>VK5 51670(QG53)>VK3 VK8RAS>VK5 04-0500 VK8RAS>VK5 51760(QF58)>VK5 51672(QG53)>VK5 VK7RAE,VK2RHV>VK5 VK5RBV>VK2 FK8SIX>ZL2 06-0700 51670(QG53),VK2RHV>ZL2 0758 ZL3SIX>VK4(3289km) 08-0900 VK7RAE>VK5 ZL2MHF>VK4(3304km) VK1,VK7RAE>VK4 VK3>VK1,VK2 ZL2MHF>VK5(3250km) 09-1000 VK2>VK4 VK4RTL>VK1 10-1100 VK4>VK8

VK4RTL>VK2 1941 FK8SIX,VK2RHV>ZL2 21-2200 VK4RTL>VK2,VK4 VK5RBV>VK4  
50750(ZL)>VK3 VK4>VK3,VK2,VK1 22-2300 VK3>VK4 VK4>VK5

Dec 4 00-0100 VK7RAE,VK3RMV>VK4 VK2>VK3 VK4RGG>VK3 VK4,VK5 VK7>VK2  
62240(QG62),69740(QG62)>VK3 52005(QF58)>VK3 01-0200 VK2RSY,VK4RGG,FK8SIX>VK3  
FK8SIX>VK5 02-0300 VK2,VK8VF,VK3>VK5 VK8RAS>VK8,VK1,VK5 VK5>VK1 VK7RAE>VK5 03-  
0400 VK8,VK5>VK7 FK8SIX>VK2 VK6RPH>VK5 VK8RAS>VK3 55250(AH45)>VK2(4408km) 0555  
55250.1(RE79)>VK3(2850km) 0612 FK8SIX>VK2

Dec 5 00-0100 VK6RSX>VK5(2659km) VK8RAS,VK4>VK3 VK8RAS>VK6 48255.5(9M)>VK3  
VK8VF>VK5 VK8>VK2 57260(QF23)>VK6(2783km) VK8>VK3(3003km),VK2(2786km)  
VK6RSX>VK4(3209km) VK7RST>VK4 VK8>VK3(3017km) VK3>VK4 01-0200 VK7RAE>VK2,VK4  
VK4RGG>VK3 51672(QG53)>VK3 VK8RAS>VK6 VK3>VK2 VK6RPH,VK6RBU,VK2>VK5 VK6>VK8  
VK2RHV>ZL3 02-0300 VK4>VK3 59750(AH45)>VK2(4408km) VK3>VK4 VK5>VK2  
FK8SIX>VK5(3059km)

Dec 6 00-0100 VK4RTL>VK5,VK3 VK4>VK1,VK3,VK2 AH2G(QK23)>VK2APG(5354km)  
FK8SIX>VK4,ZL4 VK8RAS>VK5,VK3 AH2G(QK23)>VK4BEG(3403km)  
P29NB>ZL4,VK2,VK3,ZL3,VK4(to 4860km) AH2G>VK2(5274km) 01-0200 VK4>VK3 ZL4>ZL3  
VK4RTL>VK3,VK5 P29NB>VK3(3498km) FK8SIX>VK7(2899km) VK2RHV,VK4RGG>VK7  
VK8RAS>VK5 VK4>ZL3 VK2>VK7 VK4ABP>VK5 0608 ZL3SIX>VK4 23-2400 3D2ER>ZL3JT

Dec 7 00-0100 VK8,ZL1,VK4,ZL2(3032km)>VK3 57260>VK6(2649km) VK2,VK3>VK5  
VK8RAS>VK2,ZL3(4008km) VK5>VK4 ZL2>VK5(3124km) VK2RSY>VK7 01-0200  
VK4RTL,VK5>VK3 VK8RAS>VK2,VK7,VK3 VK4RTL,VK7>VK2 VK3>ZL2 VK2>ZL3 VK8RAS>  
ZL3(4151) VK7>VK1,VK2 VK7RAE>ZL3 VK5>VK4 02-0300 VK5,VK8RAS>VK4 VK2>VK5 03-0400  
VK6RSX>VK6 VK8RAS>VK3,VK5 VK4RTL>VK5 04-0500 VK4RTL,VK8RAS,VK4ABP>VK5 05-0600  
VK4RTL>VK5 0757 VK2>VK5 08-0900 VK7RST,VK4RTL>VK5 ZL3,VK8RAS>VK2  
ZL2>VK5(3259km) VK5RBV>ZL2(3158km) VK4ABP,VK4RGG>VK5 09-1000 VK2RSY,VK2RHV>VK5  
FK8SIX>VK2,VK5 VK5RBV>VK2 VK4RTL>VK3 VK6RSX>VK2(3636km) VK1>VK4  
VK8RAS>VK2,VK5,VK7 VK6RBU>VK5 VK4>VK3 (day record incomplete)

