Future Direction for the Six and Ten Report

From June 2003 there will be changes in the way the Six and Ten Report is produced and delivered. These changes will affect everyone. Please take note.

Since taking over editing and production of the Six and Ten Report from G2AHU and G2BDV in June 1995 we (G3USF and G0AEV) have produced over 90 issues of the Report. All of these have been printed, copied, folded, stapled together and mailed by G3USF using office facilities at the University of Keele. Unfortunately, from September 2003 G3USF's access to these facilities will be greatly reduced and as a consequence it will no longer be possible for us to prepare large numbers of printed Reports (or to produce them as cheaply).

From June 2003 - the start of the next subscription year - we intend introducing a web-based version of the Six and Ten Report. We hope that readers with Internet access will download this free version in preference to receiving a mailed paper copy by subscription. We recognise that there is a sizeable minority of subscribers who do not have access to the Internet and we are committed to serving this group by continuing to provide a limited number of paper copies delivered by post.

The web-based version of our newsletter will be available from a dedicated web site in Adobe Acrobat format. The Acrobat files can be downloaded just like a web page and viewed or printed using the free (and freely available) Acrobat reader program. The Six and Ten Report in Acrobat format will look exactly as it does now, with the same mix of text, graphs and tables (though we will be able to add refinements such as colour and hypertext links).

A significant advantage of this move will be the potential to expand the readership of the Report. As there will be no charge to read, download or print the web-based copies of the Reports, we expect to be able to introduce our studies into the propagation we experience on the Six and Ten metres bands to a much wider audience. In place of the current subscription process, readers of the Internet version will be encouraged to register with us so that we can provide additional services such as an emailed notification when Reports have been uploaded.

Anyone will be able to print their own copy of the Report from the Acrobat document if they wish, and this mechanism will also allow us to produce some printed copies for postal distribution. Exactly how this will work in practice remains to be determined but will depend to a large extent on the number of people who wish to continue to pay for a printed copy. It is likely that the costs for printing and mailing individual paper copies of the Report will increase, and there will be a modest increase in subscription rates for a printed and posted Report (we have held UK subscription rates at £6 per year for the last 5 years). However, we may be able to offset part of the cost increase from our small cash reserve.

Please send us your thoughts and comments (our contact details are on the inside front cover of this Report). In particular we would like to know if you have a preference for receiving printed or web-based Reports. If you would like to test the web download process please email G0AEV for more information.

Analysis of 28 MHz reports from the UK

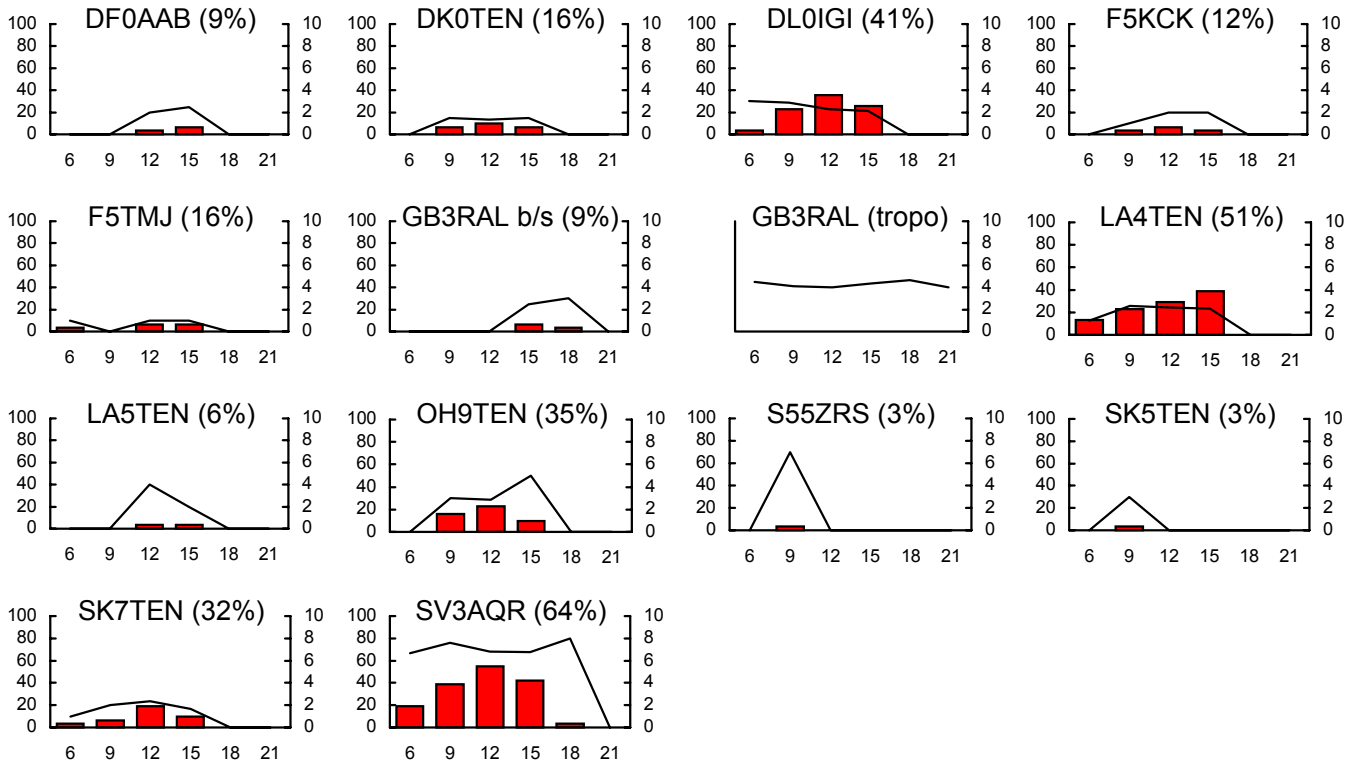
28 MHz reports and logs for March 2003 from G2AHU, G3IMW, G3USF, G4TMV, G4UPS, GM4WJA, G0AEV, G0IHF and from packet cluster reports. Compilation and commentary by G0AEV.

Mean solar flux and sunspot numbers were higher in March than in February which, coupled with the seasonal advantages for DX propagation close to the Equinox, suggests one might have expected an improvement in 10m band conditions in March. However, persistent geomagnetic disturbances to minor storm levels occurred on over half the days of the month and ionospheric critical frequencies were often depressed, severely so on a few days. There were a few instances of ionospheric enhancements preceding storms (and these probably had a more marked effect on 6m), but the net consequence was overall poorer DX propagation on 10m. The band opened to North America on only about 50% of days, according to beacon monitoring results. The most reliable paths – to the Middle East, southern Africa and southern South America – showed daily reliabilities around 90%

Beacon graphs legend

Legend for all beacon graphs in the following sections: - 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.

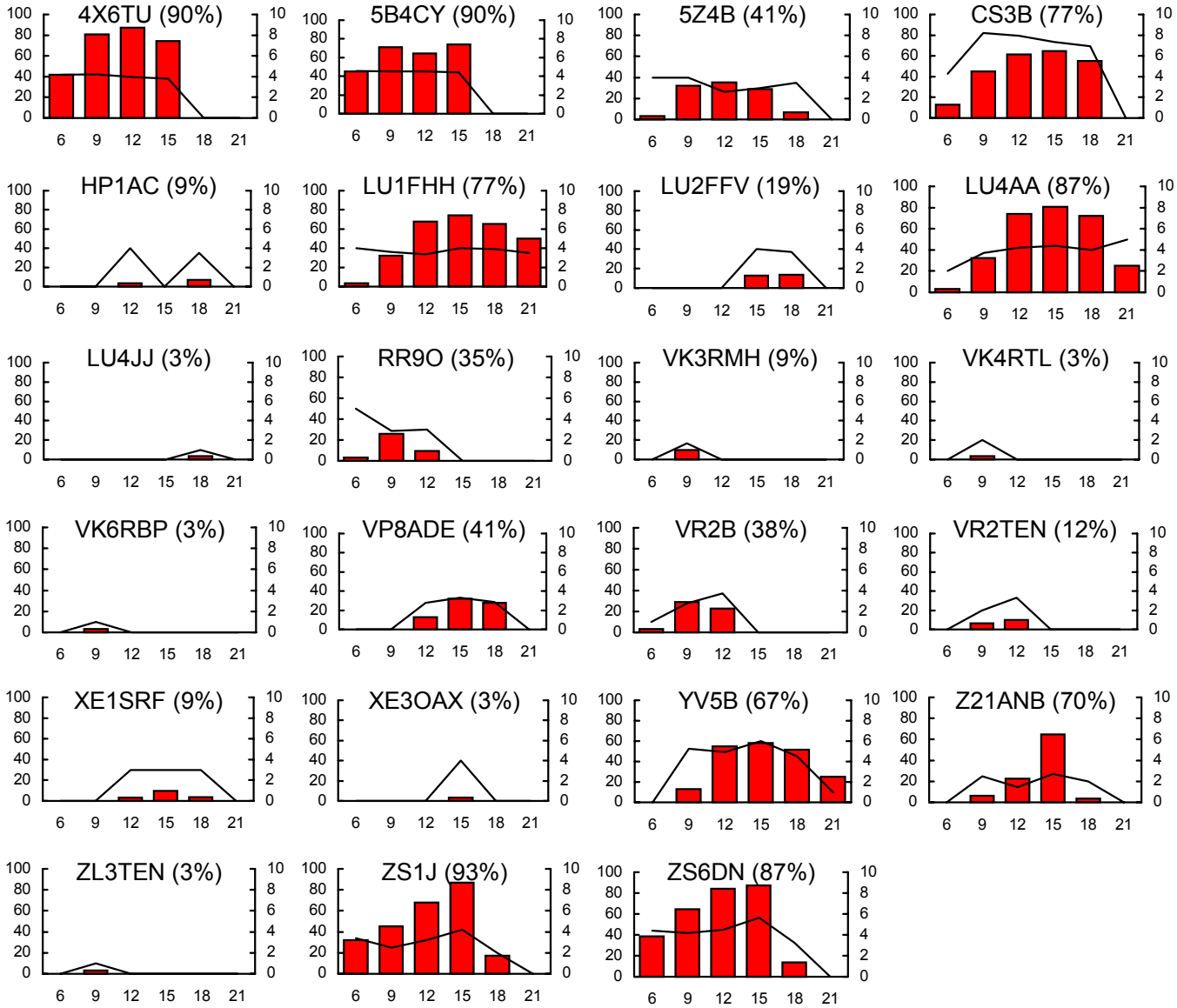
European Propagation / Beacons



Suggested propagation modes for European beacons. Backscatter from the F-layer was still fairly effective in providing inter-European communication on 10m, although with lower reliabilities matching the lower reliability in DX propagation. There were a few short sporadic E openings (included in the graphs for DL0IGI, S55ZRS and LA4TEN), and direct F-layer propagation was responsible for the results of SV3AQR and 10% of days for OH9TEN. There was one report of auroral backscatter on OH9TEN. All other graph data (apart from the tropo results from GB3RAL) are due to backscatter.

Beacon Notes. OH2B is still QRT after the theft of the beacon transmitter. There was a single report of SK5TEN this month, but this may have been a mistake for SK7TEN. In April, SK5AE came on the air from the same location, power output, frequency (28.280), and an almost identical message as SK5TEN. I believe this is the same beacon but with a callsign change. Other active European beacons not heard in the UK in March include I1M, IY4M, OK0EG and PI7ETE.

