THE SIX AND TEN REPORT

December 2005

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Analysis of 28 MHz reports from the UK

28 MHz reports and logs for December 2005 from G2AHU, G3IMW, G3USF, G3YBT, G4JCC, G4UPS, G0AEV, G0IHF and packet cluster reports. Compilation and commentary by G0AEV.

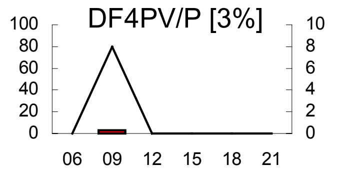
Winter Sporadic E was very good in the first few days of the month; rather spotty thereafter. Overall, December 2005 proved to be a reasonable, though unexceptional, month for 10m Sporadic E. In contrast, 6m Es results were appalling. This situation can't just be due to 6m band users concentrating on completing digital MS mode QSOs at the expense of monitoring for Es openings. 10 and 6m Es openings are normally strongly correlated as most openings at 28 MHz also reach 50 MHz, even in the winter season. The poor correlation this month means that a much higher proportion of events than normal had Es with MUFs falling short of 50 MHz

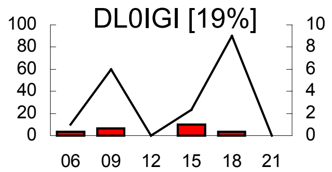
F layer results for December were much as expected with most openings restricted to single hop or southerly paths. There was a solitary opening to USA, which is about as good as could be expected under the present low solar conditions.

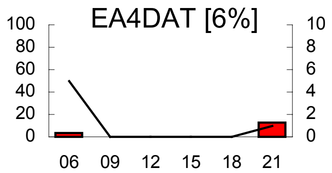
Beacon graphs legend

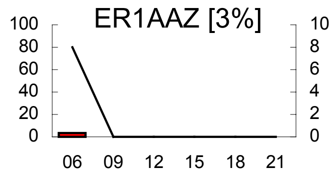
Legend for all beacon graphs in this Section: - graph bars (left Y-axis): beacon reliability as the percentage of days a beacon was heard by any UK observer within each time band. Graph lines (right Y-axis): Signal Strength as the average of the daily maximum Signal reported by any observer in each time band. Time band codes (X-axis): 6=0600-0900, 9=0900-1200, 12=1200-1500, etc. Callsigns are followed by daily reliability figures, the percentage of days per month when the beacon was reported.

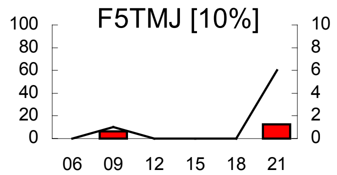
European Propagation / Beacons

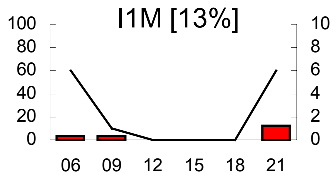


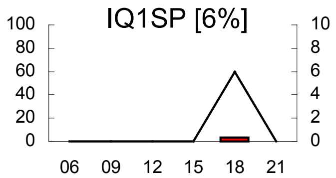


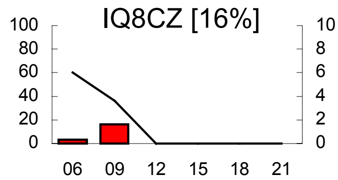


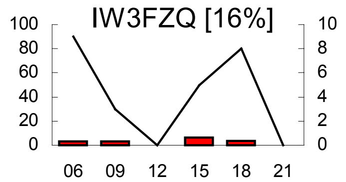


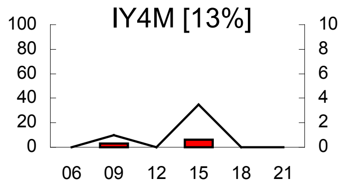


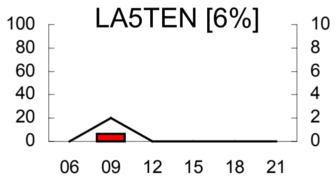


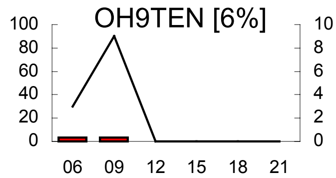


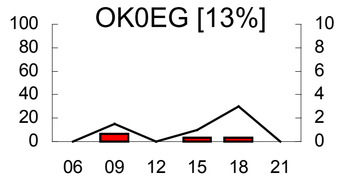


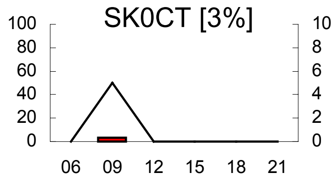


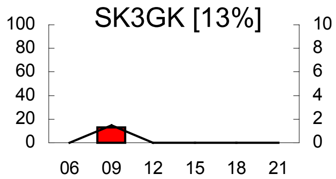


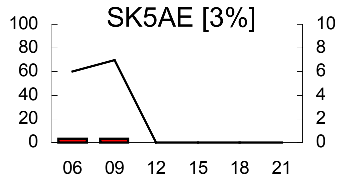


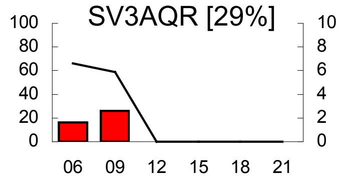






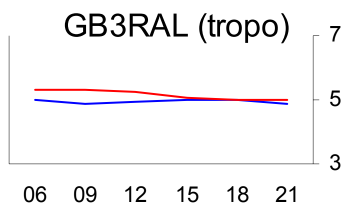






Propagation modes for European beacons.

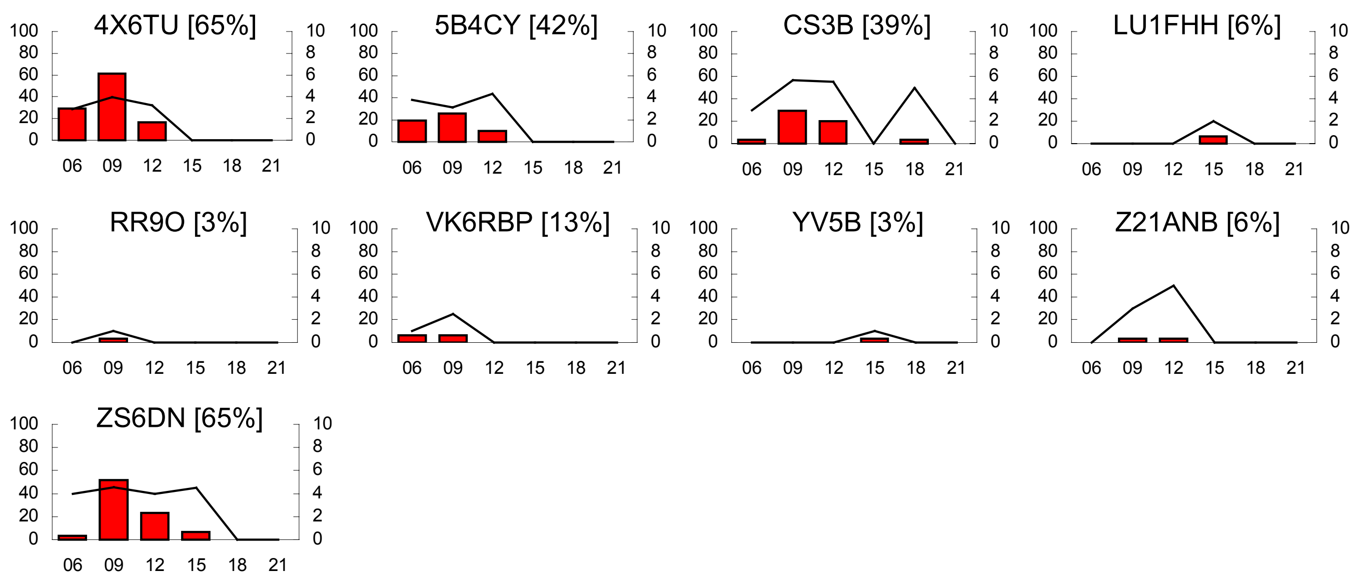
All the beacon monitoring results graphed on the previous page are due to Sporadic E with the exception of those for SV3AQR and ER1AAZ (and possibly some of the results for OH9TEN) which were F2. A little meteor scatter was reported from the high-powered DL0IGI, but no one reported anything special from the Geminids shower.



The graph opposite show the results of monitoring of the GB3RAL beacons on 28.215 (lower blue line) and on 28.191 (upper red line). Although the difference between the two is not as clear as indicated last month, the new beacon on 28.191 appear to have the stronger signal. Neither beacon shows any significant diurnal variation in signal strength.

Propagation to Asia, Africa, Oceania, South and Central America

Beacon Graphs.



Beacon Notes.

LU4AA is QRT and OA4B is believed to be off air - all other NCDXF beacons within current propagation range on 10m are active.

Suggested propagation modes

All beacons were heard by "normal" F2 propagation, with perhaps some "TEP" on paths to southern Africa. Daily reliabilities on all paths are lower than in November. Propagation to ZS, 5B, CS and 4X was still in reasonable shape with some form of opening occurring on round about 50% of days to most of these areas. The results from Argentina are rather poor in comparison to those for southern Africa but this might be due in part to the availability of beacons with those from LU being notoriously fickle at times. LU4AA is missed at times like this.

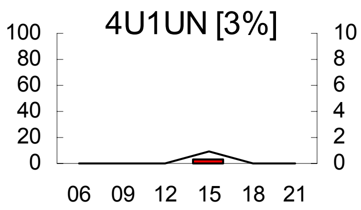
10m DX in December 2005

The following list of DX countries worked or heard in the UK comes from packet cluster Spots (DX Summit: http://oh2aq.kolumbus.com/dxs/) and from the logs of Six and Ten reporters. December data include reports and spots from the ARRL 10m contest - 20% of the countries worked in December were only reported during the contest.

DX in December: 3DA0, 4X, 5B, 5U, 6W, 7X, CX, EA8, EA9, EK, FR, FY, LU, PY, PZ, ST, TA, UA9, VK(6,8), W, YV, Z2, ZC, ZD8, ZS.

DX in November for comparison: 3B9, 4X, 5B, 5Z, 9G, A6, EA8, FH, HC8, J3, KP2, KP4, LU, OD, PJ4, PY, PZ, ST, TM, TZ, UA9, UN, VK(6), ZC, ZS.

Propagation to North America



There was one report of 4U1UN this month. G3YBT heard this beacon at 15.00z on 28 December (together with YV5B and DL0IGI). Colin "dashed up to the SSB end of the band and worked K1KW and KG4WW as the band was fading out". A good example of the worth of beacons!

DX cluster spots only show M5DND > K1KW heard 51 at 1458 on the same day. This appears to have been the only December opening between USA and UK. Such an F2 event may not be repeated until the next solar cycle gets under way - but remember there are always chances of muli-hop sporadic E across the Atlantic in the mid summer months.

Analysis of 50 MHz reports from the UK

UK 50 MHz reports for December 2005 from G2ADR, G3HBR, G3IMW, G4UPS and via packet cluster spots. Compilation and commentary by G0AEV.

Winter sporadic E on Six this year has, to date, been a distinct disappointment. There were a few brief openings in the first few days of the month - the best of these being to Italy on 2nd in the early afternoon - after which nothing was reported at all. Not only is this the worst showing for UK 6m Es in the month of December in the previous decade (according to 6&10 records) but sporadic E on 10m was far from poor being reported on 14 days. It may be that nearly all the 10m Es events happened to have maximum useable frequencies that failed to reach 50 MHz, but general experience would anticipate a higher proportion of openings appearing on both bands. It is tempting to suggest that the 6m operating community is missing openings, perhaps while concentrating on digital mode meteor scatter, but I think the reverse is probably true: JT6M activity (or any activity for that matter) improves the chances of Es events being detected. It is possible that weak Es was reported as ionoscatter or not reported at all, but it seems most probable that Es just wasn't present. Initial compilation of January 2006 data shows a slightly better showing of Es events so perhaps the December results are just a statistical aberration.