Dec 8 00-0100 VK5>VK1 51670(QG53)>ZL2 VK6RPH>VK5 01-0200 VK7RAE,VK5>VK2  
VK8RAS>VK3 VK7RST,VK7RAE>VK4 VK5>ZL2(3013km) VK5RBV>VK6 VK6RBU,VK7RAE>VK5  
VK3>VK2 VK7RAE,VK7RST>VK4 02-0300 VK2RHV>VK4,ZL2 VK2RSY>VK3 VK7>VK4  
ZL3SIX>VK4(3289km) 03-0400 ZL2MHF>VK4(3029km) VK>VK3 50739(QF43)>VK2  
VK4>ZL3(3009km) VK2>ZL2 VK3RMV>VK1 VK5RBV>ZL2(3159km) VK2RSY>ZL3  
50740(RF72)>VK3 VK7>VK2 04-0500 T31DX>VK3OT,VK3SIX 05-0600 VK1>VK4 06-0700  
VK7RAE>VK4 VK4RGG>VK1,VK5,VK7 VK7RST>VK4 VK1>VK5 FK8SIX>ZL2,VK5(3075km) 07-  
0800 FK8SIX>VK5(3059km) VK7>VK4 VK2,VK3>VK5 VK3,VK2RHV,VK2RSY>VK4  
ZL3SIX>VK4(3174km) VK4>VK2,VK5,VK7 ZL3SIX>VK4 3D2ER>VK4 08-0900 VK2RHV>ZL2  
VK4RTL>VK1 51739.6(QF35)>VK4 VK3RMV,VK7RAE,VK1>VK4 VK4RTL>VK2 VK4>VK2 21-2200  
FK8SIX>VK4,VK5(3059km) VK4RGG>ZL3,VK5 VK4RGG>ZL3(3597km)

Dec 9 00-0100 VK6RPH>VK5 VK7RST>VK4 VK2>ZL2 01-0200 VK6RPH>VK5 02-0300  
VK7RST>VK2 VK6>VK5,VK2 FK8SIX>VK2 VK5RBV>ZL3(3049km) VK2RHV,VK6>VK5 03-0400  
FK8SIX>VK2 VK2TSY>VK5 VK5RBV>VK3 1034 51672(QG53)>VK2 22-2300 VK8RAS>VK5

Dec 10 01-0200 VK6>VK5 57260(QF23)>VK6 57250(PF96)>VK6 VK6RPH>VK5 02-0300 VK6>VK5  
ZL1>ZL3 03-0400 VK3>VK3 0717 VK2RHV>ZL2 0817 VK2>ZL2 1047-8 51740(QF35),VK2RHV>ZL2  
20-2100 FK8SIX>ZL2 VK2RHV,VK2RSY>ZL3 ZL3SIX>VK2 21-2200 VK2>ZL3 VK3>VK5  
VK2RHV>ZL2 VK2>ZL3 VK3>VK5 ZL3SIX>VK4 (3008km) 22-2300 FK8SIX>VK2 VK5>VK3  
ZL2,ZL1,ZL3>VK4 23-2400 ZL3MHF>VK4 ZL2>VK2 VK4>VK5 51670(QG53),VK4RGG>ZL2

Dec 11 00-0100 VK2>VK5 VK2>ZL2 ZL1>VK2 VK5RBV,ZL2MHF>VK4 01-0200 VK2RHV>VK3 ZL3,ZL2>VK2 02-0300 ZL1>VK5 ZL3,ZL4>VK2 ZL4>VK4 03-0400 ZL3>VK2 VK7RAE,VK7RST,VK2RHV,VK2RSY,VK3RMVVK5RBV>ZL3 ZL3SIX>VK3 04-0500 ZL3SIX>VK5 0517 ZL3SIX>VK7 07-0800 VK4RGG>VK1 08-0900 VK3>ZL4 09-1000 VK2RHV>ZL2 50740(RF72)>VK3 2343 51740(QF35)>ZL3