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



Suggested propagation modes. All the beacons were heard by normal short-path F-layer propagation, with a strong possibility that some of the later evening openings to southern Africa included TEP. No beacon produced 100% reliability as happened in February, but there was single F-layer hop propagation to the Middle East and multi-hop on north-south paths to southern Africa and South America on 9 days out of 10.

Beacon Notes. ZS6DN returned to service in the first few days of the month, and 5Z4B returned in the second half of March. OA4B and OH2B were both QRT. 4S7B is believed to be active (heard in the Southern Hemisphere) but there have been no reliable reports of this beacon in the UK for many months. VK6RBP is still under reported indicating continued problems with this beacon. LU4AA and LU1FHH appeared to be operating 100% this month, but LU4JJ and LU2FFV were clearly intermittent by comparison. In April VK5WI (28.260) returned after an absence of several years.

10m DX in March 2003.

The number of different DX countries worked/heard in the UK (from DX cluster spots and contributor logs) declined by around 15% from the numbers seen in February, this despite the boosts to activity from several major contests. The reduction is a reflection of the depressed ionospheric conditions that prevailed as a consequence of many magnetic disturbances. But there were enough good days to provide a reasonable haul of DX countries, as the list below shows, including JA, VK and (from beacon listening only) ZL.

3B8, 3B9, 4L 4S, 5B, 5R, 5V, 5X, 6W, 7Q, 7X, 9G, 9J, 9K, 9M2, 9N, 9Q, 9Y, A4, A6, A7, BV, C5, C6, CE, CN, CO, CP, CT3, CX, D2, D4, E2, EA8, EK, EY, EZ, FG, FR, HC, HC8, HH, HK, HL, HP, J3, J5, J7, J8, JA, KP2, KP4, LU, OD, P4, PJ2, PJ7, PY, ST, SU, TA, TI, TR, UA9/0, V5, VE, VK, VP2E, VP5, VP6, VP8, VQ, VU, W, XE, XV, YB, YS, YV, Z2, ZC, ZD9, ZF, ZL, ZS, Antarctica

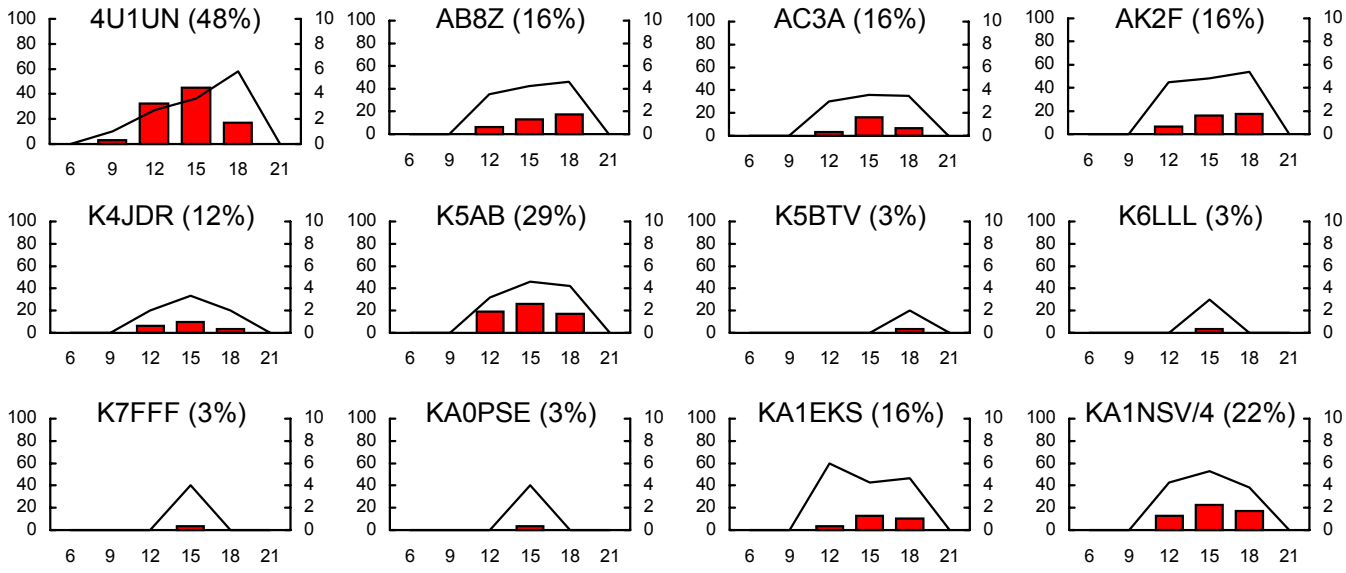
Propagation to North America:

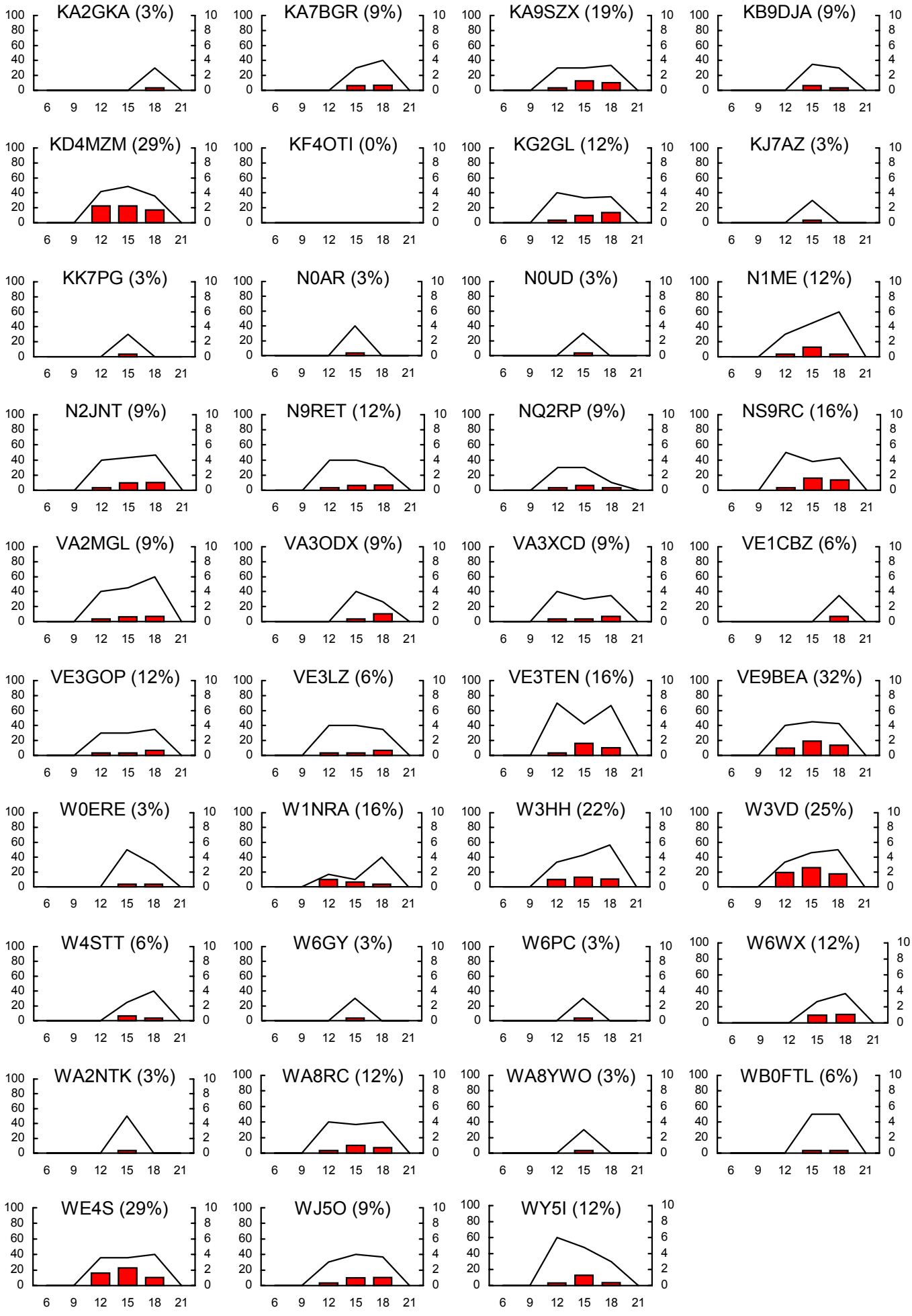
Counts of the different North American beacons heard give a crude estimate of propagation efficiency on east-west paths. This assumes there are no major changes in the number of beacons active: while there are fluctuations in the number of active beacons, the fluctuations are small compared with the total). Generally, the more beacons heard the better the propagation coverage of the continent. The beacon counts seen in recent months are as follows:

2002		2003	
October	60	January	58
November	58	February	48
December	64	March	51

February's 48 was seen as evidence of a genuine decline in propagation conditions. The small increase to 51 this month seems to run contrary to the other evidence presented in this Report. However, many if not most of the beacons reported were heard on only a couple of occasions. There was considerable day to day variability: 47 of the 51 W/VE beacons were heard on a single day (11 March) while there were many days without any propagation to North America at all.

The most reliable beacon is the 100 watt 4U1UN and daily reliability of this beacon was 92% in February but only 48% in March. Analysis of 4 years of data (as presented last month) shows that 4U1UN reliability might be expected to decline by around 10% from February to March for seasonal reasons. The decline from 92 to 48 can only be explained by the absence of propagation as a result of a real decline in ionospheric conditions – in this case due to geomagnetic disturbances.




KA2GKA (3%)
KA7BGR (9%)
KA9SZX (19%)
KB9DJA (9%)
KD4MZM (29%)
KF4OTI (0%)
KG2GL (12%)
KJ7AZ (3%)
KK7PG (3%)
N0AR (3%)
N0UD (3%)
N1ME (12%)
N2JNT (9%)
N9RET (12%)
NQ2RP (9%)
NS9RC (16%)
VA2MGL (9%)
VA3ODX (9%)
VA3XCD (9%)
VE1CBZ (6%)
VE3GOP (12%)
VE3LZ (6%)
VE3TEN (16%)
VE9BEA (32%)
W0ERE (3%)
W1NRA (16%)
W3HH (22%)
W3VD (25%)
W4STT (6%)
W6GY (3%)
W6PC (3%)
W6WX (12%)
WA2NTK (3%)
WA8RC (12%)
WA8YWO (3%)
WB0FTL (6%)
WE4S (29%)
WJ5O (9%)
WY5I (12%)
100 80 60 40 20 0
10 8 6 4 2 0
6 9 12 15 18 21

Analysis of 50 MHz reports from the UK

UK 50 MHz reports for March 2003 from G2ADR, G3HBR, G3IMW, G4UPS and via packet cluster spots. Compilation and commentary by G0AEV.

In the last report I made a point of highlighting the one and only DX report received. The sense then was that, apart from the occasional TEP and Es link to F2 available south of the UK, the 6m DX season was effectively over. That was a little over pessimistic! Our reporters didn't hear too much this time round, but some other UK stations managed to hear and work into Brazil and 8 different African countries in March 2003.

Generally HF conditions had a poor month, mainly as a result of the high number of geomagnetic disturbances. However, solar activity was moderate (higher on average than in February), March is the month of the Vernal equinox (with its consequent advantages for propagation), and some of the disturbances appeared to be preceded with ionospheric enhancements. All of these factors contributed to a small but welcome reprieve for 6m Dxers.