As indicated above, JT6M meteor activity was high, and much higher than that reported for any other mode. There was a small increase in MS activity levels and QSOs worked during the Geminids shower. Elsewhere, several weak aurora were available to GM stations.

Sporadic E

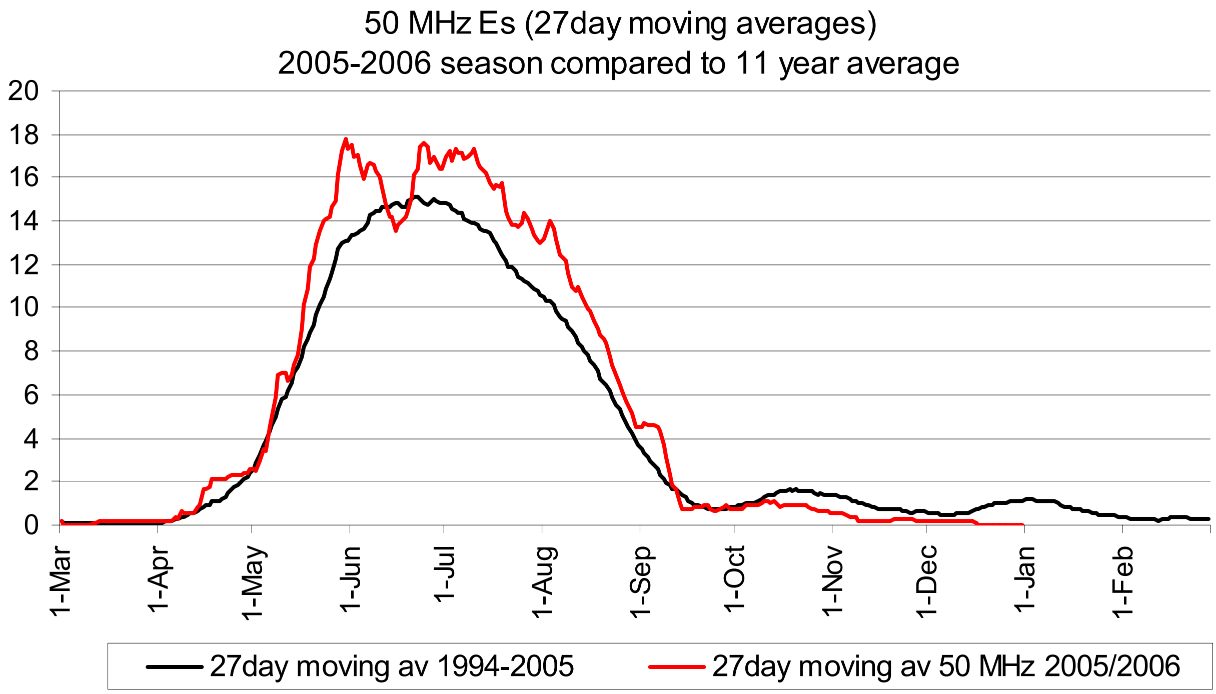
Sporadic E results tabulated below ordered alphabetically by country prefix. Percentages following the country name are the daily reliability values (the number of days when propagation was reported). The first row of each table, “D” is the day of the month, subsequent rows give the maximum signal strength reported from the UK in each of three hour time bands (“06” for the band 0600 - 0900, “09” for the band 0900 - 1200, etc.). A figure of “0” indicates that signal strength was not reported.

	EA Spain (3%)	HB Switzerland (3%)	I/IS/IT Italy (3%)	LY Lithuania (3%)
D	3	2	2	3
06				0
09	5			
12			9	
15		9	9	
18				
21				

Not much can be said about the paltry showing of Es events tabulated above. See the data table in Section 3 to compare the situation at 6m with that reported at 10m

Es Propagation Summary.

The graph on the following page charts the progression of the current 6m Sporadic E year compared with the average of the previous 11 years. The 2005 autumnal peak is clearly seen as weaker than usual, "peaking" in the first half of October rather than in the 2nd half as the average data suggest, and trailing off towards zero by early November. The trend line hovers above zero for most of November and December with no sign at all of a winter season "peak". The addition of January 2006 data will affect the late December trend line and first indications suggest that when these data are included there will be a small peak in early January. However, no subsequent modifications will be able disguise the fact that the 2005-2006 winter Es season, at 6m at least, has been particularly poor.



The graph shows 27-day moving averages of the daily country/area counts calculated directly from the data reported each month in the *Six and Ten Report*. The upper (red or paler) line is the moving average data for the year March 2005 to February 2006, a period chosen so that the "Es year" starts and ends at the "Es minimum". The lower (black / darker) line is the 11 year (1995-2005 inclusive) moving average of the same measure.

Tropospheric propagation

No exceptional "tropo" events were noted - the list below records the best on offer

1st	0800	G4UPS > GB3MCB "unusually strong, 569 at 045 deg"
18th	0957	ON4IQ > G3FYX (IO81)
21st	1238	EI7BMB > GB3LER 519 (*presumed tropo*)
22nd	1251	G4IGO > G0GMS "fb tropo" (JT6M)
27th	1807	G4PCI > ON4IQ "59+" (JT6M)

Aurora

Aurora in December were much like those reported last month - a number of short, weak "Scottish Type" events available exclusively to GM stations. As last month a few of these aurora had associated auroral E openings.

1st	21z	2311	MM0AMW (IO75) > GB3LER 54A, OY6SMC 53A
9th	21z	2303	MM0AMW > GB3LER 53A
11th	15z	1733	OZ1DPR > GM4WJA 56A
	18z	1823	MM0BSM > GB3LER 55A
12th	18z	2000	MM0AMW > GB3LER 54A
27th	15z	1754	MM0BSM (IO86) > GB3LER "weak au"
	18z	1845	SM0LQB > G4DEZ 53A
	21z	2200	MM0AMW > GB3LER 54A
31st	21z	2150	GM4ILS (IO87) > JW7SIX 55A

Auroral E

11th 18z 1830 MM0AMW (IO75) > JX7SIX 549
31st 21z 2237 G4KCT > JW7SIX 559
2254 G0FYD > JW7SIX

Meteor Scatter

JT6M QSOs continue to exceed in quantity than by other modes by a considerable margin. Clearly in the absence of sporadic E, digital MS represents the only way that stations can make contacts with most of Europe.

MS heard/worked (mostly via JT6M) in December by day. Weekend days (when activity is likely to be greater) are highlighted in grey. The peak days for the Geminids shower are shown in yellow (paler) shading but there is only a very small increase in activity on these days - no more than seen at weekends or in the period between Christmas and the New Year. It appears that random MS is as effective a propagation mechanism as the high meteor flux of this shower.

Date	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
MS QSOs	3	2	8	4	3	2		2	4	11	5	3	7	11	3	3	5	7			1	4	1	8	4	13	5	8		6	9
All JT6M	3	3	16	13	10	3	3	12	8	22	22	11	25	28	11	14	21	32	8	5	14	17	13	24	15	31	24	21	16	16	21

MS QSOs = all QSOs where MS mode indicated or inferred: mainly digital modes.
All JT6M = all JT6M QSOs/reception reports less those explicitly identified as tropo or Es

MS heard/worked (mainly via JT6M) in December 2005 by hour

Hour	QSOs	Countries
06z	0	
07z	1	SP
08z	8	EA, F, I, OK, S5
09z	22	EA, F, LA, OE, OZ, SM, SP
10z	19	9A, EA, F, OE, S5, SM, SP
11z	18	EA, G<>GM, LA, OZ, S5, SP
12z	8	EA, G<>G, LA, OZ
13z	9	EA, OZ, S5
14z	4	EA, I
15z	7	EA, OZ, S5
16z	8	EA, HB, I, OZ, S5, SM, SP
17z	2	LA, S5
18z	5	EA, OZ, SP
19z	6	EA, OZ, PA, SM
20z	9	EA, I, LA, OE, SM, SP
21z	6	EA, ES, I, LA
22z	8	EA, EA9, LA, OZ, PA
23z	2	EA, PA

DX Propagation

No F2, TEP or Es Dx (i.e. outside of Europe) was worked or heard this month (surprised?)

EME

For the record, these are the December (JT65A) moon-bounce reports from the DX cluster

6 1803 G4IGO > W1JJ -25 dB
7 2018 G4PCI > W1JJ -23 dB
9 1415 G4IGO > JH2COZ
11 0142 G4IGO > K7AD
11 1433 G4PCI > JH2COZ
17 1819 G4PCI > SM7BAE
18 1017 G4PCI > JA1RJU - 25 dB
19 2043 G4PCI > JA1RJU -28 dB
30 1228 G4IGO > K7BV/1 -22 dB

Solar and Geomagnetic Data for December 2005

Data from Internet sources. Compilation by G0AEV.

Sunspot numbers (SEC)	Mean 62.6	Max 98 (2nd)	Min 22 (7th)
Solar Flux (28 MHz)	Mean 90.8	Max 106 (2nd)	Min 85 (17th)

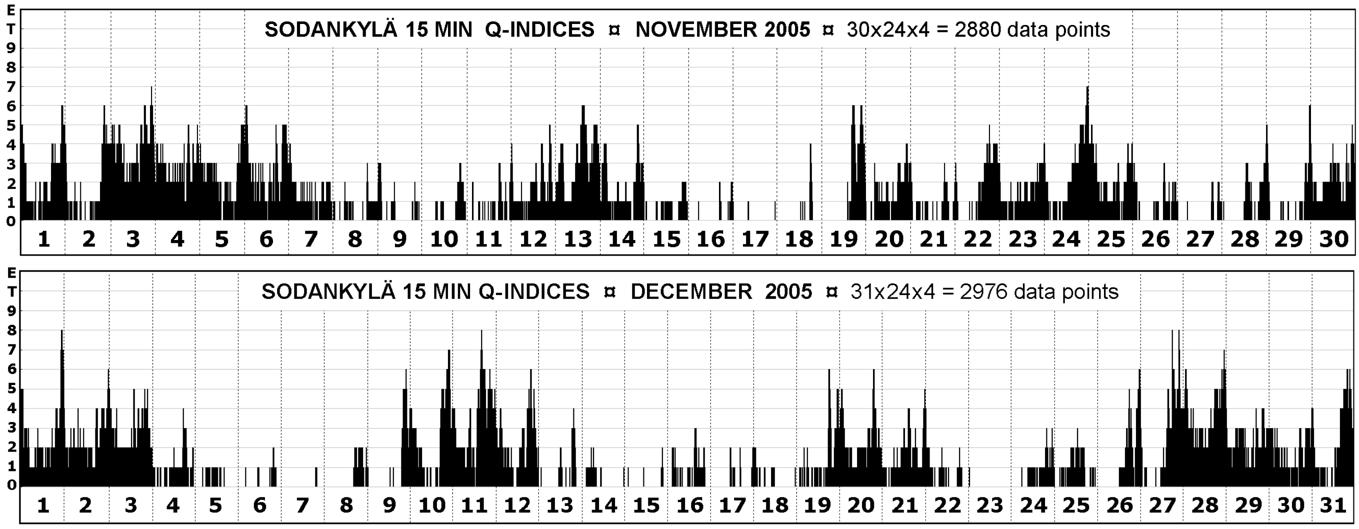
Solar data for December 2005 are presented in the table at the end of this section. Numbers in the 28 and 50 MHz columns of this table are the total daily “areas” worked/heard from the UK for each of several propagation modes and are a summary of the data presented in the first sections of this Report. On 28 MHz “areas” refer to the number of beacons reported via Es and F-layer; on 50 MHz the number of countries via Es, F-layer modes (including TEP), Aurora and Auroral E. F2 critical frequencies are for Chilton in Oxfordshire (data from RAL). SIDC spots are from SIDC, and other solar data from the joint USAF/NOAA daily summaries or directly from SEC.