Dec 12 00-0100 VK6RSX>VK6 01-0200 VK2RSY>VK4 0402 FK8SIX>VK4 05-0600 FK8SIX>VK2,VK4.VK5 FK1TK>VK4CY,VK4BKP,VK4AHW VK1>VK3 07-0800 VK8RAS>VK3 VK4RGG>VK3,VK5,VK1 VK2RSY,VK5RBV>VK4 VK4>VK7 08-0900 VK4>VK1,VK2 FK8SIX>VK5,ZL2, VK4 VK8RAS>VK7 VK7RAE>VK4 VK2RSY>VK3 VK5RBV>VK2 VK4RTL>VK7 VK4ABP>VK5 09-1000 VK8RAS>VK4,VK3 VK4RTL>VK2,ZL2TPY(3426km) VK3RMV>VK2 VK4RGG>VK3 VK2>ZL2 VK4>VK5 VK2,VK4>VK7 10-1100 VK3FGN>VK2 VK3>VK4 17-1800 FK8SIX>ZL2,VK2 18-1900 VK4RTL>ZL2 FK8SIX>VK4 19-2000 50740(RF72)>VK4 VK4>VK5 20-2100 VK2RHV,VK3RMV>VK4 VK7RAE,FK8SIX>VK2 2126 FK8HA>VK2FAD 2340 VK4RTL,VK4DD>FK8GX

Dec 13 00-0100 FK1TK>VK4 FK8GX>VK3XQ FK8SIX>VK4 VK4>VK2,VK3 VK2RHV,VK4RGG,VK2RSY>VK7 01-0200 VK5RBV,VK8RAS,VK5VF,VK7RAE>VK4 VK4RTL>ZL3(3597km) VK4>ZL3(3872km) VK2>VK7,VK5 02-0300 VK2>ZL3 VK4RTL,FK8SIX>VK4 03-0400 VK4RGG,VK2>VK3 VK1>VK5 VK8>VK4 FK8SIX>ZL2 20-2100 FK8SIX>VK4 21-2200 FK8SIX>ZL2,VK4 VK4RTL>VK5,VK1,VK3,VK1 VK4,VK8RAS>VK2 22-2300 VK4>VK4,VK2,VK1 VK8RAS>VK2 VK6RSX>VK6 FK8HA>VK4CZ FK8SIX,VK6RPH>VK5 23-2400 VK4RGG,VK6RBU,VK6RPH>VK5 57250(PF96)>VK6 VK4RTL>VK3 VK2RHV>ZL3 FK8SIX>VK3(2897km),VK4 VK6RBU>VK4 VK5VF>VK6 P29NB>VK3OT VK5RBV>VK6

Dec 14 00-0100 VK4>VK5 VK8RAS>VK2 P29NB>VK3OT(3498km),VK4ABW,VK5BC(3291km),VK5ACY(3271km) FK8SIX>VK5(3059km) VK8RAS>VK3 VK4RTL>ZL2(3426km) 01-0200 P29NB>VK5ZK(3311km) VK4DD,VK4SIX,VK3OE(3494km),VK5LA(3146km),VK3DUT(3491km),VK3YFL(3484km) VK5RBV>VK6 VK4RTL,VK4RGG>VK5 02-0300 VK4RGG,VK4RTL,VK4ABP,VK8RAS>VK5 VK8RAS,VK4RTL,VK8VF(3017km)>VK3 P29NB>VK8MS,VK8RR,VK3OT(3498km),VK1JST(3210km),VK3TG(3429km) VK8>VK7(3703km),VK3(3003km),VK2(2947km),VK1(3110km),VK2(3172km) VK8>VK3(3017km) 03-0400 VK8RAS>VK3 49749.7(PM35)>VK3(9341km) 49750(PN23)>VK3(9159km) VK4ABW>P29NB VK4ABW,VK5VF,VK5RBV>VK6 VK8VF>VK3(3017km) 48239(9M OJ22)>VK4ABW VK8RAS,VK4RTL>VK3 04-0500 VK5RBV>VK6 VK4RTL>VK5 57260(QF23)>VK6(2649km) VK8RAS>VK7 VK6>VK1(3089km) 05-0600 VK2,VK5>VK6 VK8VF,VK8RAS,VK4ABP,VK6RPH>VK5 DU7/PA0HIP>VK4MA(5088km),VK4BEG(3897km),VK8VTX(2640km) VK8RAS>VK7 06-0700 VK5ZK(5306km),VK5PJ(5216km),VK3OT(5642km),VK8MS(2640km)>DU7/PA0HIP VK8>VK3(3003km),VK5 VK4RTL,VK8RAS>VK3 VK6>VK3(2979km) VK4>VK8 0800 55248.8(DU)>VK3 55247.7(DU)>VK3 49749.9(R1)>VK3