Tabulations. 50 MHz compilations are presented in tables ordered alphabetically by country prefix. Percentages following the country name are the daily reliability values (the percentage of days when propagation was reported). The first row of each table labelled "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 UTC, "09" for the band 0900 - 1200 UTC, etc.) A figure of "0" indicates that signal strength was not reported.

DX (F2 and TEP) Propagation

I get the impression that not many UK stations managed to work much DX this month, but DX was worked by some. On the 1st 5N, 9L and V5 made it to parts of the British Isles with good signals, and similar, though usually poorer, propagation occurred on other days. The most extensive opening (based on the number of reports) appears to have been to Brazil in the evening of the 28th

	5N (3%)	5U (10%)	7Q (3%)	9J (3%)	9L (6%)	J5 (3%)	PY (3%)	V5 (3%)	ZS (3%)	
D	1	8 9 16	13	28	1 2	9	28	1	20	
06										
09										
12	9				1			9		
15		5 0 0	0		0				0	
18				3		2	9			
21										

The video signals from 3C provide a good indicator of band openings to the south. 3C TV came into the UK, often strongly, on the following dates/times (as reported by various people): 1st at 14.30, 2nd at 11.42, 6th at 13.14 and 13.28, 7th at 13.27, 8th at 14.19, 15th at 16.04, and 22nd at 13.28. This data extends the number of days when 50 MHz propagation may have been possible to West Africa.

Backscatter signals were reported on a few days, also useful indicators that F-layer MUF was above 50 MHz – the 3 instances noted below occurred at times when DX was also worked

2nd	14.28	MW1MFY hears F6FHP calling CQ (569), described as "BS?" at QTF of 170 degrees.
8th	17.10	G7RAU (IO90) reports EI3IO heard calling CQ at 539, QTF 100 degrees
9th	15.09	MW1MFY reports backscatter from F5KHM, 549 BS, QTF of 190 degrees.

Several of the DX openings may have taken place during pre-storm ionospheric enhancements, but as there were so many storms it is difficult to sort out what was responsible for what!

Sporadic E

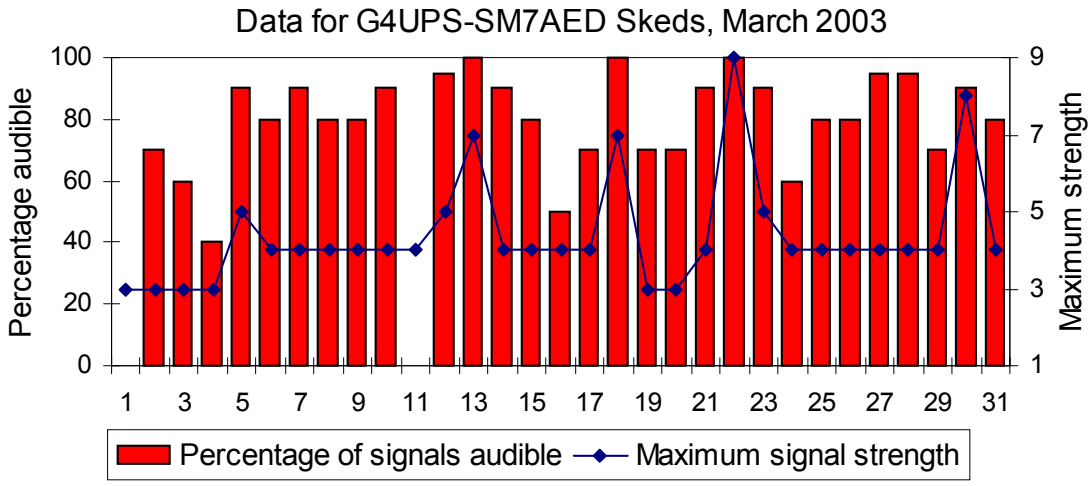
On the 2nd there was a good but short sporadic E event between the UK and Poland. Video on 49.739 at S9+ at 90 degrees was spotted by G0JHC at 10.37. He then heard DL7HG in JO62 at 339 with QSB. A few minutes later the band opened to SP with signals up to S9 plus. The last reported contact was 20 minutes later at 11.08. On 10 metres at approximately the same time the DL0IGI and S55ZRS beacons were heard indicating, as would be expected, a larger event footprint at the lower frequency. The only other (possible) sporadic E opening was during the evening of the 9th (at 20.56) when EA3LL spotted MQ1A/P at 59. At around this time stations in GM were reporting an aurora, but it seems unlikely that this was the cause (for example by auroral E) of an opening on the G-EA path.

Meteor Scatter

Apart from people trying JT44, there was little in the way of meteor scatter activity in March. The following were reported on the DX cluster

6th 21z 21.24 G4PCI reported F6IRF calling CQ on JT44, propagation "mainly MS"
25th 18z 19.23 OZ8ZS > GX7VHF26 MS signal
20.57 LC1LAT (JO59) heard "GX7?" – presumably GX7VHF in a short lived burst

Ted G4UPS reported his morning (07.50z) 6m MS skeds in a slightly different way this month. As well as maximum signal strength of the SM7AED signal, Ted reported the percentage of time that Arne's transmission was audible. Obviously this percentage is a qualitative estimate – somewhat akin to the ping/burst length estimate that is the first number in a "proper" MS signal report – but valuable none the less. I think all parties are convinced that the propagation mode is predominantly scatter from random meteors (these being most abundant in the early mornings), but there are days where propagation appears to be particularly strong and consistent (perhaps similar to sporadic E) that Ted describes these as "extended tropo". The latter need further investigation: a tropospheric explanation for these instances would be controversial to say the least. The data on signal strength and percentage signal audible are shown in the following graph. Numbers on the X-axis are days of the month for March. No percentage audible figures were available for the 1st and 11th.



The 3 days when signals were "100% audible" (13th, 18th and 22nd) were described as via extended tropo. Signals were also strongest at these times. However, there is a range of percentage audible from less than 40% to 100%, and on this basis alone the 100% audible events seem part of the continuum of all events. Signal strength seems positively correlated with percentage signal audible but is not, on the volume of data available so far, a conclusive pattern.

Ted writes that he is "again very surprised at the consistency of Arne's signals on the morning skeds over 1200 km. What a pity we cannot get some other retired buffs to attempt MS experiments over varying distances" - a sentiment with which we can all agree.

Tropospheric Propagation

A number of reasonable contacts made via the troposphere were reported this time, some of those that achieved better distances are noted below:

1st	15z	17.33	MW1MFY hears ON4ANT (JO20) calling CQ contest,
14th	15z	15.12	F8DBF (IN78) spots GB3MCB at 569, normally 539
16th	06z	07.08	G0JHC > ON4GG "contest" on a path length of 565km
		08.59	GM3WOJ (IO77) > F6FHP (IN94) 55 with QSB – backscatter or long haul tropo?
16th	09z		Several G (IO81, IO91, IO90) hearing good signals from ON (contest)
	18z	20.50	GM8LFB > GB3LER 539 tropo
20th	18z	18.21	F6KHM > GB3MCB at 569 (normally 519 at this time)
30th	09z	09.20	DK3EE (JO41) spots G1YLE (JO02)

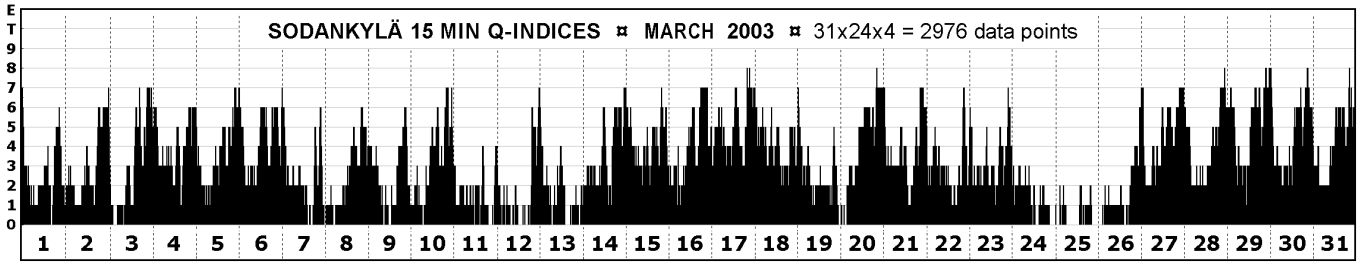
Aurora and Auroral E

A very busy month for the earth's magnetic field. As tabulated in the data section of this Report, one or more of the UK or the planetary K indices reach 5 or higher (i.e. at least minor storm) on 17 days in March. Some form of radio aurora was identified on 20 days by UK observers (24 in Finland). Many of these were weak affairs of the "Scottish" type, some were moderately strong with stations in the south of England and/or countries in Europe at the same latitude able to participate (for example the events on 16th, 29th and 30th), but none were very extensive or strong.

1st	18z	20.29	MM0CWJ (IO67) spots OY6SMC 41A
3rd	15z	17.06	M0CTP reported weak auroral video 48.239.6 QTF 0
		17.24	EI7IX (IO53) hears GB3LER at 51A
	18z	18.00-18.20	EI3IO > MM5AJW 55A, MM3AXK > GB3LER 57A, G4UPS > GB3RMK 33A
4th	18z		Aurora in mid to late evening (de GM4WJA)
5th	15z		Aurora in late afternoon to early evening at GM4WJA
6th	15z	17.00-17.10	GM7PBB (IO68) > GB3LER 57A, > ON4GG 59A, > GB3BUX 54A
8th	18z	20. 54	GM7PBB hears GB3LER 51A at 340 degrees
	21z	21.31	MM5AJW > GB3LER 52A QTF 0,
9th	18z	20.21	GM7PBB (IO68) > MM5DWW 57A (IO89)
10th	21z	22.04	GM7PBB hears GB3LER 55A
14th	18z		GM4WJA has aurora in early evening.
15th	15z		Aurora in late afternoon (GM4WJA)
16th	15z	15.30-15.40	GM8LFB (IO88) reports both GB3RMK and GB3LER with auroral signals
	18z	1825	GM3WOJ > GB3LER 59A, MW1MFY > GB3RMK 52A (and 48MHz video)
		19.00-19.15	G4PCI > GB3LER 57A, G7RAU > GB3RMK & GM8OEG QTF 025, GM>GM
		19.57	GM8LFB reports OH9SIX 539, unstable auroral E
		20.25-21.00	Few GM>GM and G>GM QSOs, G3SED (IO90, furthest South) > GW3MFY
	21z	21.00 21.20	G7RAU >MM5AHO QTF 0, GM8LFB heard LY2BAW 52A
		22.30	GM8LFB reports GB3LER and GB3RMK still auroral but no other reports
17th	00z	02.24	GM0EFT hears 49.760 video S7-9 for 20 minutes (Auroral E)
	12z	14.22	G3NPFspots OH3BHL calling CQ at 559 (presumable auroral E)
	15z	15.10	MM5AJW (IO88) hears GB3LER 53a, 15.35 SM0LQB > GM3XOQ
	21z	21.45	GM3WOJ > LY2BAW 53A
		23.25-23.55	EI7IX > GB3LER 51A, GM0HLV (IO78) > GB3LER 51A
20	12z	14.02	GM8LFB reports GB3LER auroral
	15z	1710-17.25	GM8LFB > OY6SMC 51A and GM beacons, G4IGO hears SM/LA video
	18z	18.58	MW1MFY spots GB3RMK 41A "building slowly" (no further aurora reports).
	21z	21.32	MM5DWW (IO89, Orkney) has JX7SIX 599 with QSB (Auroral E)
21st	12z-18z		Weak aurora all afternoon and evening at GM4WJA
23rd	18z		GM4WJA reports aurora in early evening.
27th	15z	1524-17.11	GM8LFB >GB3LER and GB3RMK, > OY6SMC 51A, > G8GXP (IO93) 57A
			G4OBK (IO94) > GB3LER 54A, MW1MFY (IO81) >GB3RMK 53A