Energetic Events.

The following list of M and X class X-ray solar events in December may be incomplete.

2nd	0242-0300	M6.5
	1005-1025	M7.8 1n
3rd	0242-0300	M6.5

Q-indices from Sodankylä, Finland (Thanks to OH2LX)



Q-indices for November and December 2005

November Q-indices from Finland were missed from the last Report - they are reproduced in the upper graph together with the graph showing the Q-indices for December. Both months were relatively quiet magnetically with K indices from UK observatories and the Kp index reaching 5 or more on only 3 days in November and a further 3 days in December.

Geomagnetic data from the Finnish observatories for December (November in brackets) are:

<u>Monthly averages</u>
Sodankylä: monthly Ak average = 13.5 (12.7 in Nov)
Nurmijärvi: monthly Ak average = 8.1 (8.0 in Nov)

<u>Most disturbed December days:</u>
Sodankylä: 11th, Ak = 53 (Nov 3rd Ak = 41)
Nurmijärvi: 11th, Ak = 25 (Nov 3rd Ak =22)

K-indices.

The following four tables present the Kp index (from SEC) and the Lerwick ("KL"), Eskdalemuir ("KE"), and Hartland ("KH") K-indices (from the British Geological Survey). Each table is set out with the day of the month in the top row followed by rows containing the K-values or each 3-hour period. The bottom row of each table is the sum of the K-values for the day. Pale (yellow) shading indicates K = 5, darker (grey) when K > 5. There were only 3 days in December when Kp or the UK K-indices reached 5.

Planetary K (Kp)

KP	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
00	4	3	4	1	1	0	0	0	1	3	3	2	0	0	0	1	0	1	2	4	1	2	0	0	1	1	3	3	3	2	3
03	2	4	2	0	1	0	0	0	0	4	2	3	2	1	0	3	1	0	1	3	2	1	0	0	3	0	0	3	2	3	2
06	1	3	1	1	0	1	0	0	0	3	3	1	1	2	1	1	1	0	0	3	2	1	0	0	2	1	0	3	3	1	3
09	2	3	2	1	0	1	0	0	0	1	4	0	0	1	1	1	2	1	0	2	2	1	0	1	2	0	1	3	2	2	1
12	2	2	2	2	0	1	0	0	1	2	2	1	3	0	0	1	2	1	2	3	3	1	0	2	3	2	2	3	2	1	2
15	2	1	3	1	0	0	0	1	1	2	5	2	1	0	0	1	1	0	2	2	3	1	1	1	1	2	5	3	2	2	3
18	2	3	3	2	0	1	0	0	1	4	5	3	1	0	0	1	0	0	4	4	1	1	0	1	0	3	5	3	1	1	1
21	4	2	3	1	1	1	0	1	3	2	3	2	2	1	0	1	1	1	3	3	2	1	0	1	0	3	4	3	2	2	2
Σ	19	21	20	9	3	5	0	2	7	21	27	14	10	5	2	10	8	4	14	24	16	9	1	6	12	12	20	24	17	14	17

Lerwick K (Shetlands)

KL	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
00	4	3	3	1	0	0	0	0	1	3	3	3	0	0	1	0	0	1	1	4	1	2	0	0	2	0	3	3	3	2	3
03	2	2	2	0	0	0	0	0	0	3	1	2	1	0	0	2	0	0	1	2	1	0	0	0	1	0	0	1	2	2	1
06	1	2	1	0	0	0	0	0	0	2	1	1	0	1	0	1	0	0	1	1	1	0	0	0	1	0	0	2	2	1	1
09	1	2	1	1	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2	2	1	0
12	2	2	2	1	0	0	0	0	0	1	2	1	1	0	0	1	1	0	1	2	2	0	0	1	1	0	1	2	2	1	1
15	1	1	3	1	0	0	0	0	0	1	6	2	0	0	0	2	1	0	1	2	2	0	0	0	1	1	3	3	2	2	3
18	3	3	3	3	0	0	0	1	1	3	4	3	3	0	0	1	0	0	4	4	1	0	0	2	0	3	5	3	2	2	3
21	4	3	2	1	0	1	0	1	3	3	3	3	1	0	1	1	0	0	3	3	2	1	0	2	1	4	5	4	3	3	4
Σ	18	18	17	8	0	1	0	2	5	16	22	16	6	1	2	8	2	1	13	19	12	3	0	5	7	8	17	20	18	14	16

Eskdalemuir K (southern Scotland)

KE	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
00	4	3	3	1	1	0	0	0	1	3	3	3	1	0	1	1	0	1	1	4	1	3	0	0	2	0	3	3	4	2	3
03	2	2	2	1	0	0	0	0	0	3	2	3	1	0	0	3	0	0	1	3	1	0	0	0	1	0	1	2	2	2	2
06	1	3	1	0	0	0	0	0	0	3	2	2	0	1	0	1	1	0	1	2	2	0	0	0	1	0	0	2	2	1	1
09	2	2	2	1	1	0	0	0	0	0	3	1	0	0	0	1	1	1	1	1	2	1	0	1	1	0	1	2	2	1	0
12	2	2	2	2	0	1	0	0	1	1	2	2	2	0	0	1	1	1	2	2	3	0	0	2	2	1	2	2	2	1	3
15	2	1	3	2	0	0	0	0	1	2	5	2	0	0	0	2	1	0	2	3	3	0	0	1	2	1	4	2	2	2	3
18	3	3	3	3	1	0	0	1	2	3	4	4	3	0	0	2	0	0	4	4	1	0	0	2	0	3	5	3	2	2	3
21	4	4	3	1	0	1	0	1	4	3	3	3	2	1	1	0	1	1	4	3	2	0	0	2	1	4	5	4	3	3	4
Σ	20	20	19	11	3	2	0	2	9	18	24	20	9	2	2	11	5	4	16	22	15	4	0	8	10	9	21	20	19	14	19

Hartland K (SW England)

KH	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
00	4	3	3	1	1	0	0	0	1	3	4	3	1	0	1	2	0	2	1	4	1	3	1	0	2	0	3	3	4	2	3
03	2	3	2	1	1	0	0	0	0	4	2	3	1	0	0	3	1	1	1	3	2	1	0	0	2	0	1	2	2	3	2
06	1	3	1	1	0	0	0	0	1	3	2	2	0	1	1	1	1	0	1	2	2	1	0	0	1	1	0	3	2	2	2
09	2	3	2	1	1	0	0	0	0	1	3	1	1	0	1	1	1	1	1	1	2	1	0	1	1	0	1	2	2	3	0
12	3	2	2	2	1	1	0	0	1	1	2	2	2	0	0	1	1	1	2	3	3	0	0	2	2	1	3	2	2	1	3
15	2	2	4	2	0	0	0	0	2	2	4	3	0	0	0	2	1	0	2	3	3	1	0	2	2	1	5	2	2	2	3
18	4	3	4	3	1	1	0	1	2	4	5	4	3	1	0	2	0	0	4	5	1	1	0	2	0	3	5	3	2	2	3
21	4	4	3	1	0	1	0	1	4	4	3	3	2	1	1	1	1	1	4	3	2	1	0	2	1	4	6	4	3	3	4
Σ	22	23	21	12	5	3	0	2	11	22	25	21	10	3	4	13	6	6	16	24	16	9	1	9	11	10	24	21	19	18	20

December	28 Areas		-- 50 Areas --				2800	- Spots -		Max			X-ray	Max foF2		Min foF2		-- Particle Fluences --		
2005	Es	F	Es	DX	A	AE	Flux	SEC	SIDC	Kp	Ap	Aa	b.gnd	MHz	Hour	MHz	Hour	2MEV Elec	1MEV Prot	10MEV Prot
01-Dec	2	6	0	0	2	0	98	79	49	4	13	30	B2.6	7.0	14	1.7	06	1.0E+07	1.2E+06	1.5E+04
02-Dec	8	7	2	0	0	0	106	98	54	4	12	28	B3.6	7.5	11	1.9	06	4.9E+07	1.5E+06	1.5E+04
03-Dec	9	5	2	0	0	0	101	75	60	4	11	26	B2.3	7.0	12	1.7	07	1.4E+08	2.2E+06	1.4E+04
04-Dec	2	8	0	0	0	0	95	91	55	2	5	13	B1.1	6.9	11	2.1	06	6.9E+07	5.9E+05	1.4E+04
05-Dec	0	4	0	0	0	0	92	85	55	1	2	6	A8.9	7.2	13	2.3	19	9.6E+07	7.5E+05	1.4E+04
06-Dec	1	2	0	0	0	0	89	58	45	1	3	5	A7.7	7.3	12	2.3	05	9.3E+07	8.6E+05	1.4E+04
07-Dec	1	4	0	0	0	0	89	22	23	0	0	3	A6.7	7.1	09	2.5	20	7.0E+07	9.1E+05	1.4E+04
08-Dec	1	4	0	0	0	0	90	51	25	1	1	3	B1.0	6.5	11	2.4	05	8.1E+07	1.2E+06	1.5E+04
09-Dec	0	4	0	0	1	0	89	61	23	3	0	13	B1.1	9.3	11	2.3	07	2.3E+07	1.4E+06	1.4E+04
10-Dec	2	6	0	0	0	0	91	55	39	4	0	27	B1.4	6.6	13	2.3	07	1.1E+06	7.8E+05	1.5E+04
11-Dec	0	5	0	0	2	1	93	51	38	5	0	37	B1.6	5.7	12	2.1	06	9.4E+05	7.4E+05	1.5E+04
12-Dec	0	2	0	0	1	0	88	41	33	3	0	24	A7.5	6.1	13	1.9	21	2.6E+06	3.5E+05	1.4E+04
13-Dec	0	1	0	0	0	0	88	67	38	3	0	11	A5.7	6.3	14	2.1	04	2.0E+07	4.4E+05	1.4E+04
14-Dec	0	3	0	0	0	0	90	55	38	2	0	7	A6.0	6.1	13	2.0	05	2.4E+07	5.7E+05	1.4E+04
15-Dec	5	5	0	0	0	0	87	47	36	1	0	7	A4.2	6.2	13	1.8	06	2.7E+07	8.0E+05	1.4E+04
16-Dec	4	2	0	0	0	0	86	47	31	3	0	17	A4.7	6.3	12	1.9	05	1.2E+07	1.2E+06	1.4E+04
17-Dec	1	1	0	0	0	0	85	45	26	2	0	9	A3.7	6.3	13	2.4	20	4.8E+06	1.1E+06	1.4E+04
18-Dec	0	2	0	0	0	0	86	45	28	1	0	9	A4.4	6.4	12	1.9	07	6.0E+06	1.6E+06	1.5E+04
19-Dec	0	1	0	0	0	0	90	63	43	4	0	22	A6.1	7.0	13	2.1	07	2.9E+06	1.4E+06	1.5E+04
20-Dec	0	1	0	0	0	0	88	53	39	4	0	33	A5.5	5.9	13	2.2	06	1.3E+06	4.9E+05	1.4E+04
21-Dec	0	1	0	0	0	0	87	45	42	3	8	17	A5.0	5.6	13	1.8	06	4.4E+06	1.0E+06	1.5E+04
22-Dec	0	2	0	0	0	0	88	77	41	2	0	10	B1.1	6.4	13	2.4	05	8.9E+06	4.9E+05	1.4E+04
23-Dec	0	1	0	0	0	0	93	47	36	1	1	3	B1.6	7.0	10	2.3	05	1.3E+07	5.4E+05	1.4E+04
24-Dec	0	2	0	0	0	0	92	70	53	2	0	11	B1.5	6.9	14	2.2	05	9.3E+06	5.8E+05	1.9E+04
25-Dec	0	4	0	0	0	0	92	77	43	3	6	16	B1.1	7.8	12	2.3	07	1.4E+06	3.1E+05	1.4E+04
26-Dec	0	3	0	0	0	0	93	90	52	3	6	14	B1.2	7.1	10	2.3	07	1.3E+06	4.1E+05	1.5E+04
27-Dec	0	6	0	0	2	0	92	78	51	5	18	43	B1.0	6.8	11	2.3	05	3.9E+06	2.1E+06	1.4E+04
28-Dec	1	8	0	0	0	0	89	61	48	3	14	26	A9.3	7.5	13	1.8	05	1.7E+07	2.0E+06	1.5E+04
29-Dec	3	6	0	0	0	0	90	77	45	3	8	20	A9.3	6.9	11	1.8	05	6.3E+07	1.4E+06	1.4E+04
30-Dec	0	7	0	0	0	0	90	67	46	3	7	17	A8.8	6.3	13	2.0	07	1.6E+08	1.4E+06	1.4E+04
31-Dec	4	6	0	0	1	1	87	62	41	3	0	23	A6.5	7.7	13	1.9	04	2.6E+08	1.3E+06	1.3E+04
Sum	44	119	4	0	9	2														
Average	1.4	3.8	0.1	0.0	0.3	0.1	90.8	62.6	41.2	2.7	3.7	17.1	B1.1	6.8	13	2.1	05	4.1E+07	1.0E+06	1.4E+04
Maximum	9	8	2	0	2	1	106	98	60	5	18	43	B3.6	9.3	14	2.5	21	2.6E+08	2.2E+06	1.9E+04
Minimum	0	1	0	0	0	0	85	22	23	0	0	3	A3.7	5.6	09	1.7	04	9.4E+05	3.1E+05	1.3E+04