Dec 15 00-0100 VK8RAS,VK4RTL>VK3 VK4>ZL4(3613km) VK6RPH>VK5 VK2>ZL1,ZL4 FK8SIX>VK4 VK2RHV,VK4RGG,FK8SIX>A35RK 01-0200 0127 A35RK>VK4QB,VK4CP,VK4MA,VK2ZT,VK4ZO VK2RHV>A35RK(3679km) VK6>VK5 FK8SIX.VK2FA>A35RK VK8RAS>VK4 57250(PF96)>VK6 02-0300 FK8SIX>VK3 VK6>VK5 03-0400 VK2RHV>A35RK VK6RST>VK5 04-0500 VK6>VK5 ZL2MHF>VK2 05-0600 VK2RHV>ZL2 08-0900 51740(QF35)>ZL2 0918 VK2RHV>ZL3 2112 51672(QG53)>VK3 VK3>VK5 FK8SIX>VK1 22-2300 VK4RTL>VK1,VK3 FK8SIX>VK4 VK8RAS>VK3 VK5RBV,VK2RHV,VK5VF,VK3RMV>VK4 23-2400 VK4RTL>A35RK(4069km) VK2>VK4 VK4RTL>VK3,VK5 VK4>VK3 A35RK>VK4BEG(4224km)

Dec 16 00-0100 VK4>VK5 VK8RAS>VK2,VK4 VK5>VK4 VK4RTL>VK3 FK1TK>VK4AHW  
FK8SIX>A35RK 01-0200 VK8,FK8SIX>VK4 VK4>VK5,VK3 VK8RAS>VK4 02-0300 VK4RTL>VK2  
0427 VK4>VK4 0721 VK4RTL>VK1 08-0900 48239(9M OJ22)>VK4(5238km) 46170(OJ03)>ZL2  
VK4>VK2 21-2200 FK8SIX>VK4 22-2300 FK8SIX>VK4 23-2400 VK4>VK4 FK8SIX,VK5RBV>VK4

Dec 17 00-0100 VK8RAS>VK4 FK8SIX>VK2,VK4 VK2RHV,VK5RBV>VK4,VK7RAE VK4RTL>VK3  
VK2RHV>A35RK 01-0200 VK2RHV>A35RK(3680km),VK3 VK4RTL>VK3 FK8SIX>VK2,VK3  
VK5,VK6RBU(3546km),VK3RMV,VK6RPH(3583km)>VK4 02-0300 VK4RGG>A35RK(3399km)  
VK4,VK8RAS,VK5>VK3 VK2RHV>A35RK(3679km) 51915(QG53)>VK3 57250(PF96)  
FK8SIX>VK5(3078km) 03-0400 VK8RAS,VK6>VK3 VK5VF,VK5RBV>VK6 FK8SIX,A35RK,VK2>VK5  
A35RK>VK3(4646km) 04-0500 FK8SIX>A35RK,VK4ZO,VK3AUU(4369km) 06-0700 FK8SIX>VK4  
VK2RHV>ZL2 07-0800 FK8SIX>VK7(2791km) 10-1100 VK8RAS>VK4 FK8SIX>A35RK 21-2200  
VK4RGG(3400km)>A35RK 22-2300 FK8SIX>A35RK 50740(RF72)>A35 23-2400 VK4RTL>VK2  
VK4RTL,(4068km),VK2RHV(3679km)ZL1AMO>A35RK VK3>VK4

Dec 18 00-0100 A35RK>VK4AHW(3412km) VK8RAS>VK3,VK5 VK4RTL>VK5,VK1,VK3  
FK8SIX>A35RK 01-0200 VK3RMV>VK4 VK6RPH>VK5 FK8SIX>A35RK VK8RAS>VK6  
VK5RBV>VK4 A35RK>VK3AUU(4333km) 02-0300 VK5RBV,VK5VF>VK6 VK2>VK6 03-0400  
A35RK>FK8SIX VK8RAS>VK5 04-0500 VK6>VK3,VK5 06-0700 VK4RTL>VK2 07-0800 FK8SIX>VK4  
VK4>VK2,VK4 08-0900 VK4>VK2,VK4 09-1000 VK4RTL>VK4 1215 FK8SIX,VK4RTL>VK4 1424  
VK6RSX>VK6 20-2100 FK8SIX,VK4RTL>ZL2 2149 FK8SIX>VK4

Dec 19 00-0100 VK2RHV,ZL3SIX>ZL2 55250(AH45)>ZL3(3611km) ZL3SIX>VK4(3560km)  
55250(AH45)>ZL2(3089km) ZL3SIX>VK4(3562km) ZL2MHF>VK4(3590km) ZL2>ZL3 VK5RBV>VK6  
57250(PF96)>VK6 VK4RTL>ZL2(3426km),ZL3(3603km) 01-0200 FK8SIX>VK4,ZL2  
59750(AH45)>ZL3(3611km) VK6RPH,VK6RBU>VK5 VK5VF>VK6 02-0300 51670(QG53),VK4>VK5  
VK5RBV>VK6 VK4RTL>VK3 FK8SIX>VK5 03-0400 VK8RAS,VK5RBV>VK6 VK2RHV,VK4RGG>ZL2  
0924 9V1UV>VK4ABW 2157 VK7>ZL4