28th	15z	16.59	GM8OEG (IO86) > GB3LER 51A
	21z	22.43-22.58	MM5AJW IO88 > OZ0JX 44A, > GB3LER 57A, > GM0TGE 57A
29th	00z		GM4WJA reports aurora of 28th through into early morning of 29th while the aurora in the mid afternoon and late evening of 29th continued into the early morning of 30th, with a big visual display.
	15z	15.16	GM8LFB >GB3LER/B 53A, > GB3RMK also auroral
		17.55	MW1MFY > GB3RMK 55A, auroral LA/SM video strong.
	18z	18.30-19.00	MW1MFY 57A, EI7IX 53A, M3DCD (IO94) 57A, G4PCI > GM
	21z	23.28-23.40	GB3LER < PA0OOS JO33, LA4CQ (54A) G4IGO > LA0HV 53A (JP59)
30th	00z	02.41	GM8LFB spots GB3LER still auroral
	15z	15.33	GM8LFB hears GB3LER and GB3RMK with auroral tone
		17.23-18.00	Several G<>GM QSOs, EI3IO > GM4WJA 53A, MW1MFY > PD0RFU best at 0 degrees, ON7KJ > GM3WOJ 52A (IO77)
	18z	18.00-18.45	Few G<>GM, PE1CZG (JO22) > GM3WOJ 52A, ON4ANT >GM0TGE
	21z	22.36	EI7IX (IO53) spots GB3LER at 51A
31st	12z	14.27-15.00	G4ASR (IO81) spots GB3RMK & GB3LER 52A, followed by G<>GM, G<>G auroral QSOs, G7RAU (IO90) the station furthest south. QTF's 000-030
	15z	15.09-15.20	G4OBK >GM3XOQ (Shetlands) 58A, > OZ8ZS QTF 050, > SM6IQD 55A
		15.33-16.55	LA5EKA > G4LOH; GM0TGE 54A < DK3EE (JO41), < DJ6XV 53A (JO31)
		17.15-18.00	MM5AHO > GB3LER 56A, G4ASR > GB3RMK 54A, > G2ADR 52A
	18z	19.05	EI7IX > GB3LER 51A. At 20.38 G4ASR > GB3RMK 53A "auroral again"

Q-Indices from Sodankylä, Finland (tnx Väinö, OH2LX)



Väinö reports that March 2003 was a rather disturbed month. The maximum Ak for Sodankyla was 86 on 28th March (Nurmijarvi figures not available), and the Sodankylä Ak average for March was a high 38.7. Many (24) days with radio aurora were reported by OH5IY.

Solar and Geomagnetic Data for March 2003

Data supplied by G0CAS (Sun Mag) and from Internet sources. Compilation by G0AEV.

Sunspot numbers (SEC)	Mean 119.7	Max 224 (9th)	Min 40 (21st and 22nd)
Solar Flux (28 MHz)	Mean 132.3	Max 160 (31st)	Min 89 (22nd)

Solar data for March 2003 are presented in the table on the previous page. Numbers in the 28 and 50 MHz columns are the total daily "areas" worked/heard from the UK, 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 and Aurora. F2 critical frequencies are from Chilton in Oxfordshire, SIDC spots from SIDC, and other solar data from the joint USAF/NOAA daily summaries or directly from SEC.

Energetic Events. Flares of M and X class.

17th	1850-1916	X1.5 1B	19th	0258-0421	M1.5	20th	1125-1137	M1.5 1F
18th	0030-0042	M1.6 1N		0636-0649	M1.6 2F			
	0551-0602	M2.5 1B		0934-1000	M3.7 1N			
	1151-1220	X1.5 1B		1325-1338	M1.4 2F			

K-indices. March K indices for Hartland are presented below (tnx British Geological Survey)

1	4	2	2	3	4	3	3	3	24	**11**	4	2	2	1	2	3	2	0	16	**21**	4	4	3	4	3	1	3	5	27
2	2	2	2	3	2	2	4	3	20	**12**	2	1	1	2	2	1	2	3	14	**22**	4	3	4	3	2	1	2	4	23
3	3	1	2	1	3	3	5	5	23	**13**	4	3	2	2	3	1	1	2	18	**23**	3	3	3	4	3	3	4	4	27
4	4	4	3	4	4	4	4	4	31	**14**	2	2	3	3	4	2	5	4	25	**24**	3	2	1	1	1	1	1	0	10
5	3	2	3	3	3	4	4	4	26	**15**	5	3	3	3	3	5	4	4	30	**25**	1	1	1	0	1	1	1	1	7
6	4	3	3	4	3	5	3	4	29	**16**	3	3	2	4	4	4	5	4	29	**26**	0	2	1	1	1	2	3	4	14
7	4	3	3	3	2	1	3	3	22	**17**	3	5	3	3	4	4	5	5	32	**27**	5	3	4	3	3	4	3	3	28
8	1	1	1	1	2	3	3	3	15	**18**	4	4	4	4	4	2	3	3	28	**28**	3	4	3	2	2	4	4	5	27
9	2	3	3	2	2	1	2	4	19	**19**	3	3	3	1	2	3	3	3	21	**29**	5	3	3	3	4	4	6	5	33
10	1	3	2	2	2	4	3	5	22	**20**	1	2	3	4	4	5	4	5	28	**30**	5	2	3	4	4	5	4	5	32
																				31	3	2	3	4	4	5	5	4	30

The UK or planetary K indices reach 5 or higher (i.e. at least minor storm) on 17 days

	3rd March									4th March									6th March								
Kp	3	1	2	3	3	4	4	4	24	4	4	**5**	4	**5**	4	3	3	32	4	4	4	4	**5**	3	3	3	30
Lerwick	3	0	1	1	3	**5**	**6**	**6**	25	**5**	4	3	3	3	3	3	4	28	4	3	2	2	3	4	3	**5**	26
Eskdale	3	1	1	1	3	3	**5**	**5**	22	4	4	3	4	4	3	4	4	30	4	3	3	3	3	4	3	4	27
Hartland	3	1	2	1	3	3	**5**	**5**	23	4	4	3	4	4	4	4	4	31	4	3	3	4	3	**5**	3	4	29

	10th March									14th March									15th March								
Kp	1	3	2	2	2	4	3	**5**	22	2	2	3	3	4	2	**5**	4	25	**5**	3	3	3	3	**5**	4	4	30
Lerwick	1	2	1	2	2	3	3	4	18	1	1	2	2	3	2	4	3	18	4	4	3	2	3	4	3	4	27
Eskdale	1	2	2	2	2	4	3	4	20	2	2	3	3	4	3	4	3	24	4	3	3	3	3	4	3	4	27
Hartland	2	3	3	3	4	3	3	4	25	2	2	4	4	**6**	3	4	3	28	**5**	4	4	4	4	3	4	3	31

	16th March									17th March									18th March								
Kp	3	3	2	**5**	4	4	**5**	4	30	3	4	**6**	4	**6**	4	4	**5**	36	4	4	4	**5**	4	3	3	3	30
Lerwick	3	2	2	2	4	3	**7**	**6**	29	2	4	3	2	4	4	**5**	**6**	30	**5**	3	3	3	3	2	2	2	23
Eskdale	3	2	2	3	4	4	**5**	4	27	3	4	3	3	4	4	**5**	**6**	32	4	4	4	3	4	2	2	3	26
Hartland	3	3	2	4	4	4	**5**	4	29	3	5	3	3	4	4	**5**	**5**	32	4	4	4	4	4	2	3	3	28

	20th March									21st March									23rd March								
Kp	1	3	3	**5**	4	4	4	4	28	**5**	**5**	4	**5**	4	3	3	4	33	4	2	4	**6**	4	3	3	3	29
Lerwick	0	1	2	2	4	4	4	4	21	**5**	3	3	3	2	1	3	5	25	3	2	2	3	2	2	3	2	19
Eskdale	0	2	3	3	4	4	4	4	24	4	3	3	4	3	2	3	4	26	3	2	3	4	3	3	4	3	25
Hartland	1	2	3	4	4	**5**	4	**5**	28	4	4	3	4	3	1	3	**5**	27	3	3	3	4	3	3	4	4	27

	27th March									28th March									29th March								
Kp	**5**	2	**5**	4	4	**5**	3	3	31	4	4	3	2	3	4	4	**5**	29	**5**	**5**	4	3	4	4	3	4	32
Lerwick	4	2	3	2	3	4	2	4	24	3	3	3	2	2	3	**5**	**6**	27	4	**5**	2	3	4	4	**7**	**7**	36
Eskdale	4	2	3	3	3	3	2	3	23	3	3	3	2	2	3	4	**5**	25	4	3	3	3	4	4	**6**	**5**	32
Hartland	**5**	3	4	3	3	4	3	3	28	3	4	3	2	2	4	4	**5**	27	**5**	3	3	3	4	4	**6**	**5**	33

	30th March									31st March								
Kp	4	**5**	3	3	3	3	4	**5**	30	3	3	3	4	**6**	**6**	4	4	33
Lerwick	**6**	3	3	3	4	4	**6**	**7**	36	3	1	2	3	**6**	**5**	**6**	**5**	31
Eskdale	**5**	3	3	3	4	4	4	**5**	31	3	2	2	4	4	**5**	**5**	4	29
Hartland	**5**	2	3	4	4	**5**	4	**5**	32	3	2	3	4	4	**5**	**5**	4	30