50 MHz Outside Britain

Compilation and Commentary by G3USF

Continental Europe, Africa and the Middle East

Auroral-Related Propagation

Geomagnetic levels were a shade higher than in November, but although aurora or auroral-E were reported on no fewer than eleven days, a single G report on the 27th was the only one from anywhere south of OZ

Dec. 1 2220-40 Au>OH5IY 2220-2300 AuFM>OH5 2310-30 Au>OH5

Dec. 3 1520-1610 AuFM>OH5 1530-40 Au>OH5 1620-50 AuFM>OH5

Dec. 9 2210-20 Au>OH5 2230-40 Au>OH5 2310-30 Au>OH5

Dec. 10 2200 49750(UA)>SM0(56a) 2200-40 Au>OH5 2250-2320 Au>OH5

Dec. 11 17-1800 JW7SIX>OH6(KP02 599AE) OH3>OZ(55a) GM>OZ(56A) OH5>OZ(55A) 1750-1800 Au>OH5 18-1900 OH9SIX>SM0(53A) JW>SM0(59 AE) JW>LA(57) JX7SIX>LA(559) JW>SM0(55a) JX7SIX>SM0(55a) 1830-50 Au>OH5 19-2000 JW9SIX>SM0(part-A) 1910-40 Au>OH5 2020-2110 Au>OH5 21-2200 JW9SIX>OZ(539) LA7SIX>OZ(579) 22-2300 JW9SIX>OZ(599) JW5SIX>OZ(559) JX7SIX>OZ(579) 2230-40 Au>OH5 23-2400 JX7SIX>DL(JO53 539) JX7SIX>OZ(JO45 57)

Dec. 12 1912 49750>SM0(58a)

Dec. 19 1800-30 Au>OH5 1900-1910 Au>OH5

Dec 20 1730-40 Au>OH5 1750-1800 Au>OH5

Dec. 26 1851 JW4>OH6(AE)

Dec. 27 1640-1700 Au>OH5 17-1800 LA>SM0(55a) SM1>LA 1710-40 Au>OH5 18-1900 JW9SIX>SM0(59a) OZ>SM0(55a) JW9SIX>OH2(55 AE) OZ>LA((59a) JX7SIX>SM0(55a) LA>OZ(59a) G>SM0(53a) OZ>SM0(55a) LA7SIX>OH1(559 AE) 1820-40 AuFM>OH5 19-2000 SM0>SM1 SP2>SM0(31a) OH9SIX>OH3(mode?) 2140_50 Au>OH5 2210-40 Au>OH5

Dec. 31 2000-40 Au>OH5

Other Modes

The striking aspect of the month's reports is that contacts are known to have occurred on every day of the month, even though anyone casually checking the band might easily have concluded that there was nothing but 2 MHz of silence. We owe this demonstration that 50MHz is usable for contacts beyond local range, even this close to solar minimum to a relatively small group of hardy souls who both make contacts and report them, almost always by meteor scatter using JT6M. (JT6M crops up occasionally in conjunction with tropo or Es contacts, but these are very much the exception.) This is the main difference between the current approach to solar minimum and the previous one, when 'JT' was not on the scene.

A small number of the contacts reported may be attributable to sporadic-E, but the only day on which this was fairly clearly demonstrated was the 29th. As G0AEV has noted, it is possible that occasional weak Es was credited to ionoscatter - where a propagation mode is indicated, as in (ms), this reflects the reporter's judgment, which may not invariably be correct. There were some tropo reports, but none that were in any way remarkable. There were no reports of contacts outside Europe.

Callsigns given in full relate to beacons.

Dec. 1 1406 HB9SIX>DL(t) 2007 G>LA(jt) 21-2200 G>EB1(ms) SP9>SM5(jt)

Dec. 2 1104 SMtv>DL 1341 GB3BUX>I5 16-1700 EA7>EB1(ms) G>I4 I4>GW GM>I5 I5>LA YO3KWJ,YO9>HB 17-1800 UT5G>I4 SV9SIX>SP6 LZ4>HB SP9>LA(jt) 18-1900 LZ4>I2 1845 EB1>LA(jt) 2025 OH6>LA(jt) 21-200 G>EB1(ms)

Dec. 3 0029 G>LA(jt) 08-0900 PA>OH6(jt) PA>OH1(jt) 0800-0830 HBtv(55.24MHz)>OH2(Es?) 09-1000 PA>LA(jt) G>LA(jt) EA7>S5(jt) 10-1100 G>LA(jt) G>EB1(ms) PA>EB1(ms) HB9SIX>DL 11-1200 F>EB1(ms) EA9>EB1(ms) F>EB1(ms) 1330 G>EB1(ms) 16-1700 LZ4>HB(jt) 1810 SP9>LA(jt) 1952 G>LA(jt)

Dec. 4 0753 OH6>OZ(jt) 0926-35 G>EB1(ms) PA>EB1(ms) 10-1100 ES3>PA(jt) SP9>ES3(jt) EA7>S5(jt) OZ>ES3(jt) LA>ES3(jt) LZ4>S5(jt) 11-1114 LZ4>YO3(jt) 16-1700 F>LA(jt) 18-1900 G>LA(jt) GM>LA(jt) 1952 OH6>LA(jt)

Dec. 5 1826 G>EB1(ms) 1953-9 PA>LA(jt)G>I1(jt) 20-2100 PA>I1(jt) 2132 G>ES3(jt) 22-2300 GM>LA(jt) SP9>PA(jt) \

Dec. 6 1750 SP9>LA(jt) 2313 GD>PA(jt)

Dec. 7 1603 EA6>OZ 1808 PA>LA(jt) 2212 G>LA(jt) 2307 SP9>LA(jt)

Dec. 8 1322 EA7>EB1(ms) 16-1700 I0>I4 I4>I2 17-1800 IW3FZQ>I4 18-1900 OH0>OZ S5>I2 S5>PA(jt) S5>OZ(jt)SM7>OZ SP9>PA(jt) LA>DL 19-2000 OH0>SM1 SM3>OZ(jt) SM3>SM0 S5>OZ(jt) G>LA(jt) SP9>LA(jt) G>OZ 20-2100 OH8>OZ(jt) OH6>LA(jt) PA>OH6(jt) OH0>S5 OH7>PA(jt) 21-2200 OH7>OZ(jt) OH6>OZ(jt) SM7>S5 SM6>S5 OZ>SM0(jt) G>OZ S5>I2

Dec. 9 1448 G>EB1(ms) 1532 G>EB1(ms) 1648 OH7>LA(jt) 17-1800 OH8>LA(jt) SM0>LA(jt) OH6>LA(jt) OH6>SM0(jt) LA>ON(jt) SM3>ON(jt) 20-2100 GM>SP9(jt) 2130 PA>EB1(ms) 2239 PA>EB1(ms) 2314 GM>PA(jt)

Dec. 10 0817-31 PA>LA(jt) G>LA(jt) 0940-50 LZ4>PA(jt) LZ4>EB1(ms) 11-1200 G>LA(jt) PA>LA(jt) G>SM0(jt) 1254 GW>EB1(ms) 1451 SP9>ON(jt) 1521 G>EB1(ms) 1646 G>EB1(ms) 18-1900 G>EB1(ms) PA>OH6(ms)

Dec. 11 08-0900 HB9SIX>DL S5>PA(jt) G>S5(jt) S5>PA(jt) 10-1100 G>EB1(ms) 1107 PA>EB1(ms) 1325-8 LX0SIX>DL HB9SIX>DL 1404 S5>EB1(ms) 1653 EA7>EB1(jt) aurora 1946 SP9>PA(jt)

Dec. 12 0857 F>EB1(ms) 1015-6 GD>EB1(ms) OE5>EB1(ms) 1217 G>PA(ms) 1613 G>F(jt) 1846 I3>PA(jt) 1909-19 I3>LX(jt) ON>I3(jt) 2055-7 LY>OK1(jt) SP9>LA(jt) 21-2200 SP9>OZ(ms) LZ4>LY(jt) SP9>I1(jt) PA>EB1(ms) I4>PA(jt) 22-2300 EA7>EA9(jt) OH7>LY(jt) LA>PA(jt) 9A>LY(jt) OH7>OZ(jt) PA>EB1(ms) 23-2400 LY>S5(jt) PA>LA(jt) SP9>I4(jt) GM>EB1(ms) GM>S9(jt)

Dec. 13 0943 OK1>EB1(ms) 1123 EA7>EB1(jt) 1350 LA>F(jt) 1552 SP9>S5(jt) 1630 SP9>F(jt) S5>SP6(t) 1744 LZ4>PA(jt) 18-1900 G>I4(jt) LZ4>PA(jt) 19-2000 PA>F(jt) I4>F(jt) SP9>I1(jt) 20-2100 G>I4 S5>LY(jt) PA(I4(jt) OZ>SQ6(jt) 21-2200 LZ4>SM5(jt) LY>OH6(jt) PA>EB!(MS) S5>OZ(JT) OK1>SM5(jt) 22-2300 Z3>S5(ms) OZ>LA(jt) EB1>ON(jt) 23-2400 PA>S5 S5>EB1(ms) CT>EB1(ms) S5>OK1(jt) G>ON I1>OK2(jt)

Dec. 14 06-0700 LA>SM5(jt) G>SM5(jt) 0740 SP9>OZ(jt) G>SP9(jt) EA7>EB1(ms) 08-0900 PA>EB1(ms) OZ>EB1(ms) GW>EB1(ms) 09-1000 LZ4>OZ(jt) 1033 G>I4(ms) 1257 EB7>EA9(jt)1550 9A>LA 16-1700 9A>F(jt) LZ4>PA,F(jt) 17-1800 S5>F(jt) CT>PA(jt) 18-1900 OH6>LA(jt) LZ4>PA(jt) G>LA(jt) LZ4>I4(jt) 20-2100 PA>LA(jt) SP9>LA(jt) 21-2200 SP9>LA(jt) 22-2300 PA>EB1(ms) PA>LA(jt) PA>EB1(ms) GM>LA(jt) 23-2400 SP9>LA(jt) OK2>PA(jt)