Dec 20 00-0100 VK2>ZL2 50750(RF73)>VK3(2648km) VK4RGG>VK7 01-0200 VK2RHV>ZL3 02-  
0300 VK4RGG>VK7 55250(AH45)>ZL3(3611km) FK8SIX>VK4 ZL3SIX>A35RK(2914km)  
A35RK>ZL4(3216km),ZL2 FK8SIX>A35RK 03-0400 FK8SIX,A35RK>ZL2 ZL1>A35RK ZL3>ZL4(bs)  
ZL4>A35RK(3266km) 04-0500 FK8SIX>A35RK,ZL2 ZL1>ZL3 05-0600 49751(OM34)>VK4(8361km)  
06-0700 ZL1>ZL3 ZL3SIX>VK3 VK7RAE>ZL3 10-1100 52345(QG26),VK2RSY>VK7 11-1200  
VK7RST>VK2 ZL3SIX>VK7 50740(RF72)>A35RK 1955 55250(AH45)>ZL3(3611km)20-2100  
ZL4>VK3 ZL3SIX>A35RK(2914km),VK3 50740(RF72)>A35EK 21-2200 50740(RF72)>VK7  
FK8SIX>VK2,VK3 ZL3>VK7 51740(QF35)>ZL2 VK2,VK3,ZL3,VK4RTL>VK4 50750(RE43)>VK4  
VK4>VK3,VK2,VK7 VK2>ZL4 VK7>ZL2 22-2300 VK4RGG,VK4RTL>VK5  
FK8SIX,VK2,VK1,VK3,VK5RBV>VK4 ZL3>VK7 ZL3>VK3(2680km)

Dec 21 00-0100 VK6RSX>VK3(3489km) ZL2MHF>VK5(3254km) VK3>ZL3(2680km) VK5RBV>VK7  
VK4RGG>A35RK(3399km),VK3 VK3,VK7,VK8RAS>VK5 FK8SIX>A35RK,ZL2 VK7RST>VK2,VK5  
VK5RBV>ZL2(3159km),VK2 V K7RAE,ZL3>VK5 VK7>VK2,VK1 FK8SIX,VK5(4876km)>A35RK  
VK5RBV(4854km)VK2RHV(3679km)>A35RK VK2>VK6,VK5 VK6RSX>ZL3(5597km),  
VK3(3088km),VK2(3697km) VK5>ZL2(3144km) 57250(PF96)>VK6 01-0200 50740(RF72)>A35RK  
VK7>VK2 VK3,VK7,VK2>VK5 VK5>ZL3(3013km),(3062km) VK4RTL>A35RK(4069km)  
ZL3>VK5(2894km) FK8SIX>A35RK VK4RGG>A35RK(3399km) A35RK>VK4(3440) VK8>VK4  
FK8SIX>A35RK(3667km) 02-0300 VK7RAE>VK6(2905km) VK6RPH>ZL3(4939km)  
ZL3>VK3(2676km) VK6RSX>VK3(3078km),VK7AB(3748km) VK6>VK7(2952km) VK2>VK2 VK3>VK3  
FK8SIX>ZL1 03-0400 VK6RSX>VK7(3665km),VK4(3760km),VK3(3088km) VK5>VK7 04-0500  
VK4RTL>VK5 VK4RTL>VK6(3392km) remainder of day not available



Dec 22 00-0100 ZL3>VK5(3018km),VK5(2999km) VK3>VK4 ZL3SIX>VK3 VK2>VK7 VK8VF>VK4 VK8RAS,VK4RTL,VK8VF(3017km),VK6RSX(3087km),VK1>VK3 VK8VF>VK4 01-0200 VK1,VK4.VK8RAS,ZL3>VK3 VK8VF,VK2>VK4 55250(AH45)>A35RK VK3>VK2 02-0300 VK8RAS>VK2 VK5RBV>VK6 FK8SIX>A35RK VK6>VK3 VK4ABP>VK5 50740(RF72), VK2 (3800km),ZL1,FK8SIX,VK3(4646km)>A35RK VK1>VK4 55250.7(AH45)>VK3(5322km) 03-0400 ZL3SIX>VK3(2629km) VK8RAS,VK4>VK3 FK8SIX,VK3RMH>A35RK A35RK>VK3(4646km),VK3(4359km),VK3(4160km),VK3(4359km) VK7>VK2 VK3>VK4 04-0500 VK8RAS,VK5RBV>VK3 A35RK>VK3(4646km) 05-0600 VK8RAS>VK3 FK8SIX>A35RK 50740((RF72)>A35RK 07-0800 VK7RST,VK7RAE>VK4 08-0900 VK4>VK7 50750(RE78)>VK3 55250(RE79)>VK3(2850km) ZL2MHF>VK3(2853km) 22-2300 VK5RBV,VK3RMH,VK3RMV>VK4 VK4>VK3 23-2400 VK7RAE,VK3>VK4 FK8SIX>VK2 VK4RTL>VK5