March	28 Areas		-- 50 Areas --			2800	- Spots -		Max			X-ray	Max foF2		Min foF2		-- Particle Fluences --		
2003	Es	F	Es	DX	A	Flux	SEC	SIDC	Kp	Ap	Aa	b.gnd	MHz	Hour	MHz	Hour	2MEV Elec	1MEV Prot	10MEV Prot
01-Mar	1	19	0	3	1	138	73	48	4	14	31	B5.1	9.4	13	2.1	06	3.5E+07	1.2E+05	1.2E+04
02-Mar	2	25	2	1	0	147	67	59	4	14	23	B5.3	12.0	13	2.1	05	1.6E+07	1.0E+05	1.2E+04
03-Mar	0	10	0	0	3	149	136	62	4	15	36	B3.7	6.9	15	2.0	04	2.4E+07	3.4E+05	1.2E+04
04-Mar	0	11	0	0	0	146	160	80	5	26	52	B3.7	10.0	11	2.0	01	1.4E+07	4.3E+05	1.2E+04
05-Mar	0	24	0	0	0	149	138	72	4	16	33	B3.4	9.8	14	2.4	04	3.6E+07	2.3E+05	1.2E+04
06-Mar	0	16	0	0	3	150	132	63	5	25	48	B4.1	9.7	12	2.1	05	5.2E+07	4.0E+05	1.2E+04
07-Mar	0	10	0	0	0	150	191	79	4	14	26	B3.8	11.1	14	3.1	06	6.8E+07	1.8E+05	1.2E+04
08-Mar	0	36	0	1	1	148	203	66	3	9	20	B3.7	9.8	14	2.5	05	9.9E+07	2.1E+05	1.3E+04
09-Mar	0	47	1	2	1	153	224	89	4	11	20	B3.8	10.0	15	3.4	06	3.3E+07	1.5E+05	1.2E+04
10-Mar	0	33	0	0	1	144	214	71	4	16	30	B3.3	10.8	14	2.5	05	4.0E+07	3.6E+05	1.1E+04
11-Mar	0	60	0	0	0	142	142	69	4	13	21	B2.9	9.7	13	3.8	05	2.4E+07	9.9E+04	1.1E+04
12-Mar	0	40	0	0	0	138	109	56	3	9	16	B2.6	9.3	18	3.2	05	2.8E+07	8.1E+04	1.1E+04
13-Mar	0	10	0	1	0	134	88	45	4	15	26	B2.6	8.4	15	3.1	05	9.7E+06	1.2E+05	1.1E+04
14-Mar	0	11	0	0	0	139	114	58	6	25	43	B2.5	7.7	15	3.2	05	7.2E+06	5.2E+05	1.1E+04
15-Mar	0	13	0	0	0	131	124	63	5	24	49	B2.5	8.1	14	3.5	05	4.2E+07	1.0E+06	1.1E+04
16-Mar	0	16	0	1	3	129	121	62	5	23	49	B3.5	8.1	14	3.6	05	4.2E+07	2.0E+06	1.1E+04
17-Mar	0	6	0	0	4	125	80	41	6	39	57	B3.0	5.9	18	2.3	23	8.4E+07	2.3E+06	1.5E+04
18-Mar	0	9	0	0	0	118	64	43	5	26	41	B4.2	9.2	13	2.1	05	1.9E+08	4.0E+06	2.2E+04
19-Mar	0	8	0	0	0	108	53	39	4	14	22	B3.6	9.2	14	2.9	04	2.2E+08	2.8E+06	1.5E+04
20-Mar	0	18	0	1	3	97	45	29	5	21	47	B2.1	10.4	14	3.0	05	1.3E+08	3.4E+06	1.2E+04
21-Mar	0	0	0	0	0	91	40	23	5	29	48	B1.6	4.8	13	2.1	04	2.5E+08	7.0E+06	1.1E+04
22-Mar	0	9	0	0	0	89	40	8	4	16	29	B1.4	7.2	16	2.2	01	1.6E+08	8.4E+05	1.2E+04
23-Mar	0	11	0	0	0	93	43	30	6	24	38	B1.3	9.5	13	3.0	03	3.5E+08	5.5E+06	1.2E+04
24-Mar	0	9	0	0	0	98	64	33	4	10	12	B1.6	7.8	13	2.3	05	3.7E+08	8.0E+05	1.2E+04
25-Mar	0	15	0	0	0	109	89	52	2	6	7	B1.7	8.4	12	2.8	05	6.3E+08	1.4E+06	1.2E+04
26-Mar	0	12	0	0	0	127	116	75	3	8	16	B3.3	8.2	12	2.9	05	1.4E+08	9.7E+05	1.2E+04
27-Mar	0	11	0	0	3	141	156	81	5	27	46	B4.2	7.8	12	3.7	05	8.3E+06	4.2E+05	1.1E+04
28-Mar	0	14	0	2	2	147	189	91	5	24	42	B3.4	9.8	11	3.2	05	2.7E+07	4.5E+05	1.1E+04
29-Mar	0	4	0	0	5	155	155	112	5	27	53	B4.3	6.8	19	2.9	02	1.1E+07	3.0E+05	1.1E+04
30-Mar	0	7	0	0	5	155	176	106	5	26	57	B3.	6.9	14	2.5	05	1.0E+07	2.0E+05	1.1E+04
31-Mar	0	8	0	0	7	160	165	102	6	31	n.a.	B3.8	6.0	14	2.7	04	3.7E+07	6.7E+05	1.1E+04
Sum	3	522	3	12	42														
Average	0.1	16.8	0.1	0.4	1.4	132.3	119.7	61.5	4.5	19.3	34.6	B4.8	8.7	14	2.7	04	1.0E+08	1.2E+06	1.2E+04
Maximum	2	60	2	3	7	160	224	112	6	39	57	C1.1	12.0	19	3.8	06	6.3E+08	7.0E+06	2.2E+04
Minimum	0	0	0	0	0	89	40	8	2	6	7	B1.7	4.8	11	2.0	23	7.2E+06	8.1E+04	1.1E+04

50 MHz Outside Britain

Compilation and Commentary by G3USF

Continental Europe

Auroral-Related Propagation

Another of those months when the geomagnetic field was almost daily at active to minor storm levels in the higher latitudes but with only a few days with significant mid-latitude disturbance. OH2LX informs us that the average daily A figure at Sodankyla was 38.7, with 11 days of 50 or more, the most disturbed being the 29th at 86. Hence the myriad 'OH5 events' compiled by OH5IY and as usual QSPd by OH2LX. Mid-latitude aurora was reported on the 3rd (with a modest Ap of 15!), 6th (25), 16th (23), 17th (Ap 39) 20th (21), 27th (27) 29th (Ap 27), 30th(Ap 26) and 31st (Ap 31), but as G0AEV noted earlier, these openings were all brief and/or weak.

Mar 1 0000-10 Au>OH5IY 0040-0110 Au>OH5
Mar 2 1242 49750>OH6(KP02) 1850-1920 Au>OH5

Mar 3 1550-1810 Au>OH5 1620-30 AuFM>OH5 16-1700 OH1(KP10)>LY2(KO25) OH1>OZ(55a) OH7>LY2 (KO25) OH6(KP02)>LY2(KO25) 17-1800 GB3LER>EI(JO53 51a) 49750>OZ 1750-1810 AuFM>OH5 18-1900 GM>EI(55a) LY2(KO25)>OZ(030) OH3(KP10)>OZ(JO54 55a) OY6SMC,GB3LER,GB3RMK>EI(JO53 41a) 1830-40 Au>OH5 2240-2400 Au>OH5 2330-50 AuFM>OH5

Mar 4 0000-0110 Au>OH5 0020-90210 AuFM>OH5 01`30-50 Au>OH5 0210-30 Au>OH5 1200-10 AuFM>OH5 1500-50 Au>OH5 1600-20 AuFM>OH5 1920-30 AuFM>OH5 2050-2110 AuFM>OH5 2150-2210 Au>OH5

Mar 5 1640-1700 Au>OH5 1800-10 Au>OH5 2330-2400 Au>OH5
Mar 6 0000-10 Au>OH5 1800-10 Au>OH5 2330-2400 Au>OH5
Mar 7 0140-0230 Au>OH5
Mar 8 1650-1710 AU>OH5 1730-1820 Au>OH5
Mar 9 1940-2020 Au>OH5
Mar 10 1250-1320 Au>OH5 1530-1640 Au>OH5 2120-30 Au>OH5 2140-2210 Au.OH5
Mar 13 0030-0130 Au>OH5
Mar 14 1240-1400 Au.OH5 2110-2220 Au.OH5 2230-50 Au>OH5
Mar 15 0020-0120 Au>OH5 1700-10 Au>OH5

Mar 16 0000-10 AuFM>OH5 0020-30 Au>OH5 1240-1300 Au>OH5 1330-1540 Au>OH5 1820-30 Au>OH5 1900-10 Au>OH5 19-2000 LAtv>PA SM6>SP4(55a) OH9SIX>LA(JP50 55a) SP1>LA(55a JP50) OH9SIX.SM3(55a JP93) 2000-2250 Au>OH5 2010-30 AuFM>OH5 20-2100 JX6SIX>LA(539) LY(KO25)>LA(JP50 59a) 2050-2100 AuFM>OH5 21-2200 LY(KO25)>LA(41a) SM0(JO75)>LY(KO25) SM7(JO89)>LY(KO25) SM4(JP70)>LY(KO25) LA(JO59)>LY(KO25) SM0(JO99)>LY(KO25) 22-300 SK7SIX>LA(JP50 53a) OH1SIX>LA(JP50 55a) 2110-20 AuFM>OH5 2220-2400 Au>OH5 2330-40 AuFM>OH5

Mar 17 1310-30 Au>OH5 1350-1620 Au>OH5 14-1500 OH3>SP2(55a) 1410-1500 AuFM>OH5 15-1600 YL3>LA(JO59 55a) 1530-40 AuFM>OH5 16-1700 LA>SM6(55a) OH3>SM6(55a) 2050-2120 Au>OH5 2100-10 AuFM>OH5 21-2200 OH3(KP10)>LY(KO25 55a) 2150-2200 Au>OH5 OH3(KP10)>LA(559a) OH3(KP10)>OZ(JO54 55a) 22-2300 OH3>LY(57a) OH6(KP23)>LY(KO25) OH3>LA(JO59 57a) 2220-2400 Au>OH5 23-2400 LA(JO59)>LA(JP32) GB3LER>EI(51a IO53) 2330-2400 AuFM>OH5

Mar 18 0010-0200 Au>OH5 1340-1440 Au>OH5 14-1500 OH3(KP10)>LY(KP25 59a) OH3(KP20)>LY(KO25 57a)
Mar 20 1150-1220 Au>OH5 1340-1500 Au>OH5 1530-1750 Au>OH5 2100-2320 Au>OH5 2240-2310 AuFM>OH5 2330-2400 Au>OH5
Mar 21 0000-10 Au>OH5 0040-0140 Au>OH5 2210-30 Au>OH5 2250-2300 Au>OH5
Mar 26 2340-50 Au>OH5

Mar 27 0020-0110 Au>OH5 0120-50 Au>OH5 12120-40 Au>OH5 1430-1740 Au>OH5 1630-1700 Au>OH5 2030 49750>OH6(KP02 AE) 2330-40 Au>OH5 2350-2400 Au>OH5

Mar 28 0040-50 Au>OH5 1620-40 Au>OH5 2100-1400 Au>OH5 2200-10 AuFM>OH5 SM(JO99)>OZ(JO54 55a) AuFM>OH5 OZ(JO54)>OH1(KP01 51a)

Mar 29 0000-0140 Au>OH5 0150-0300 Au>OH5 1330-1800 Au>OH5 1530-1710 AuFM>OH5 17-1800 OH6(KP32)>OZ(JO54 55a) OH3(KP10)>OZ(JO54 55a) 1730-40 AuFM>OH5 1820-40 Au>OH5 1830-50 AuFM>OH5 1832 GB3LER>EI(IO53 53a) 2030-2110 Au>OH5 2120-2400 Au>OH5 2200-30 AuFM>OH5 2255 LA7SIX>LA(JP32 59) 2300-50 AuFM>OH5 2328 GB3LER>PA(JO33)

Mar 30 0000-0230 Au>OH5 0100-10 AuFM>OH5 1400-1510 Au>OH5 1520-1610 Au>OH5 1640-1710 Au>OH5 1730 GM>EI(IO63 53a) 1756 GM>ON(52a) 1940-50 Au>OH5 2010-40 Au>OH5 2050-2230 Au>OH5 2128 TF3SIX>EI(IO53 519) 2130-50 AuFM>OH5 2230-40 AuFM>OH5 2236 GB3LER>EI(IO53 51a) 2240-2340 Au.OH5

Mar 31 1236 49750>OH6(KP02 55a) 1250-1620 Au>OH5 1420-40 AuFM>OH5 OH3>OH6 1450-1500 AuFM>OH5 1453 OZ>SP2(57a) 15-1600 ES2(KO29)>DL(JO53) OH3>LA SP2>OH6(KP02 55a) 1520-40 AuFM>OH5 1533 G>LA 1539 OH3>PA(59a) 1616 GM(IO78)>DL(JO41 54a) 1630-50 Au>OH5 1653 GM(IO78)>DL(JO31) 1700-10 Au>OH5 1905 GB3LER>EI(51a IO53) 2030-2100 Au>OH5 2040-50 AuFM>OH5 2104 OH3>OZ 2120-2230 Au>OH5 2310-2400 Au>OH5

Other Modes

A gloomy take on March 2003 would compare it with March 2002, when we featured a full and varied panel of contacts with Asia. No such box is required this month to record two solitary contacts between JA and 5B on the 16th and 17th. (There was also an unverified JA<>EA5 report on the 13th.) A more cheerful assessment would underline the marked improvement on February and contacts with the VP6DIA expedition (albeit these were mostly with the north-west corner of Africa), plus a contact between ZL and EA7. Taking a wider view, DX was actually worked from somewhere in Europe every day but one - the disturbed 17th.