Dec. 15 0009 OK1>LA(jt) 09-1000 F>EB1(ms) G>EB1(ms) 1301 PA>LA(ms) 1800 SP9>LY(jt) 20-2100 GW>LA(jt) PA>LA(jt) I5>PA(jt) 22-2300 G>ES3(jt) SP9>PA(jt) G>OE5(jt) 2327 OE5>PA(jt)

Dec. 16 07-0800 G>OZ(jt) LA>OZ(jt) 08-0900 F>EB1(ms) 0926 S5>LA(jt) 1112 OY6SMC>DL 1703 G>LA(jt) 18-1900 SP9>ON(jt) SP9>PA(jt) 20-2100 PA>LA(jt) 2146 OZ>OE5(ms) 2210 OH7>OZ(jt)

Dec. 17 09-1000 G>LA(jt) LZ4>S5(jt) G>EB1(ms) 1649 F>LA(jt) 1958 OH6>LA(jt) 20-2100 PA>EB1(ms) OH6>PA(jt)

Dec. 18 08-0900 OK1>F(jt) G>LA(jt) OK1>LA(jt) 09-1000 G>EB1(ms) SP9>ON(ms) G>ON 11-1200 EA6>EB1(ms) S5>DL(t) 1243 G>LA(jt) 13-1400 G>EB1(ms) G>S5(jt) S5>EB1(ms) I3>EB1(ms) 1843 ZL3NW>ON4IQ(eme) 2047 GM>OZ(jt) 21-2200 G>LA(jt) SP9>LA(jt)

Dec. 19 16-1700 OE5>F(jt) OK2>F(jt) OZ>F(jt) 1818 SM3>PA(jt) 2328 GM>LA(jt)

Dec. 20 0010 SP9>LY(jt) 1943 PA>S5(jt) 2025 LA>ES3(jt)

Dec. 21 1238 GB3LER>EI 14-1500 G>SP9(jt) SM3>SP9(jt) 2132 PA>LA(jt) 2207 G>LA(jt)

Dec. 22 07-0800 SP9>OZ(jt) 0946 GM>SP9(jt) 1549 G>F(jt) 16-1700 GW>OZ(jt) 1720 GB3MCB>CN 1753 PA>S5(jt) 18-1900 G>OZ(jt) F>S5(jt) EA7>CN OZ>S5(jt) 1951 OZ>SP9(jt) 2031 LX0SIX>ON

Dec. 23 0834 HB>SP9(jt) 0956 LA>SP9(jt) 10-1100 LA>I3(jt) HB>OZ(jt) 13-1400 PI7SIX>DL(t)LX0SIX>L1648 SM3>LA(jt) 1936 PA>S5(jt) 21-2200 G>OZ(jt) OH6>LA(jt)

Dec. 24 0634 SM6>SP9(jt) 07-0800 GW>S5(jt) PA>S5(jt) 08-0900 SP9>OK1(jt) PA>EB1(ms) 0948 G>S5(jt) 11-1200 HB9SIX>DL G>LA(jt) 13-1400 G>OH6(jt) OZ>F(jt) 15-1600 G>S5(jt)

Dec. 25 0756 F>PA(jt) 08-0900 I0>PA(jt) G>S5(jt) OH6>LA(jt) 09-1000 OZ>PA(jt) OH6>OZ(jt) 1047 I3>ON(jt) 11-1200 EA7>CN G>EB1(ms)1351 G>EB1(ms) 21-2200 OH7>PA(jt) OZ>LA(jt) 22-2300 OH7>LA(jt) SP9>LA(jt)

Dec. 26 0741 SM3>SP9(jt) 0849-54 OH6>SP9(jt) PA>OH6(jt) PA>EB1(ms) SM3>OZ(jt) 09-1000 PA>OZ(jt) S5>PA(jt) OE5>F(jt) SM3>LA(jt) 10-1100 G>SP9(ms) PA>EB1(ms) SP9>LA(jt) G>LA(jt) G>S5(jt) 11-1200 EA7>PA(jt) G>S5(jt) EA7>EA1(ms) 12-1300 G>EB1(ms) 19-2000 EA7>EB1(ms) OZ>SP9(jt) 20-2100 ES3>LA(jt) SP9>ES3(jt) G>EB1(ms)

Dec. 27 0922 HB>OE5(t/ms) 1050 SP9>LA(jt) 1100 G>EB1(ms) 1220 OZ>LA(t) 14-1500 S5>F(jt) OZ>EB1(ms) GW>EB1(ms) aurora 18-1900 PA>OH1(jt) EB1>ON(ms) ON>CN(jt) 1946 SP9>PA(jt) 2122 OZ>LA(jt)

Dec. 28 0754 F>9A9jt) 09-1000 GW<SP9(jt) G>I1(jt) F>9A(jt) G>9A(jt) 10-100 G>9A(jt) SP9>PA(jt) F>EB1(ms) F>SP9(jt) PA>SP9(jt) 1231 EA7>EB1(ms) 1347 S5>EB1(ms) G>EB1(ms) 16-1700 G>LA(jt) 17-1800 SP9>LA(jt) F>CN(jt) 18-1900 CN>ON(jt) IS0>ON(iono) 20-2100 IS0>I0(jt) 2107 SM0>LA(ms)

Dec. 29 10-1100 EA7>IS0(jt) LZ2CM>SM0 1122-1200 OH5RAC>I3,I4(Es) OH3>DL(Es) ES1>DL UR5G>PA YO3KWJ,YO2>OZ 1251 UT5G>SP2 1304 LA>SP9(jt) 1442 UT5G>OZ 1450-48.2tv(DL)>OH2(Es) 1500 100.9MHzFM(I)>OH2(Es?) 15-1600 UT5G>SM5 SM5>SM0 YO3KWJ>OZ 16-1700 UT5G>OZ,DL 17-!800 ON>F 18-1900 ON>CN(jt) 21-2200 G<LA(jt) PA>LA(jt) IS0>PA 22-2300 IS0>OE5(ms) IS0>OZ(ms) 2303 G>OE5(jt)

Dec. 30 1348 I5>PA(jt) 20-2100 G>LA(jt) ES3>LA(jt) 21-2200 G>LA(jt) 22-2300 IS0>PA(jt) OH6>LA(jt) IS0>OZ(ms) 23-2400 G>SM0(jt)

Dec. 31 0722 ON>OZ(jt) 08-0900 SP9>PA 09-1000 EA7>F(jt) 10-1100 LA>F(jt) F>PA(jt) PA>S5(jt) OE5>9A(jt) 11-1200 9A>PA(jt) G>9A(jt) 12-1300 G>LA(jt) 13-1400 G>LA(jt) SM3>LA(jt) 15-1600 SP9>PA(jt) G>S5(jt) OZ>I5(jt) 16-1700 G>I5(jt) G>S5(jt) I5>SP9(jt) EA7>CN 20-2100 JW5SIX>OH3,LA

50 MHz PROPAGATION FOR DECEMBER 2005 FROM SV1DH

1. Data for all days (31)
2. Relatively good days: none
3. 48MHz AF video (3C + 9L) None
4. 55MHz AF video (5N): None

5. Opening to SP on 2(E)

6. Special events:
   1 (3C+4M flares; 0252 M6.5+1012 M7.8 + 2030 M1.0 + 2119 M2.0)
   11 0800-0900 foF2>10, max 10.4 MUF=40.5 at 0815
   12 0945-1000 foF2 >10, max 10.8 MUF=40.8 at 0945

8. DXCC entities heard/worked during December 2005: 1 on 1 cont.
9. DXCC entities heard/worked on 2 Dec. 1 on 1 cont.

73 COSTAS

The Americas

Auroral-Related Modes

Dec. 2 0541 VE4ARM>W9(EN44 51a)

Other Modes

It was again more fruitful month in the Western Hemisphere than in Europe. To the west, there were only a handful of ms/jt contacts (though some may have been undeclared) but, at times aided by contest activity, there were one or two quite good days with strong sporadic-E, notably the 4th, 5th and 25th, as well as others with the occasional solid contact at a distant. (There was a report of VK9<>PT7 on the 8th but I am putting that in the would-be-nice-if-it-had-really-happened category.

However, the main feature again appeared to be attributable to transequatorial propagation, which was reported between South America and a variety of Caribbean islands on no fewer than 19 days. This compares with 14 such days in December 2004. (In addition, there were two days - indicated by the ampersand in the box below - when there were no Caribbean<>South America contacts but LU or PY worked into YV, most likely by tep. On the other hand, unlike December 2004, there were no reports of openings to Africa and none of contacts between the Caribbean and the US. (C6 and VP9 were worked from the States but are outside the Caribbean.)

Carribean<>South America

	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
	+	+	&	+	+		+		+	+	+	+	&	+		+	+		+	+		+						+	+	+	+

PY	18 days	1(KP4,9Y) 2(FG) 3(YV) 4(FM) 5(FJ,FM) 7(9Y) 9(FM,9Y) 10(FM,9Y) 12(FM) 14(KP4) 16(FJ) 17(FM,V4,9Y) 19(V4,9Y,YV) 20(9Y) 22(9Y,YV) 29(FM) 30(FM,KP4) 31(FM,KP4,9Y)
LU	7 days	3(YV) 5(FJ,FM,YV) 11(FJ) 13(YV) 28(FM) 30(KP4,FM) 31(KP4)
ZP	2 days	5(FM) 9(9Y)

Dec. 1 0310-44 W4>W8 W1>W8(ms) 2050 W3DOG>KP4 23-2400 W4>KP4 PY2PVT>KP4 9Y4AT>PP5JD

Dec. 2 00-0100 FG5GP>PY2SRB,YV4DYJ,PY8ELO YY5YKD>CX4CR KP3>W3 0216 W4>W8 12-1300 C6AFP>W8 WZ8D>W4 1353 W8>W4 17-1800 K0EC>W9 W5RP,NM7D>W3 W0MTK>W9 18-1900 K0UO,W4,W5>W6 K5AB>W0 W4CHA,W7>W5 W7,W5>W0 W4>W4 19-2000 W7,W6>W5 W5RP>W8 K0UO>W6 W7>W0 W5>W4 20-2100 W6>W0,W5 W4,W5>W5 W5>W7 2356 LU5EGY>YV5LIX

Dec. 3 00-0100 PP5AR,LW3EWZ>YV5LIX 0402-55 W6>W7 1247 W8>W4 13-1400 WR9L,W9VW>W1(Es) W4,W9>W1 W9>W2,W4 W1>W8 W8>W4 W0,W5>W2 14-1500 W9>W2,W3 W4,W8,W0>W4 W1>W1,W4 15-1600 W4>W8 16-1700 W4>W1,W4 17-1800 WZ8D,K8PLF,K8UK>W4 W4>W5 W4CHA>W0 18-1900 W0>W0(Es) W0>W5 VE3,W8,W4>W8 19-2000 W9>W4 W8>W8 2204 VE1>W8

Dec. 4 00-0100 VE1,W1,W4>W4 01-0200 K4AHO>W3 W3HH>W3 W4>W4,W5,W0 01-0300 W5>W4,W1 WB5LLI>W3 W4>W9 03-0400 C6AFP,W4CHA,K4AHO>W8 W4>W9 1241-54 W4>W2,W4 1333-53 W1>W4,W9 14-1500 W2>W4,W1 15-1600 4U>W2,W1 VY2>W9,VE3,W8,W3,W4 4U>W1,W2,W5 VE2>W1 W1>W8 16-1700 W1,VE2>W4 W4,W2>W9 4U>W2,W5 VE1>W8 17-1800 W5,W3>W3 VY2,VE2>W4 W4>W9,W0 VE1>W4,W5 W8>W5 W0,W8,W9>VE1 4U>W3 18-1900 W1,W3>W5 4U>W1 W0>W4 19-2000 W0>W9 W6>W6 VE2>W4 4U>W3,W1,W0,W4 W4,W5>W2 20-2100 4U>W3,W9,W2 W2>W4 W4>W1 WA1OJB,VE2RCS>W4 W0>W8 21-2200 W4>VE2,W9 4U>W5 VE9,W1,VE3>W9 VE2YAT,N0LL>W8 22-2300 4U>W2,W9,W0 W4>VE2 W3,W0>W2 W9>W1,VE1,W2 K0KP>W8 K9MU,K0KP>W3 23-2400 W4>W2,VE3,W0 4U>W9,W5,W2 W5>W8,VE3 W8,W9>W4 W0>W2 PY2CDS>FM5JC W3>W5 K0KP>W3,W5