Dec 23 00-0100 FK8SIX>VK5(3021km) VK4RTL>VK3 01-0200 VK5RBV>VK3,VK6 VK5VF>VK6 VK7RST,VK7RAE>VK4 VK4>VK3,VK5 02-0300 VK4>VK5,VK3 VK4>ZL3(3569km) VK7,VK1,VK2>VK4 ZL3SIX>A35RK(2914km) 03-0400 VK3,VK7,VK2,VK1,VK5>VK4 ZL3>A35RK(2885km) 50740(RF72)>A35RK FK8SIX>VK3,VK5 0405 A35RK>VK3OT\_0452 FK8SIX>VK4 1958 A35RK>VK3OT 2000 55250(KH8)>VK3

Dec 24 0000 VK7RST>VK2 VK5RBV>VK1 VK2>VK5,VK3 VK1>VK7 VK7RAE>ZL3 FK8SIX>VK2,VK3,VK7 51672(QG53)>VK7 01-0200 VK2>ZL3 FK8SIX>ZL2 VK3RMV,VK3RMH>VK1 VK5RBV>VK2 VK1>VK7 VK7RST,VK7RAE,VK5VF>VK2 VK2>VK6 FK8SIX>ZL2 55239.6(RF73)>VK4 50740(RF72)>VK4 03-0400 VK2>VK4 FK8SIX>ZL2 VK6RBU,VK4RGG>VK5 04-0500 VK4RTL>VK2 FK8SIX>A35RK ZL3SIX>A35RK(2914km) VK6RPH>VK5 05-0600 FK8SIX>ZL2 51672(QG53)>VK6(3507km) VK8RAS>VK3 VK5RBV>VK6 VK4RGG>VK5

Dec 25 00-0100 VK4RTL>VK7(2435km) FK8SIX>A35RK,VK2SIX,VK2RHV>VK7 01-0200 VK2>VK7 VK7>VK4 51740(QF35),VK4RGG>VK5 02-0300 VK7>VK4 0457 51950(QG53)>VK7 05-0600 VK2RHV,VK5,VK4RGG,51740(QF35),ZL3SIX,VK8RAS(4151km)>ZL2 VK2>VK7 FK8SIX,ZL2MHF>VK2 FK8SIX>ZL2 VK7RST>VK4 VK5RBV>VK6 06-0700 VK5RBV>ZL2(3159km) FK8SIX>VK3(2659km) 07-0800 ZL4>VK4(2551km) ZL2>VK5(3376km),VK4(3330km) ZL3SIX>VK4(3288km) ZL2MHF>VK5(3227km) 08-0900 VK1>VK3(480km) VK3RMH,VK7RAE>VK4 VK5RBV>VK1,ZL2 VK4RGG>VK1 VK7RST>VK5,VK4 19-2000 VK4RTL>VK3 FK8SIX>A35RK 20-2100 VK5RBV>VK3(444km) FK8SIX,VK4RGG(3399km)>A35RK FK8SIX>VK1 51672(QG53)>A35RK A35RK>VK4 22-2300 A35RK>VK7,VK4 FK8SIX>VK3 FK8SIX>A35RK,VK3(2897km) VK2RHV(3680km),VK7RAE(4402km)>A35RK VK5RBV>A35RK(4855km) VK2,VK5>VK4 VK2>ZL4 VK4>VK3 later data not available

Dec 26 00-0100 VK3>VK2 FK8SIX,VK7,VK5RBV>VK4 VK4>VK3,VK6,VK2 VK5RBV,FK8SIX(2899km),VK4RTL>VK7 VK2RHV,VK2>A35RK(3679km),(3670km) VK4ABP,ZL1>VK5 FK8SIX>VK4,VK5(3055km) VK8RAS>VK3,VK5 01-0200 VK4RGG,VK6>VK3 VK3RMV,VK5,VK4>VK2 57160(QF23)>VK6(2649km) VK8RAS>VK5,VK7,VK1 VK4RGG>VK6(3636km) VK3>VK2(758km) VK4RGG>A35RK(3400km) VK4>A35RK(3417km) VK3>VK2(622km) VK4>VK7,VK5 VK7RAE,VK5>VK5 VK2RHV,FK8SIX>VK4 02-0300 VK4,VK1>A35RK VK4RTL>VK2 A35RK>VK4(3434km) VK4>VK2(896km) FK8SIX>A35RK VK2>VK4(728,776km) VK3>VK4 FK8SIX>A35RK 03-0400 VK5RBV>A35RK(4854km) VK4>VK3,VK2 A35RK>VK4(3430km) VK5VF>VK6,VK2 VK5RBV>VK2 FK8SIX>A35RK VK5RBV>VK6,A35RK(4855km) later data not available