This was, of course, mainly due to Mediterranean working into southern Africa, which was only slightly below 2002 levels, with tep arriving on cue almost daily. By contrast, the 'north' was well down on 2002, with openings on only 8 days, compared with 28 - and two of these were probably due to tep extending into YO, which is ‘north’ only by the arbitrary criterion of not being on the Mediterranean!

Europe<>Southern Africa

	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
'Med'	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+		+	+	+	+
'North'	+		+										+			+		+		+				+				+			

	Mediterranean	North
ZS6	26 days 1-6 8-16 18-26 28 31	5 days 3(DL,HB,OE,SP,YO) 16(YO) 18(PA) 20(DL,G,SP) 28(DL)
7Q	19 days 1-3 5-9 11 12 15 16 18-20 25 26 30 31	1 day 1(G)
Z2	13 days 2,5,6,14,16,18,19 24-26 28 30 31	1 day 28(HB,PA)
V5	9 days 1,6,8,18,20,22,24,25,30	2 days 1(G,HB) 24(YO)
9J	9 days 3,5,8,9,12,16,24,28,31	1 day 28(ON,G)

It was good to see a revival of activity from 9J, via 9J2KC, and V5, due to a visit by ZS4NS.

Europe<>Western Africa

	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
'Med'	+	+		+	+	+	+	+	+	+	+	+	+	+	+	+		+	+				+	+	+	+	+	+		+	+
'North'	+	+		+				+	+							+		+	+						+		+				

	Mediterranean	North
9J	9 days 3,5,8,9,12,16,24,28,31	1 day 28(ON,G)
5N	16 days 1 2 6 7 11 12 16 18 19 23-27 30 31	5 days 1(G,PA) 2(YO) 18(DL) 19(OE) 25(HB)
TR	12 days 1,2,4-6,8-10 12 15 27 30	2 days 4(DL) 8(HB,OE,ON)
5U	6 days 8,9,19,24,25,27	5 days 8(DL,G,OE) 9(G,ON) 16(G) 19(OE) 27(HB)
J5	12 days 9,10,12-16 18,26-28 31	1 day 9(G)
9L	6 days 1,2,4,8,12,16	1 day 1(G) 2(G,HB)

Costas, SV1DH, more upbeat this month, reports West African video every day but one. Amateur reports were not quite so prolific, despite the stimulus of expedition activity from J5, 5U and 9L. Openings were reported from the Mediterranean on 26 days (2002 28) and from northern Europe on 10 days (19), including interestingly enough the relatively disturbed 27th. Mediterranean stations had openings on the 23rd and 24th, when the solar flux was under 100, but these did not reach further north.

The ST0RY expedition raised great interest, but the few contacts were all with the Mediterranean, as indeed were the other reports in the box below. Reunion made a small but welcome reappearance (but no sign of the beacon). The 9Q and VQ9 operations also had very limited success

Europe<>Other Africa

FR 2 days 19 23 ST 3 days 24,25,28
VQ9 4 days 10,24,25,28 9Q 3 days 2,9,13
J2 3 days 3,4,12

There were no reports of propagation between Europe and W/VE. However, FM was reported into the Mediterranean on no fewer than 7 days (9-13, 17,18), mostly by scatter (qtf 230 from Iberia), together with FJ on three days (3,6,7), with FS on the 7th, 9Z on the 11th, KP4 on the 17th, ZF on the 18th. A small haul - but a shade better than last year. Some at least of these openings appear to have been associated with an enhancement prelude to a geomagnetic disturbance, though there is no neat correlation. Contacts with South America are discussed in a later section.

OH2LX indicates that there were no reports of sporadic-E in Finland (which apparently also had no F-layer openings, along with the whole swathe from the Baltic northward). However, Es was tentatively identified by operators further south on several days. Attributions to 'backscatter' occurred on a number of days. 'JT6M' operation was increasingly evident in both DX contacts and within Europe. A high proportion of the JT6M reports within Europe left the assumed propagation mode unclear.

Mar 1 0944 TR0A>I0 10-1100 TR0A>EA7 5Ztv>SV1 12-1300 TR0A>I5,F 1347 ZS6TWB>I5 14-1500 V51E>F,I5,9H,EA6,HB,GW F>I5(bs) 3Ctv>GW HB>EA6(bs) 5N6NDP/9>F,GW,5B,9A,I3,PA,I0,I8 15-1600 9L1BTB>F,EA1,G 5N6NDP/9>I5,9A,I1 I4>9A V51E>HB,I5,I4,F 3Ctv>I1 18-1900 ZS6TWB>9H,I0 19-2000 ZS6NK>9H 7Q7SIX>9H ZS6TWB>EA6 21-2200 5N6NDP/9>9H,I0,CT3

Mar 2 08-0900 ON>LX 10-1100 G>DL IZ1EPM>LA LA>I1(Es) SP>EI 11-1200 TR0A>I5 11-1200 5Ztv>SV1 5N6NDP>EA7,9A,I8,SV1,YO7 5B>SV1(bs) 12-1300 5N6NDP>F,I2,I5 13-1400 3Ctv>I0 5Ubc>F 14-1500 ZS6TWB>9H FY5LS>CT3 9L1BTB>I0,F,HB 15-1600 9L1BTB>I1,I8 17-1800 SV1SIX,4X4SIX>ZS6 ZS6GVD>9H TR0A>EA6 7Q7SIX>EA6 49,2(CE)>EA7 18-1900 ZS6WB>I0 LU9EHF>EA7 9J2KC>EA6,9H LU1DMA,LW3EX>EA7 19-2000 Z21FO,7Q7RM>EA7 21-2200 ZD8VHF>EA6 9L1BTB>EA6,CT3 5N6NDP/9>I0,CT3 2215 ZD8VHF>9H

Mar 3 10-1100 ZS6WB>YO7,YU1 ZS6AXT>I8 ZS6AVP>I8 11-1200 ZS6TWB>HB,I1,S5,9A ZS6WB>9a ZS6DN>9A 13-1400 ZS6TWB>OE3,I1,DL,I5 ZS6DN>9A,I3 ZS6AVP>I9,9A ZS6AXT>9A,I2 ZS6AYE>9A,I3 ZS6AAE>I9 ZS6ADE>I1 14-1500 ZS6TWB>I2 ZS6NK>I1 S5>OE3 ZS6AYE>EA5 15-1600 J28UN>9H V51WK>EA7 ZS6GVD>9H 16-1700 ZS6DN>9H 3Ctv>9A OE6>9A 17-1800 ZS6AVP>9H ZS6RAD>YU1 LU8DIO>CT,EA7 CX4AAJ,CT3,FJ5DX(sc)>EA7 LW3EX>EA7,CT ZS6OB>I9 ZS6JT>SP3 LW9EHJ>CT 18-1900 PY1RO,CN,LU2DPW,CE3SAD>EA7 J28UN>I9 ZS6TWB>I5,F ZS6GVD>I9 ZS6AYE,ZS6DN,7Q7SIX>F 19-2000 9J2KC>I0,EA7,EH3 ZS6NK>EH3,EH5 2014 ZS6TWB>I0 2206 S5>I5

Mar 4 0706 ZS6WB>5B 14-1500 TR0A>I5,I1,DL FY5LS>CT3 16-1700 ZS6TWB>I5 F>I5(bs) 1759 LU5EG>CT 18-1900 LU1DMA>EA7 CX4CR,LU1BQ>CT HB9SIX>DL 21-2200 ZD8VHF>CT,9H EH8>CT3 9L1BTB>9H 22-2300 9L1BTB>EA3,EA5,EA4 EH7>EH8(bs) PY2CDS>EA7,9H,CT PY2XAT,PY7ZZ>9H 23-2400 CT>9L

Mar 5 17-1800 Z22JE>9H ZS6GVD>9H 7Q7SIX>EA6 TR0A,TR8CA>EA6,F LX>DL 18-1900 CT0SIX>I2 9J2KC>EA6 19-2000 9J2KC>I9,EA5 7Q7SIX>9H 20-2100 PY1RO>EA6,CT,EH5 2134 I0>9H(bs) 2240 PY1RO>9H

Mar 6 0710 PA1SIX>LX 1249 ZS6TWB>I1 13-1400 3Ctv>G TR0A>I0,I2 TR8CA>I0 14-1500 TR0A>F15-1600 F>I5(bs) TR0A>I1,9H 7Q7SIX>I5 4U1ITU>S5,I2,HB I5>F F>I1(bs) 16-1700 ZS6TWB>I5 Z22JE>EA7 17-1800 FJ5DX>EA7(sc) Z22JE>I9 V51E>I0 ZS6TWB>I5 9L1BTB>LZ2 7Q7SIX>I0 ZS6GVD>I5 18-1900 ZS6TWB>I1 1949 7Q7SIX>EH5 20-2100 PY1RO>EH5,EH7 5N6NDP/9>I8,I5 21-2200 I9>I5(bs) 2346 ZD8VHF>I5

Mar 7 1250 5Ubc>EI 13-1400 3Ctv>G 5Ubc>ON,DL 17-1800 FJ5DX>EA7(sc) 9H>IS0,EA6 G>OE5 1954-5 5N6NDP/9>EA6,9H 2246 PP2SIX,LU,ZD8VHF,49.2(CE)>EA7 23-2400 PY2XB,XQ3SIX,LU7FA,CE3SAD>EA7 ZD8VHF>9H

Mar 8 0006 PY4LH>EA7 07-0800 YU1>F 08-0900 F>OE5 F>F 09-1000 I5>F 10-1100 HB>F,ON 11-1200 TR0A>OE5 5Ubc>EI,I5,ON 13-1400 9L1BTB>EA5,F I5>F TR0A>F HB>F(bs) 3Ctv>PA,OK2 5Ubc>I2 TR8CA>ON,I2,HB F>I9 14-1500 Z22JE>CT3 3Ctv>GW 15-1600 F>I2(bs) I0>9A 9H>I5(bs) 7Q7SIX>I5 16-1700 5U7JB>G,F,9A,I1,I2,I4,DL 17-1800 5U7JB>OE3 49MHz(CE)>EA7 V5!E>CT LU5VV>CT,EA7 EH8>EA7 EH3>EH1,I5,CT I5>F(bs) LX0SIX>DL(t) ZS6GVD>F 18-1900 CX4CR>CN,EA6 ZS6GVD>I5,I8,EH3 PY5CC>9H 7Q7SIX>I0 19-2000 CX4CR>CN PY1RO>SV1 PY2RO>9H 9J2KC>SV1 PY2NQ>9H PY2XB>I9,9H LW1DZ>EA6 20-2100 PY2RO>I9 PY2CDS>9H 9J2KC>I5,SV8,CN,9H 7Q7SIX>CN