Dec. 5 00-0100 W9,W0>W4 K0KP>W5 W5>W2,W9 FJ5DX>LU6ENC KF4ODI>W0 W3DOG,W8>W5 KD4HLG,K4KWK>W0 YY5LKD>LU6ENC W0>W9,W8 YV5SSB>PY1SX W5>VE3 K0UO>W8 KE4SIX>W5 ZP6CW>FM5JC 01-0200 WB5LLI,W4>W0 W4CHA>W3,W0 W9>W5 LU3HR>FM5JC W3>W8 W9,W1>W5 02-0300 4U>W1,W3,W5 0337 VE6ARC>W5 1655 K0KP>W3 20-2100 W4,W5>W5 2157 W0>W8 22-2300 W4>W8 W5RP>W4 23-2400 W5>W4 FJ5DX>PP5AR PP5AR,PY2LDF>FM5JC W8,K0UO,W5,W6,W7>W5 W5,W6>W4 K6FV>W0 PY1AT>FM5JC

Dec. 6 00-0100 W5>W4,W5,W6 03-0400 W6>W0 0404 W4>W5(t) 1352 W0>W4(sc) 14-1500 W9>VE2,W2 W0>VE1 15-1600 W4,W9>VE1 W9,W0,W4>W2 VE2RCS,WA1OJB,N3LL,K0KP,W3HH/4>W4 W1,W4>W8 WR9L,K9MU>W2 W1>W0,W4 16-1700 W2RTB,VE3>W4 VP9GE>N3DB,W4RVZ W9>W5 17-1800 VE2RCS>W4 1935-48 K0KP>W8(Es) VE4VHF>W8

Dec. 7 0028 YV5LIX>YV1 01-0200 9Y4AT>PY1WX VE2>W1,W2 VE2YAT>W1 VO1,VE2>W3 W3>W8(bs) 0235-51 VE8BY>W3 W8>W8 03-0400 VE4VHF>VE2 14-1500 W1,W3VD,K8UK,VO1ZA>VE1 VE1SMU>W8 VE1>W2,W8 15-1600 W1,W2,W3,W4,W8,W9>VE1 VE1SMU,VO1ZA,VE2MGL>W3 W8,W2,W4>VY2 16-1700 VE1SMU>W3 W4>VY2 VO1>W2 VE1,VE2>W4 KD4NMI>VE2 2219 E1>W2

Dec. 8 0056 VK9AA>PT7BR(!?)

Dec. 9 00-0100 9Y4AT>ZP6CW,PY5IP 0227 W5>W4 1322 VE2>W4 2317 PP5AR>FM5JC

Dec. 10 00-0100 9Y4AT>PY5EW,PP5JD FM5JC>PY1NB 0251 W5>XE1 0518-45 W1,W9>W5 0610 W0>W5 1505 W1>W4 1955 W4>W8 20-2100 WB5LLI>W1(Es) W4,W5>W8 W4>W1,W9 W3HH>W8 21-2200 W4>W2 KF4ODI>W3 W1>W1 XQ3SIX>CX2AQ 22-2300 W1>W7(eme) G>W7(eme) K0KP>W4 23-2400 W0>W1 VE4VHF,K0GUV>W3 W5>W5

Dec. 11 00-0100 CE3RY>LU6ENC W1>W9 FJ5DX>LU6ENC 02-0300 W1>W9(jt) W4,W2>W2 W1>W4,W2 KF4ODI>W4 VE2>VE2 03-0400 WA1OJB,W8>W4 VE4SPT>W9(sc) 05-0600 W9,W0>W4 06-0700 N0LL,WB0RMO,K0GUV>W3 07-0800 K0KP>W3 N3LL,W3DOG,W3VD>W9 K0GUV,K0KP>W3 W3DOG>W0(ES) VE4VHF>W3 W3VD>W0 1353-9 4U>W2 1523 W1>W8(sc) 1642 PY1>PY2(jt) 22-2300 W4>W4 23-2400 W0>W5 VE1>W3

Dec. 12 00-0100 W5>W5 VE1>W3,W8,W2,W4(Es) 01-0200 VE1>W8,W3 VE3UBL>W1(Es) WA1OJB>VE3 VE2>W1,W3 W8>W8 VA2MGL>W3 VE9>W3 VE1SMU>W8 02-0300 VE9,VE1,VO1>W3 W6,W7>W5 VE1>W8,W0 03-0400 W1>W0,W9 W8>VE2 W6>W7(sc) 1300 W8>W1 1418 W5>W4 2040 W0>W4 22-2300 KF4ODI>W0 23-2400 W4>W4,W5 PP5BJ,PR7AR>FM5JC

Dec. 13 00-0100 W7>W5 01-0200 W7>W5 W3>W2 LW3EX>YV5LIX W9>W5 W4>W8 02-0300 W1,K5AB>W0 W5,W7>W5 W4>W8 0359 W9>W3 04-0500 K0KP>W3(sc) VE3,W1>W8 W4>W4 W4>W8(ms) 23-2400 LU8WAT>CX4CR PY3>PY2(jt)

Dec. 14 01-0200 PY1RO>WP3UX(jt) W8>W2(sc) 0257 W9>W4 1412 PY1>PY2(ms) 21-2200 4U>W1,W2 23-2400 W4>W5

Dec. 15 no reports

Dec. 16 0335 N0LL>W8(ms) 16-1700 N6NB,K6FV,W7>W6 2223 PT9>PY2 23-2400 FJ5DX>PP5AR,PP5JD W0>W9

Dec 17 00-0100 V44KAI>PP5JD 9Y4AT>PP5BJ 0219 W0>W4 1309 W4>W4 1604 W8>W5 2244 W3>W3 23-2400 PY2HN>FM5JC

Dec. 18 0109 PJ2/WB9Z>KB9ECI 0303-12 W1>W8 W8>W4 0432 W1>W8(bs/ms) 14-1500 W4>W4(t) W4,W1>W8 W0>W8(bs)

Dec. 19 00-0100 9Y4AT,YV4AB>PY2SRB 01-0200 V44KAI>PY2SRB W3>W5 02-0300 W3,W4,W0>W8

Dec. 20 00-0100 9Y4AT>PP5JD LW3EX>PP5AR 0213 W8>W4

Dec. 21 0141 W4>W5 1924 W5>W5,W0 20-2100 W4,W5>W5 21-2200 W4>W5 22-2300 W4,W8,W9>W5 WB5LLI>W3 K0UO>W4 23-2400 W5,W4,W0>W4

Dec. 22 00-0100 W4,W5,W2>W5 9Y4AT>PP5JD XE3>W4 W4>W0 01-0200 W4,W8,W0>W5 FY7THF,YV4AB>PY2SRB W2>W0 W4>W8 N0LL>W4 02-0300 W5>W9 WB5LLI>W8 W2,W4,W9,W7,W0,W6>W5 K0UO>W4 03-0400 W6,W9>W5 W4>W6,W0 W5>W8,W3 W7>W4,W5,W9 WR9L>W4 04-0500 W7,W0,W5>W5 W5>W2 W0>W4 W7>W8 W7RV,W0IJR>W5 0518 W7>W0 0620 W6>W5 0747 W7>W5 0807 W6>W5 1308 W1>W8(ms)2319 W4>W4

Dec. 23 W4>W2,VE3 01-0200 W4>VE3 W3VD,W3DOG,KD4NMI>W4 W4CHA,W3HH,K4AHO>W3 W4>W8 C6AFP>WZ8D W4>W1 W8>W2 02-0300 W1>W4 W8>W3,W1 W3,W2>W4 W9>W9 W2>W8(jt) 04-0500 W4CHA,W5>W5 1319 W4>W4 14-1500 W4,W8>W4 W8>W8 1815 W4>W4 2339 K5AB>W5

Dec. 24 01-0200 W4>W4,W8 02-0300 VE3UBL,VE2RCS,W1>VO1 W7RV>W5 W1>W8(ms) W0IJR>W5 03-0400 W1,VE3UBL>VO1 W5,XE2>W8 W5>W5,W4 K0KP>W3 W5RP>W0 04-0500 W0,W5>W5 W7>VE7 N0LL>W4 05-0600 W0>W5 13-1400 W8>W4 VY2>W8,VE3 14-1500 WR9L,W8,W1,W2>VY2 VE2>W8 VE1,VY2>W9 VE2RCS,W5>W4 VE3>VE1 15-1600 VY2>W4 W1>W9 VE9>W8 16-1700 W1>W9 17-1800 W4>W5 W6>W7

Dec. 25 14-1500 W0>W2,W1 W5>VE2 W2>W9 WA1OJB>W9 W5HN,K0GUV>W3 W8>W4 W5>W1 VE4VHF,K9MU,K0KP>W3 15-1600 WR9L>W4 VE4VHF,W3>W3 W0,W5>W1 W0,W4>W2 W5,W8>W4 16-1700 W5>W1 W4>W9,W5 K0UO,WB5LLI>W3 W5>W2 W0>W5,W4 17-1800 W5>W2,W4,W3 W8,W3VD>W5 W8,W9>W4 W4>W0 W5HN>W3 W0>W3 18-1900 W9,W0,W4>W4 WB5LLI,W8,W7>W9 W5>W0,W4 19-2000 VE4,W4>W0 W5>W3 W8>W5 W5RP>W4 20-2100 W5>W4 K5AB>W3,W4 21-2200 W1>W1 W5>W8 W4>W7 22-2300 W5>W8

Dec. 26 0035 W9>W9 01-0200 VO1>W1 W3DOG>VO1

Dec 26 13-1400 W8>W4 W4>W1 115-1600 VE1SMU>W8 W1>W1 16-1700 W9>VE2 W7>W9 17-1800 W7>W9 20-2100 W6>W7,W6 22-2300 W7>W7 K9MU>VE6 N6NB>W7 W0>VE6 23-2400 W6>VE6,W7 VE6EMU,W7>W6 W0MTK>W7

Dec. 27 00-0100 W7>W6,W7 NM7D>W7 01-0200 K6FV>VE6 W7>W5,W6 0306 VE1SMU>W8 W0>W6,W9 W4>W4,W8 04-0500 W0,W7>W3 WR9L>W3 W2>W5 W4>VE2 05-0600 W9>W0 W4CHA,KD4HLG,W3>W9 W0,W5>W4 W4>W8 06-0700 KD4HLG,KE4SIX,WB5LLI>W8 W0,W9>W4 W4,W3VD,W3DOG,W8>W5 07-0800 WB5LLI,W4>W8 W5HN>W3 1236 W4>W4,W8 1451 VE4SPT>VE3 20-2100 VE1>W1 22-2300 VE1>W4,W8,W9 aurora 23-2400 W4>W4

Dec. 28 0126 W7>W0 0346 W0>W3 04-0500 WR9L>W2,W3 WB0RMO>W3 05-0600 W9,W0>W1 VE3>W9 12-1300 W4>W4(sc) 1452 W4>W4(t) 23-2400 LW3EX,LU8EMH,LU9EFG>FM5JC

Dec. 29 00-0100 PY3OL>FM5JC 02-0300 W0,W9,W8>VE9 03-0400 W9>VE9 W4>VE2 0318 WR9L>W2 W5>W2 13-1400 W4>W0,W8

Dec. 30 00-0100 PY4HGM,LW3EX>FM5JC LU7FA>YV5LIX 01-0200 LU7FA,PR8ZX>WP3UX 1236 W4>W4 13-1400 W3>W4 W4>W1(sc) 1438 W4>W8 15-1600 W4>W9 W1,W8>W4 1935 WR9L>W2 20-2100 K0KP,WR9L,VE3>W2 21-2200 WZ8D/4>W3 K9MU>W3

Dec. 31 00-0100 PY3DU,LU8EMH,LW3EX>FM5JC 01-0200 PY2RO>FM5JC,WP3UX 9Y4AT>PY2RO 0220 W4>W8 0839 W5>W5 12-1300 W4>W4(t) W4>W4(sc) 13-1400 W8>W4 W0>W4(sc) 1453 W3>W4 15-1600 W4,W5>W4 W9>W1(ms) 1847 W9>W2 N6NB>W6 20-2100 W9>W5 21-2200 W1>W1 2324 W8>W4

Asia/Pacific

Japan

An unusual month in that all reported contacts outside Japan were with VK. These include 2 days with VK2, 3 with VK3, 3 with VK4, 1 with VK5, VK7 and VK8. Rather unusually none with VK6 on any of the 5 days when there were openings in that direction.