Dec 27 00-0100 VK4RTL>VK5 VK5>VK6,VK8 01-0200 VK7RST,VK7RAE>VK4 VK5RBV>VK2 VK8RAS>VK3 57260(QF23)>VK6(2649km) 57250(PF96)>VK6 02-0300 VK6RBU>VK2(3255km) VK2>VK6(3364km) VK6RSX>VK5(2793km) VK6>VK2(3324km) VK8RAS>VK4 50740(RF72)>A35RK 03-0400 VK6>VK2(3385km) 55250(RE79)>A35RK(2453km) VK5VF>VK6 04-0500 VK6>VK5 05-0600 FK8SIX>A35RK 06-0700 FK8SIX>A35RK 08-0900 VK7>ZL3 VK4>ZL3(3858km) VK6>ZL3(5049km)

FK8SIX>VK2 VK6>VK5,VK3(2747km) VK3>VK6(2747km) 09-1000 FK8SIX>VK4 2155  
 50740(RF72)>A35RK 22-2300 ZL3>A35RK(2904km) ZL4>ZL3,A35RK(3193km)  
 ZL3SIX>A35RK(2914km) VK7RST>A35RK(4398km) VK2RHV,A35RK>ZL2 50760(RF64)>VK4  
 50740(RF64)>VK4(2413km) A35RK>VK7(4410km) ZL3>A35RK>2904km) VK4RGG>ZL2 23-2400  
 ZL2MHF>VK4(2545km) VK6RSX>ZL3(5726km) VK4RTL>VK5 ZL2>VK4(2365km)  
 VK8RAS>ZL2(4151km) VK2RHV>ZL2

Dec 28 00-0100 VK4RTL>VK3 VK8RAS>VK3,VK5 ZL2>VK2 01-0200 ZL1>VK2,VK3,VK5(3223km)  
 VK2RHV>VK7 VK7RAE>VK5 50740(RF72)>A35RK VK4ABP>VK2,VK3(2917km) VK5VF>VK7 02-  
 0300 VK7RAE>A35RK(4402km) VJ6>VK5 50740(RF72)>A35RK ZL3>A35RK(2885km) VK5>VK7  
 ZL3>A35RK(2885km) VK7>A35RK(4410km) VK2RHV>ZL2 51740(QF35)>ZL2(2383km) ZL1>A35RK  
 51670(QG53)>ZL2(2496km) VK4RGG>ZL2 03-0400 50740(RF72)>A35RK ZL3SIX>A35RK(2914km)  
 VK7RAE>A35RK(4403km) 49750(China)>ZL2 04-0500 VK4RTL>ZL2(3426km) VK7>VK3(379km)  
 FK8SIX>VK4 05-0600 VJ5VF>VK6 VK2RHV,VK4RTL(3426km)>ZL2 FK8SIX>A35RK VK4RGG>ZL2  
 51670(QG53)>ZL2 ZL1,ZL2>VK2 06-0700 VK4RTL>ZL2(3426km) VK2,VK4(3042km)>ZL2 07-0800  
 FK8SIX>VK4 VK4>ZL2(3421km,3456km) ZL2MHF>VK4(2546km) 55250(RE79)>VK4 VK6RSX>VK5  
 VK4RTL>ZL2(3426km),ZL3(3597km),VK3 VK4RGG>ZL2 FK8SIX>ZL2 08-0900  
 VK4RTL>ZL2(3478km),VK1 VK5RBV>VK3(444km) VK4RTL>ZL2(3426km) VK4RGG>ZL2 09-1000  
 ZL2>VK4(2374km) 50740(RE78)>VK4(2528km) FK8SIX>ZL2,VK2 VK8RAS,VK8RAS,VK4RTL >VK5  
 50760(RE78)>VK4 VK4RTL>VK3 10-1100 VK4RTL>VK3 VK4>VK5 VK8RAS>VK4 data unavailable

Dec 29 00-0100 03-0400 VK5VF>VK2 VK2>VK3 VK5RBV>A35RK(4854km)  
 ZL3SIX>A35RK(2914km) 04-0500 FK8SIX>VK3(2897km) VK3>VK2 VK4RGG>VK3 ZL2>A35RK  
 VK5>A35RK(4888km) A35RK>VK3(4646km) 55159(AH45)>ZL2(3089km) ZL3SIX>A35RK(2914km)  
 ZL4>A35RK(3193km) VK4RGG>VK3 05-0600 FK8SIX>VK4,ZL2 VK4RGG>ZL2  
 VK3>VK2(725,791km) 51670(QG43)>ZL2(2496km) 22-2300 VK4RTL,VK3>VK4 data unavailable