Mar 9 0631 F>9A 09-1000 OE6>S5,OK2 S5>I2 10-1100 I3>I2 S5,I3>I1 11-1200 S5>PA 13-1400 3Ctv>F 7Q7SIX>9H I0>LA 14-1500 TR0A>F I0>I8 F>9A TR0A>I1 F>OE5 15-1600 5Ubc>SP4,SP6, OK2,PA 3Ctv>OK2 16-1700 F>9A(bs) F>I1(bs) 5U7JB,5U7JK,5U7JD>9A,I1,F,CT,G, I8,ON I5>9H I6>9A(bs) LU7WW>CT 17-1800 FM5WD>EA7,CT(qtf 226) 5U7JK,5U7JB>EA3,I1,I2,9A, S5,CN,9H,F, CT EH8,EH3>CT(bs) FY1FL>9H,CN,EA6,EA5,CT EH7>CT 18-1900 LU1YBB>EA7 EH3,EH9>CT J5UDX>F,CT,I0,EA1,EA7,GW,EA5,I8,I1 FY1FL>EA6 19-2000 CN>CT CT3>CT J5UDX>F ZS6BTW> F 7Q7SIX>I5 PY5CC>CN,IS0 PY2XAT>9H ZP5PT>9H 9Q1A/2>F 20-2100 9Q1A/2>CT,CN,I8,I9, EA5,I0,EA3 LU2NI>9H,5B PY1RO>EA3 PY2XB>EA7 J5UDX>I9,EA5 21-2200 9Q1A/2>F,EA5 9J2KC>5B ZP5ZR,LU2NI>SV1 J5UDX>CN,EA3,EA8,I0 ZD8VHF>I0,F 22-2300 ZD8VHF,PY>SV1 J5UDX>EA2,I5,EA7

PY1VOY>I0,F PY1RO>F CE3SAD>I5,I9 PP5ZAS>F ZP6CW>I9,EA8,F PY2CDS>I5 PY2XB>I0,I8 PY1NDX>F,9H PY2BT>I0 ZP5ZR>I8 23-2400 PY7ZZ>I9 PY2CDS>I5

Mar 10 15-1600 3Ctv>F TR0A>I0 1647-59 J5UDX>I5,EA7 17-1800 J5UDX>I0,EA3,I8,F 9H1AW>TR FM5WD,FM5AD>EA7(sc),CT,EA3,F J5UDX>F,EA6,CT 19-2000 LU9EHF,CEbc>EA7 CX4CR>CN,EA7,CT3 FY5LS>CT3

Mar 11 0054 LU3HR>EA8 1101 S55ZRS>OE6 1347 TR0A>I0 14-1500 5Ztv,3Ctv>SV1 TR0A>F 15-1600 F>I1,5B(BS) 16-1700 FM5WD>EH3,F,EA5 F>I1(bs) 17-1800 F>I5(bs) 9Z4BM>CT3 FM5WD>EA6,EA7,F FM5WE>F,EA7(qtf 220) FY5LS>EA5,IS0 F>I0,I5(bs) FM1DQ>CT3 18-1900 LU6WBH,EH8>EA7 LU7WW>F,EA7 EH8>CN **VP6DIA**>CN EH7>EH3 19-2000 **VP6DIA**>EA7(qtf 230) **VP6DIA**>CN,EA7,EH8 20-2100 PY5CC>IS0,I0 9Z4BM>EA7 FY5LS>CT3 **VP6DIA**>CT3 **ZL2TPY**>EA7 5N6NDP/9>EH3 PY5CC>EA7 21-2200 47.9(CE)>I0 **VP6DIA**>EH8 IS0>EA6 PY7ZZ>I5 22-2300 PT2GE>I5(qtf 210) PY5EG>I0 PY1RO,PP1CZ>F PY2CDS>I5 PY2PAI>EA5,EA7 PY1JRS,PT2GE>EA7 PP1CZ>EA5 23-2400 PP1CZ>I5 ZD8VHF>EA5 2343 **VP6DIA**>EA8BPX

Mar 12 10-1100 I5,I9>I8 1143 ZS6NK>YU1 SV1SIX,LZ,5B4CY>ZS6 12-1300 ZS6TWB>LZ3,I1,DL,I5 ZS6WB>9A,I5 ZS6NK,ZS6AVP,ZS6OB>I5 13-1400 ZS6AVP>I0,YO7 ZS6AXT>YO7 ZS6NK>I0 14-1500 FR1GZ>5B 15-1600 J28UN>I8 16-1700 IK5ZUL>I8 F>I1(bs) ZS6NK,ZS6AVP>YO7 ZS6GVD> EA6,I8,I9 F>I9(bs) 7Q7SIX>I9 17-1800 ZS6TWB,ZS6DN>EA6 7Q7SIX>F,EA6 FY5LS>9H FM5WD> EA7(qtf 220),F(220) EA7>F(bs) 18-1900 9J2KC>JY OH1>SM5 19-2000 9J2KC>I9,SV2,5B J5UCW> EA7 7Q7RM>I9 20-2100 PY1RO>EA7 **VP6DIA**>EA8 J5UCW>I9,IS0,CT 5N6NDP/9>CT,SV1 21-2200 5N6NDP/9>EA5 J5UCW>EH5,CT3 PY7ZZ>I9 22-2300 9L1BTB>EA7 J5UCW>CT,EA7

Mar 13 00-0100 PY2XB>9H CE3SAD>EH8 10-1100 JA1VOK>EA5(?) 16-1700 3Ctv>F LU6XQ>EA7 J5UCW>F,I8,I9 4X>7Q7LA 17-1800 J5UCW>EA4,I0,F,EA5,CT,S5 PY9NM>CT,EA7 ZS6WB>I9 FY5LS>EA6,EA7 FM5WD>EA7 EA7>EA5(bs) 18-1900 FY5LS>CN,F 20-2100 9Q1A/2>CN,9H 21-2200 ZD8VHF>IS0 22-2300 PY1RO>CT J5UCW>EA5,CT 23-2400 PY2BT>EA7

Mar 14 11-1200 OH6>OE6(Es) OZ7IGY,OZ6VHF>I4 1440 ZS6TWB,TR0A>I5 15-1600 GB3MCB>F TR0A>S5 Z22JE,ZS6OB>9H 17-1800 ZS6NK>EA3 FY5LS>EA7 18-1900 J5UCW>EA3,EA5,CT,CN LU3DCA>EA7 19-2000 PY1RO>I9 PY5CC>I9,EA7

Mar 15 08-0900 F>OE5,LY LY,F>DL 09-1000 LY>OE5 10-1100 LX0SIX>DL(t) 5B>JY 11-1200 FR1GZ>JY 14-1500 ZS6TWB>EA7 ZS6NK>I0 5B>I0 ZS6RMK>EA7 ZS6DN>I9 ZS4>I9 15-1600 I4>S5 ZS6STN>9H J5UCW>I0,EA7 16-1700 3Ctv>GW J5UCW>EA5,EA6,S5,9A ZS6STN>9H,EA6 ZS6RMK>9H 17-1800 ZS4BFN>9H ZS6OB,ZS6WB>EA5 OE3>I8 18-1900 J5UCW>EA6,I5 PY1RO,PY1VOY>9H ZS6RMK>I0,I8 PY1VOY>EA7 19-2000 PY2XB>IS0 PY1RO>EA6,CN,EA1 CX4CR>EA6 PY2XB>CN 20-2100 PY2RO>EA6 21-2200 ZP6CW>5B 5N6NDP/9>EH8 22-2300 PY2RO>EA7

Mar 16 07-0800 ON>F,DL S5>SP6(bs) OH3>ON 08-0900 OE5>ON S5>9A F>OZ,EA7 09-1000 ON>SM7,OZ SM3>ON 10-1100 ON>DL GW>ON 12-1300 EH8,EH3>CT PA>LY 13-1400 PA>LY,OH1 OH1>9A PA>F EH8>LZ1 LA>PA JR6EXN>5B 14-1500 F>LA ON>F 5N6NDP/9,FR1GZ>5B ZS6TWB>I0 1551 ZS6OB>I9 ZS6NK>YO7 16-1700 ZS6OB>YO7 PY1NDX>I9,I7 PY1RO,7Q7SIX>SV1 3Ctv>SV1,OK2 PY5CC>EA7,EA5,I9,ON PY2PAI>9H,I9 5Ubc>9A OK1>OE5 I4>I1 ZS6OB>I0 Z22JE>CN,5B,I8,I9 J5UCW,J5UDX>I5,CT,I1,F,I0 EH6>9H 5N6NDP/9>F 5U7JK>F,GW 17-1800 5N6NDP/9>CT J5UCW>I1,I8,F,EA2,CN,EH3,CT 7Q7SIX>F EH6>CT PY2PAI>IS0 5U7JK>CT,F ZS6GVD>CT,F ZS6OB>F ZS4NS>9H ZR6DXB>CT,9H 18-1900 J5UCW>F FY5LS>EA5,EA6,EA7 ZR6DXB>YO7,I5 9J2KC>I5,I7 Z22JE>I7 7Q7SIX>IS0 aurora 1932 PY2XB>I0 20-2100 5N6NDP/9>I0(skew) ZS6TWB>SV1(qtf 230) 7Q7SIX,5N6NDP/9,3Ctv>SV1 J5UCW>I0,CT 5N6NDP/9>CT3,CN LU8MB,PY2NDX>EA7 21-2200 9L1BTB>I1,F ZP6CW>EA5 J5UCW>CT,I5,I8 FY5LS,LU2NI>CT3 22-2300 J5UCW>EA7,CT,EA2,I8 23-2400 J5UCW>EA5

Mar 17 08-0900 JA5AIE>5B(sc?) 13-1400 5Ztv,3Ctv>SV1 14-1500 5B>JY,SV1 I0>SV1(sc) EA3>EA4 17-1800 PY1RO>I8,I9 PY1VOY>I9,I8,EA5,EA6 18-1900 FM5WD>EA7,CN KP4EIT,CN >EA7 KP4EIT>EH8 19-2000 PY1VOY>IS0,EA5 LU2NI,PY4OY,PY2VA >EA7

Mar 18 0538 W7GJ>PA(eme) F>9A(ms) 13-1400 ZS6TWB>EA5 ZS6WB>CT,I0,I4,I5,PA(te+ms) ZS6AVP>I5 14-1500 Z22JE>I8 ZS6AVP>F ZS6MVW>I9 15-1600 EH5,5B,4X>I9 16-1700 7Q7RM>I9 5N6NDP/9>I9,S5,F,DL,I2,I1 J5UCW>S5 Z22JE>I9 7Q7LA>I9,IS0 V51E>EA6,EA7,I9 TR0A>F 17-1800 5N6NDP/9>F V51E>S5 ZS6TWB>F CX4CR>EA4 LU9EHF,LU3DCA,CX3AN>EA7 ZS6GVD>F PY1RO>9H 5N6NDP/9>F,I4 ZS6WB>I8 FY5LS>9H T7>OE6 G>F 18-1900 5B>S5 PY1RO,PY5CC,LW3EX>EA7 ZF1DC>CT(sc) LU,CX>JY PY1RO>I5,S5 FM5WD>EA7(qtf 230) PY1RO>I0,EA5 XQ3SIX>TR8CA PY0FF>I8 19-2000 PY5CC>JY LU4EJ>IS0 21-2200 CX1CCC,CX3AN,PY5CC>5B PY1RO>EA5 5N6EAM>SV1 LU3DCA>9H 22-2300 ZP5PT>5B LW1DZ>9H