6m DX Results in JA December 2005 from JA1VOK

DATE	TIME(UTC)	STATIONS
Dec. 1	0318-0400	VK3VG, 3XQ, 3AMK, 3DUT, 7JG
2	0425-0500	VK3XQ, 3DUT, 4WS, 4ZQ, 4BLK, 4WTN, 4RGG/b, 7RST/b
4	0530-0550	VK4WTN, 5UBC
18	0359-0500	VK2APG, 3BHO, 2BXT, 2FHN, 2RHV/b, 4DB, 4ABP/b, 4RGG./b
30	0610-0730	VK2BHO, 2RHV/b, 8RAS/b

Elsewhere

A small increase in reports, probably in the main reflecting the sporadic-E season down-under

Dec. 11 0613 49750(UA)>VK3

Dec. 27 0630 ZL4>VK2

Dec. 28 0315 VK4>ZL2 0523 VK2>ZL2

Dec. 29 0338 VK4>ZL2

Dec. 30 VK4>VK3(59 Auroral-E?!) 23-2400 ZL3SIX>VK3 ZL3>VK7

Beacon News and 28 MHz Worldwide

Compilation and Commentary by G3USF

Beacon News

Due to production delays with the main body of the Report most of the listings below were reported after the nominal publication date of this issue.)

10125 KL1IF	part-time beacon in Springfield Mo (EM37IE) with 10 watts to 1/4 GP. See http://fl1if.hopto.org/mybeacon.htm (May 2006)
10140.0-10140.1	DL6NL reports that some 80 QRPP/QRSS beacons operate here, mostly at weekends. Not audible; resolution requires 'QRSS Viewer' (eg Argo, Spectran, Speclab) dl6nl@aol.com
14318 PA1SBB.	Beacon QRT (PA31BB)
28192 AL2P	reported from CO45 (N7DB June 2006)
28202 N6DXX	Sacramento CA runs 4 watts to 80m horizontal loop (N6DXX May 2006)
28204.5 K3WJR	Wattsburg PA (FN02CA) running 850mw to Vertical (May 2006)
28207 OH5JJL	in KP21FI in irregular operation, running 5 watts to 2-el Quad QTF 220. www.qrz.com/oh5jjl (April 2006)
28230 IK0ZRR	Experimental from Rome with 5 watts to Vertical NOT 24/7. Will shortly move to new location (I0KNQ May)
28238 K5UNY	now using L antenna (K5UNY April)
28241.5 F5ZUU	new beacon from Malataverne (JN24IL) runs 5 watts to 1/2 vertical with a1a 24/7 (F8AOP May 2006)
28248.8 ER1TEN	reported here; no further information (May 2005)
28249.8 EA3TEN	new beacon in Lleida JN01SU runs 10 watts to 5/8 omni with 24/7 A1a (April 2006)
28250 LZ4IP	reported here by DL8AAM. (June 2006)
28250 EA8TEN	reported here. Mistaken for EA3TEN? (May 2006).
28255.6 N8YEL	Zeeland MI runs 3 watts to vertical (K0HA May 2006)
28261 KP3FT	temporarily non-operational (KP3FT)
28298 DA5MMB	resumed transmissions on new frequency, still multimode (DK4VW, April)
28299 K7EK	Spanaway WA (CN87TB) running 25 watts to 1/2 vertical replaces W7NTF e-mail K7EK at K7ET.net (K7EK May 2006)
28322+/-	I1DFS new beacon in JN54AC, runs 100mw to dipole QRSS. There are currently three Italian beacons on or around this frequency. They are experimental and part of a project to run as many QRS/QRPP beacons in Italy as possible with the aim of providing cover for most of the country 24/7 for experiments with Argo and similar software. TXs are homebrew and send cw ID + QRSS codeletter for identification. Transmissions are not synchronised but operating frequencies are kept apart so that signals do not overlap. To visualise the beacons run audio spectrum analysis software on 28321.9 with 600Hz bandwidth. Current stations are IK1ZYW 28321.93 JN35TC (Torino), IS0GSR 28322.1 JM49JN Nr Cagliari, and I1DFS 28322.5 JN54AC Nr La Spezia (IK1ZYW 2006)
50000 IQ1SP	frequency correction
50050 ZS6DN	is QRT (ZS6PHD)
50051 AL7QY	Nome Alaska (AP74GM) runs 45 watts of a1a to halo 24/7 (May 2006)
50052 EI0SIX	operational from IN63NF with 25 watts omnidirectional (EI6IX May 2006)
50060 WB0RMO	reported not operational (K0HA May 2006)
50062 K8JA	returned to operation (K8JA)

50068 N6NB reported from CM05 (several, Feb.)
50069 K4IDC reported here with 350mw omnidirectional loop (K0HA May 2006)
50073 P43JB reported active in FK42 (VE9AA, FM5JC, May 2006)
50075 WP4MZA running 5 watts. No further details (April)
50080 S9SIX in JJ30HE reported here (TR8CA, May 006)
50083 DF0ANN testing with 200mw from Moritzberg Hill (JN59PL) is one of three frequency-sharing beacons authorised by the German administration (DF5IK, April)

28 MHz Worldwide

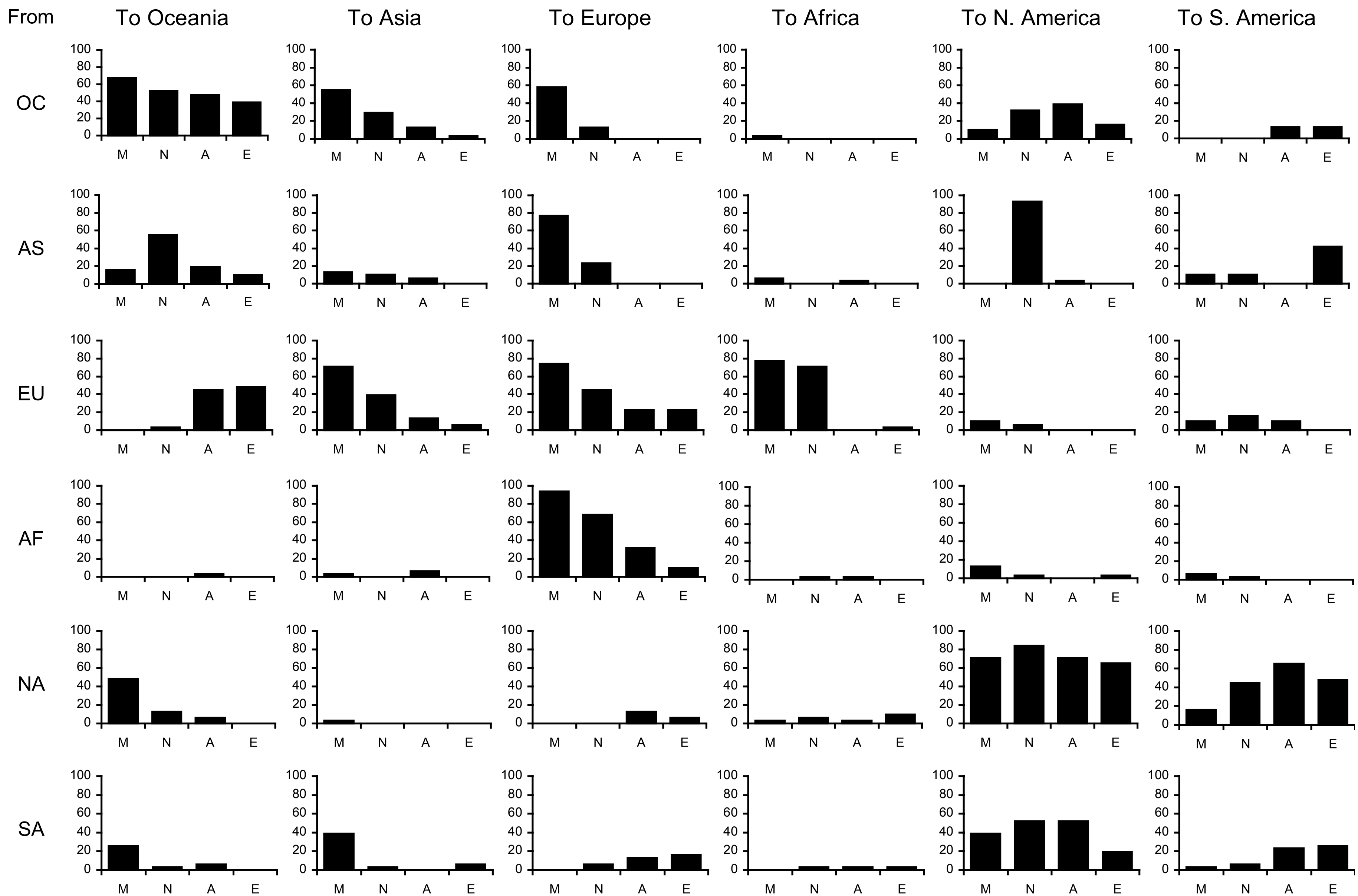
Over the past twelve months the deterioration of Ten-metre propagation has been all too apparent over almost all paths. Yet there were bright spots. The most reliable paths were between Europe and Africa, where propagation was reported every day except the 20th, including 94 per cent reliability in the morning period. Openings with Asia (preponderantly the Middle East) on 24 days, almost entirely in the morning period. Curiously, the 16th to the 21st were blank throughout the day. Among the more interesting contacts were DL2ARD and DK0MW with JH7RTQ at 0847 on the 10th, during the contest, and said to be long path. Earlier that day, at 0452, JH4UTP worked UA4ARL.

Even Oceania produced reports on eighteen days (mainly into Central Europe - but note the VK6 beacon loggings reported earlier by G0AEV), again almost entirely before 1130 local time. DL0IGI was heard in New Zealand on the 2nd - but no QSOs were 'spotted'. Propagation within Europe, by a mix of F2 between the extremities, backscatter, and some Es (particularly on the evening of the 2nd), is known to have occurred on all days except the 12th, 18th, 19th, 21st and 31st. There were no auroral reports on this band this month. South America was well down on December 2004, being reported on only 6 days (4,5,10,11,28 and 29). North America was heard in Europe on four days (10, 11, 28 and 31), although only one of these events encompassed the UK. The opening on the 31st was the most interesting; OH6NIO was reported by K1TTT at 2203 on the 11th, SM3PGZ worked AJ3G at 2213 and a contact between OH5UFO and K2MUB was recorded at 2214.