Dec 30 00-0100 A35RK,VK5RTL,FK8SIX,VK8RAS,VK4RGG>VK3OT 03-0400 VK6>VK2

Dec 31 01-0200 VK5,ZL3,A35RK 0533 VK6>VK6 22-2300 ZL2>VK2 A35RK>VK3

## 28MHz

### 28 MHz in the UK

The tally of beacons reported in the UK declined from 26 in November to 17 in December, and among that reduced number most were heard very occasionally and briefly. In one respect this was a better result than for December 2007, when only 10 beacons were reported into the UK. However, in that month sporadic-E events meant that those beacons were reported on more occasions.

Beacon	06-09	09-12	12-15	15-18	18-21	21-24		Beacon	06-09	09-12	12-15	15-18	18-21	21-24
DK0TEN	1	1	2	1		1		IY4M					1	
DM0ING	1	5	1					LA4TEN	1					
EA3TEN		1	1			1		LA5TEN		1				
F5ZUU					2	1		OE3XAC		1				
I1M					1	1		OK0EG		1				
IQ1SP					1			SK5AE	1	1	1			
I3GNQ					1			SK0CT	1	2				
IW3FZQ		1												
IZ3LCJ					1			EA4Q	2	1			1	1

The tally of 'entities' reported into the UK – 27 – while unimpressive, exceeded the 21 known to have been heard here in December 2007. The score would have been considerably more modest had it not been for the ARRL contest, which brought an upsurge of activity for that one weekend.

CT3 CX DL EA EA8 EI F HA I LA LU LY OE OH OK PA PY S5 SM SP TT UA V5 YU ZC4 6W 9A

Unsurprisingly, Europe as a whole fared better than the UK. While intra-European propagation was reported less than in November and the experience of individual locations will have differed widely, we can say – just – that all continents were worked during the month. VK6 was worked during the morning of both days of the ARRL contest and also by DB1AN at 2006 on the 29<sup>th</sup>; VK9XX was heard by EA4HIP at the unusual hour (for this stage of the cycle) of 0146 on the 28<sup>th</sup>. The US was worked during the European midday period on the 13<sup>th</sup> and 14<sup>th</sup> and the evening of the 14<sup>th</sup>. One of two contacts reported with Asia was on the morning of the 13<sup>th</sup>. Contacts were reported with South America on the evenings of the 13<sup>th</sup> and 25<sup>th</sup> – two days compared with 10 days in November. Africa was worked on a more substantial ten days, mostly during the noon period, but this was a deterioration from the 23 days in November.

Even in poor months we can usually count on a healthy level of contacts within the North America/Caribbean region. This was a grim month for many Ws and VEs, but others, mainly in southerly locations, had better fortune and contacts were reported on a majority of days during all four time periods. Asia and Oceania were not reported at all and Europe only on the two days of the contest. Africa was reported on three days, two of them during the contest. The only limited cheer was South America, where there are known to have been openings on 19 days. This included a tep opening between LU and W around 2340 on the 8<sup>th</sup>. Propagation within South America was seasonally high, with reports received on 24 days. South American reports relating to Oceania, Asia and Europe mostly related to the contest, but Africa was worked on five days.

Outside the contest weekend (and not always then) very few intercontinental contacts were reported from Asia. Intra-Asian working was reported on ten days. The only fertile area for Asian operators was Oceania, to which there were openings on no fewer than 27 days compared with 25 days in November. Within Oceania propagation was even better than in November, with reports on all days and 77 per cent reliability for the weakest periods of the day.

OC	AS	EU	AF	NA	SA
M N A E	M N A E	M N A E	M N A E	M N A E	M N A E
%	%	%	%	%	%

OC	90 80 77 77	10 19 52 55	00 00 00 03	00 00 00 03	00 00 00 03	03 06 00 00
AS	16 58 55 03	19 23 19 03	03 03 00 03	00 00 03 00	00 00 00 00	06 00 00 00
EU	06 06 00 00	03 00 00 03	61 71 55 58	03 19 16 03	00 06 00 03	00 00 00 06
AF	03 03 00 00	03 00 00 00	03 16 13 10	00 03 06 06	00 00 06 00	00 00 00 16
NA	00 00 00 00	00 00 00 00	03 03 00 00	03 00 00 00	74 71 55 71	19 23 35 32
SA	00 00 03 06	00 00 00 03	00 06 03 00	00 13 06 03	03 29 45 45	16 16 48 58