Contacts between stations in North and/or Central America and the Caribbean occurred on 27 days with a fairly broad consistency across the four periods of the day. Among the more interesting reports were a couple of late openings: W4MYA<>W8FJ at 0538 on the 10th, and an opening involving KAS1LMR<>KB0VVT, KT0K<>W2MW and KC4WQ, W3VD and N3UMH received by K0KP and AJ3G<>K5PQ between 0621 and 0733 on the 11th - after midnight in their local time. South America paths were noticeably down on 2004 but are known to have been open at some time on 25 days. Oceania was worked from the States on 16 days but Africa (4 days) and Asia (1 day) featured very poorly. Among the scant handful of Africa contacts were FR1AN into KS4V at 1421 on the 28th and W2KV at 1439; AD5J worked 3B8CF at 0206 on the 29th. So, even with solar minimum looming 28MHz can still produce the occasional unexpected contact. One other worth mentioning is JA1DDH with AY8A at 0503 on the 11th. While LU is not uncommonly heard in Japan during the Argentine evening this contact was exceptionally late. Here, as elsewhere, contests provided the extra incentive to search in directions and at times where normally few would trouble to venture. They deserved their reward!

Finally, better-than-usual results within Oceania owe much to an increase in reporting during their summer sporadic-E season. There were also more reports of Japanese beacons into Australia than we usually receive - essentially an improvement in activity rather than a real improvement in propagation against the trend.

28 MHz Worldwide - December 2005



Time bands: M=Morning, N=Noon, A=Afternoon, E=Evening - used for the "To" continent

Analysis of 14 MHz beacon reports from the UK

Reports of beacons on 14.1 MHz for December 2005 from G2AHU, G3IMW, G3USF, G4JCC and G0AEV. Compilation by G0AEV.

December 2005 was only the second full month when 6&10 listeners have been monitoring the NCDXF/IARU beacons on 14.1 MHz, and it is too early to make any sensible comments on propagation trends. There appears to have been little difference in 20m conditions in December compared to November. The beacons most usually heard (4X6TU, OH2B, CS3B - all by single hop F2) were reported on all days, and with 100% reliability (or almost so) in the 09z and 12z time periods. 4U1UN, YV6B, ZL6B and RR9O also returned good results being reported with at least 50% reliability in one or more 3 hour time periods.

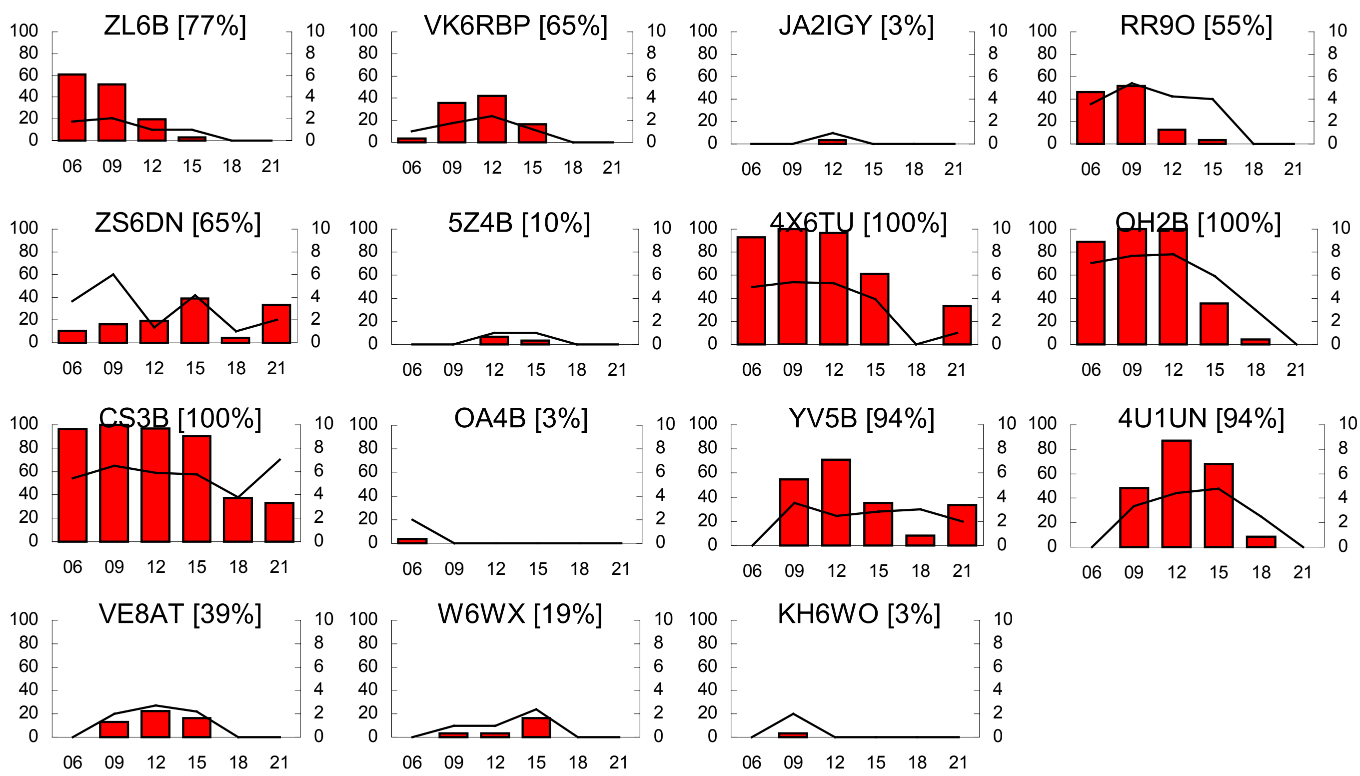
As suggested last month, a broken-up transmission from 5Z4B might explain the relatively poor showing of this beacon. OA4B is listed as QRT but there was one report for this beacon again this month. It may be that the beacon is occasionally operational or the report may have been in error: please take extra care when logging this beacon! LU4AA is certainly off-air but 4S7B (not heard by any of our listeners this time) should be on air.

Beacon graphs legend

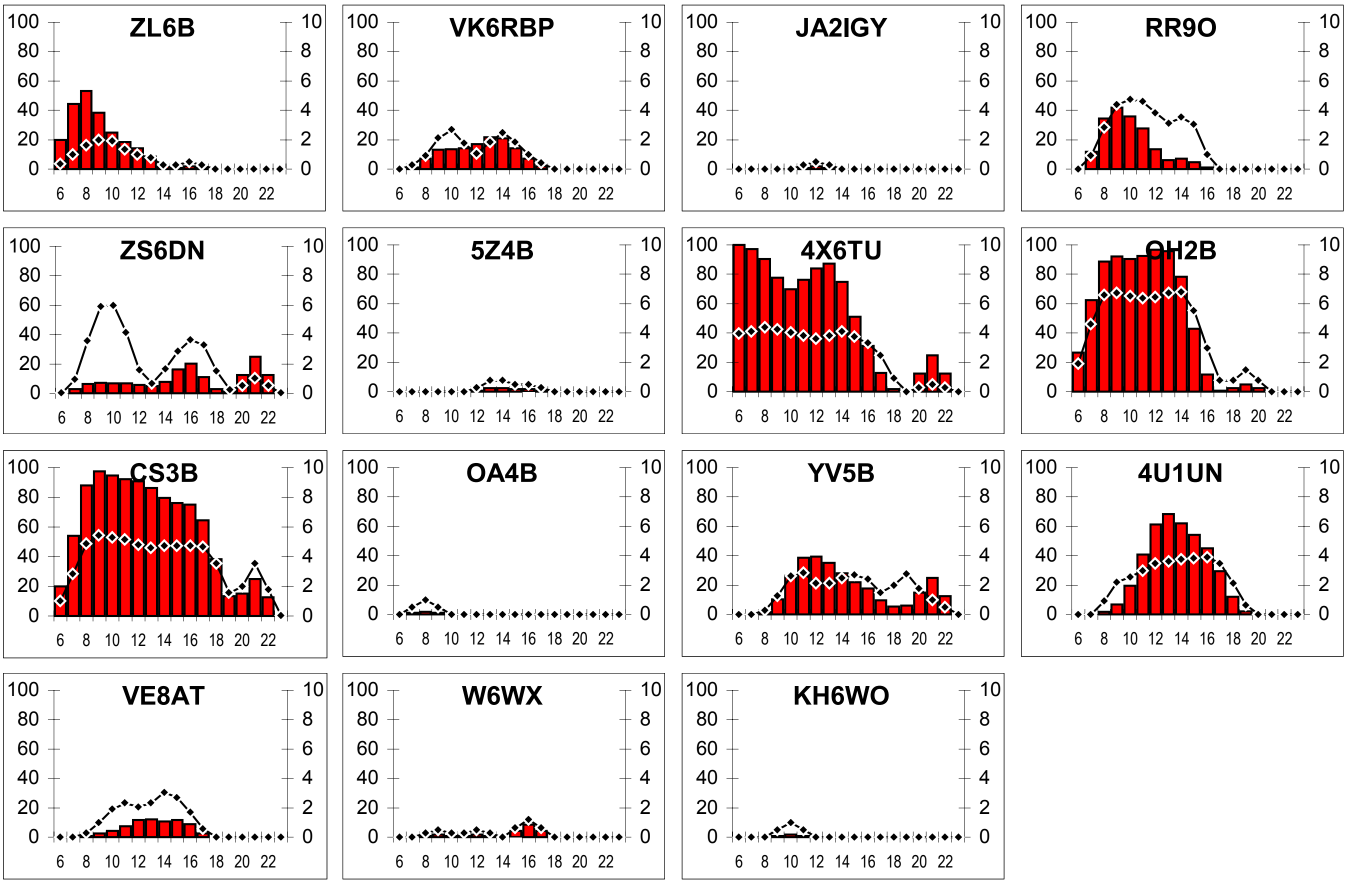
Legend for all beacon graphs in this Section: - graph bars (left Y-axis): beacon reliability as the percentage of days a beacon was heard by any UK observer within each time band. Graph lines (right Y-axis): Signal Strength as the average of the daily maximum Signal reported by any observer in each time band. Time band codes (X-axis): 6=0600-0900, 9=0900-1200, 12=1200-1500, etc. Callsigns are followed by daily reliability figures, the percentage of days per month when the beacon was reported.

Forms for reporting beacons on paper are at http://www.6and10.org.uk/beacon_forms.htm.

Beacon graphs



Our 5 regular listeners have managed to cover most of 3 hour monitoring periods on most days. In fact the monitoring coverage has been good enough to allow compilation of the data at 1-hour intervals as well as the usual 3-hour time bands. The following graphs reproduce the same data as shown on the previous page but at one-hour intervals. These graphs employ a form of moving average smoothing (over a 3 hour period) but in other respects they are generated in the same way the other beacon graphs in this Report. Average signal strength has a different line style so that the line can be seen against the reliability bars.



The one-hour data allow better resolution of times of opening and closing of propagation and of peak reliability. For example, ZL6B is most reliable in the 08z hour (i.e. 0800-0859z) and 4U1UN in the 13z hour. Signal strength peaks can only be relied upon for time periods showing high reliability. Where signal reliability is low the signal strength data are based on few observations and the signal strength can be biased by the measurements of individual reporters. The graph of ZS6DN is a case in point. The significant fluctuations in average signal strength are due to observer measurement effects not propagation.

It is unfortunate that insufficient data are being collected for the later evening period (from 21z). This is not much of a problem at the moment (winter season with the current low levels of solar activity) as propagation is often absent during from mid evening onwards. There was some propagation after 21z but because the total number of observations made in this period was small (and most of those from one very intermittent observer, G0AEV!) the results of this late evening propagation appear as unconnected peaks as seen in the graphs of ZS6DN, 4X6TU and YV5B. The true distribution at these times should probably be a smooth tailing off to zero. A similar, though lesser, problem occurs for the early morning period. This is seen on 4X6TU where the 06z period results are overstated because of a relatively small number of monitoring observations at this time.