Mar 19 11-1200 FR1GZ>9H,5B,EA5 12-1300 5Ubc>OK1 13-1400 ZS6TWB>I5 Z22JE>I8,F,5B 7Q7LA>EA7 14-1500 PA>LA(ms) 7Q7LA>CT3 16-1700 5U7JK>I8,I9,5B,I0 17-1800 PY1RO>I9 5N6NDP/9>F,9A,I8,OE8,I0,T7 LU1DMA,PY1RO>EA7 5U7JK>OE8,EA7,9A,9H LU8DIO>I8 5B>I4 7Q7LA>SV1,5B,I8 19-2000 7Q7LA>I9 OH1>ON TR0A>SV1 PY1VOY>EA7 CX3AN>JY 2010 LU3DCA>JY 21-2200 PY2EPY>CT

Mar 20 0954 G>LA 15-1600 ZS6AXT>F,EA7 ZS6WB>I9,I0,DL,SP6,I5 ZS6AYE,ZS6MVW>F TR0A>F 16-1700 V51E>I0 PY1RO>I9,I8 CX3AN>I9,I8 PY5CC>I6 CX4CR>I9 CEbc>I9 LU1DZK>I9 7Q7LA>5B 17-1800 ZS6TWB>I5 18-1900 GB3MCB>F PP5JD>CT 19-2000 PP5JD>CT,EH3 SP3>OH1,SP9 20-2100 OH1>OH6(bs) SP6>LA 2249 JX7SIX>EI

Mar 21 1452 ZS6TWB>EA7 18-1900 I5>OE5

Mar 22 1026 I0>F I5>PA 1143 ZS6TWB,5Ztv>SV1 12-1300 ZS6NK>EH3 13-1400 V5/ZS4NS>EH3,I5,I3,I0,F 3Ctv>GW

Mar 24 1058 5Ztv>SV1 12-1300 ZS6TWB,ZS6DN,5Ztv>SV1 ZS6WB>9A 13-1400 V51/ZS4NS>SV1,I7,I8 ZS6WB>I4 ZS6RMK>I5 14-1500 V51/ZS4NS>EA5 ST0RY>I5,I7,EA3,I9 15-1600 ST0RY>EA5,I4,9A ZS6WB>9A V51/ZS4NS>9A ZS6NK>YU1 ZS6DN,ZS6TWB>9A ZS6NK>I9 Z22JE>EA7F ZS6OB>9A VQ9X>I8 5U7JK>I8 16-1700 5U7JK,5U7JB>EA5,I2,I8,I9,F Z22JE>I8,EA6 V51/ZS4NS>YO7,I9,I8 ZS6OB>EA6 ZS6AVP>I9,I8 17-1800 PY1RO>EA6 V51/ZS4NS>I7 PY5CC>EA6 I9>I0,I2 19-2000 3Ctv,5Ntv>SV1 Z22JE>CT,CT3 5N6NDP/9>CT 9J2KC>CT3,EA5 ZS6NK,TR8CA>CT3 20-2100 V51/ZS4NS>CT,CT3 I9,I0 21-2200 ZP6CW>5B ZD8VHF>IS0,I9

Mar 25 13-1400 I9>I2(bs) Z22JE>EA3 14-1500 Z22JE>9H,I0 15-1600 ST0RY>I9 V51/ZS4NS>I9,EA5 I9>SV1 16-1700 OH8>OH6 VQ9LA>5B 5N6NDP/9>HB,I1,T7,9A,EA5 5U7JB>EA7,EA3,I4 UY5>5B 17-1800 VQ9LA>5B,EA8 5N6NDP/9>I3 18-1900 OH8>OH6 OZ>ON SP5,OH3>LY OH0>OH6,ON OZ>ON,PA 19-2000 OH0>LY 7Q7SIX>IS0 OZ>ON G>OZ(ms),ON,PA OH8>OH6 PY1RO>EA7,CN 5N6NDP/9>CT OZ>PA OH3>LY 20-2100 G>OZ,PA PY1RO>EA6 ZD8VHF>I9 PA,F>OZ 21-2200 ZD8VHF>IS0 OH8>OH6,SM3 OZ>LA PY1RO>CT 23-2400 PV2I>EA7

Mar 26 06-0700 SM7>PA(ms) 0917 G>OE5 1101 F>OE5 16-1700 5N6NDP/9>I9,9A,EA7,I2,I3 Z22JE>9H,I9 ZS6TWB>I9 17-1800 5N6NDP/9>EA6,I4,T7,EA3 I9>EA6(bs) EH8>EH7 I9>I2 18-1900 I9>I8 20-2100 5N5NDP/9>CN,SV1,CT,CT3 OH9SIX>OH6 21-2200 PY5CC>EH8 J5UDX>9H 2243 PY5CC>CT3

Mar 27 12-1300 S5>I4,I5 IW3FZQ>S5 1313 IK5ZUL>S5 1452 TR0A>S5 15-1600 I2>S5 J5UDX>F 16-1700 J5UDX>EA3,I8,F,I0 5U7JK>I0,EA3,HB 5N6NDP/9>I2,EA3,S5,F 17-1800 J5UDX>F,EA6 PY0FF>EA7 18-1900 PY7ZZ>TR8CA 18-2000 LU9EHF,LU1DMA>EA7 2056 PY5CC>EA3 2201 PY5CC>EA7,CT

Mar 28 0649 SK3SIX>UT1 09-1000 LZ1>I5(bs) 1046 SV9SIX>I0 14-1500 UAEtv>SV1 1548 ZS6TWB>I0 16-1700 ZS6BTE>S5 LU9EHF>EA7 PA>9H I5>S5 LU9EHF>EA7 S5>EA7(Es) 9H>PA LU8MB>I5 5B,I8>S5

ZS6WB>DL,I1 ZS6AXT>DL I9>DL,I5 Z22JE>HB,F,PA,I1 17-1800 F>I5(bs) Z22JE>F LU8MB>5B S5>I0 J5UDX>I5,9A,EA7,EA6,CT,I8 ZS6OB>I2,I3 F>EA7 ST0RY>EA3,EA6, EA7 EA6>EI VQ9X>SV1 OE5>OK1 I9>DL LU6DRV>CT SV1SIX>DL CT>PA 18-1900 5Ubc>F PY1RO>EA6 CT>PA PY5CC>EA6,EH3 19-2000 PY5CC>EA5,I1,9A PY1RO>ON,I1,F,G,EA5 EH1>PA,ON PY2VA>F,G 9J2KC>I0 20-2100 ,9A,I9J2KC>9A,I2,ON,F,I9,GW,CT 9H>F 21-2200 ZD8VHF>SV1,EH3 3Ctv,5Ntv>SV1 I9>I0,I8 23-2400 PY5CC>F LU1DMA,PY7ZZ,PY2VA,PY1RO,PY2BT>EA7

Mar 29 08-0900 F>I3,I5 1040 ST0RY>SV2 11-1200 I9>I0,I2,I1 I2>I0 1306 S55ZRS>T7 14-1500 5B>EA7,I9 I9>EA7(bs) 15-1600 5B>9H,I9 1630 PY5CC>9H 17-1800 I9,9H>IS0 aurora

Mar 30 06-0700 LA>OH1(bs) 07-0800 OE3,G>LA LA>OH6(bs) 09-1000 ON>I3 G,HB>DL PA>I2 10-1100 ON>IS0 I3>PA 1158 ON>LX 13-1400 OD>5B I5>I4 I5>SP6 14-1500 I5>ON,PA 15-1600 I3>9A I9>IS0 5B>IS0,I4 I9>I7 16-1700 7Q7SIX>SV1 ZS6RTWB>SV1 3Ctv>SV1 5N6NDP/9>CN,I2,F,S5,I5 17-1800 CX1CCC,LU1DMA,LU3DCA>EA7 9H>I0 CT3,CN>EA7 EH7>IS0(sc) V51/ZS4NS>IS0,F, I4, CN aurora 20-2100 ZD8VHF>SV1,I0 5Ntv,3Ctv>SV1 7Q7SIX>SV1(qtf 225) 21-2200 TR0A,ZD8VHF,3Ctv>SV1 LU6DRV>EA1

Mar 31 1021 5B>I9 15-1600 FR5CU,FR1EU>9H I9>I2 ZS6AVP>I9 aurora 7Q7RM>I8,EA5 16-1700 7Q7RM>4X,EA3 5B>ZS6 9J2KC>CT,5B JY>5B LU1DCA,CX4CR>EA7 17-1800 J5UDX>CT1 18-1900 J5UDX>CT HB9SIX>DL 5N6NDP/9>CT 19-2000 9J2KC>CT3 PY5CC>I9

50MHz PROPAGATION REPORT FOR MARCH 2003 BY SV1DH

1. Data for all days (31)
2. Relatively good days on: 1,2,4,6,8,9(+),11,12,16,19,24,25,28,30
3. 48 MHz video (3C+5Z)on: 1-20,22-31 (R=97%)
4. 55 MHz video (5N) on: 5,7,9,12,16,24,25,26,28,30 (R=32%)
5. Opening to ZS6 on: 1-6,8-13,15-16,18-20,22-26,28-31 (R=87%)
6. " to 7Q on: 1-3,5-9,11,12,15,16,18-20,25,26,30,31 (R=65%)
7. " to Z2 on: 16,19,24,28,30,31
8. " to V5 on: 1,8,18,24,25
9. " to 5N on: 1,2,6,11,12,16,18,19,23,25-27,30
10. " to J2 on: 1,12
11. " to 9L on: 4
12. " to 9J on: 5,8,9,12,16,28,31
13. " to 9Q on: 9
14. " to ZD8 on: 9,28,30(+) (R=10%)
15. " to TR on: 8,12,18,19,30 (R=16%)
16. " to 5U on: 8,9,19,24,25,27
17. " to FR on: 23
18. " to VQ9 on: 25(1625-1715z),28(1720-1740z)
19. " to PY on: 8,9,16
20. " to LU on: 9
21. " to ZP on: 9
22. " to 5B on: 2,4,16,17(B)
23. " to F on: 4,8,9,16(B)
24. " to I on: 8,17,20,25(B)
25. " to IS on: 18(B)
26. " to EH on: 9(B)
27. " to 9H on: 8(B)
28. " to DL on:28(E)

29.Special events on:

1(0930-1130 MUF to HZ>43Mhz)
2(1030-1130 foF2>12Mhz+1030-1315 MUF to Z>43Mhz+1730 EH7 to CEMuzak)
4(0730 5B to ZS6 early+0930 foF2>13Mhz)
5(1330-1415 MUF to HZ>43Mhz)
6(1115 foF2>13Mhz+1315 MUF to HZ>43Mhz 1715-1745 EH7 to CAR scatter)
7(1700 EH7 to FS sc+1830 EH7 to LU F2)
8(1100 MUF to HZ>43Mhz+1415 S2 to KG6)
9(0715 S2 to JA+1300-1400 MUF to HZ>43Mhz+1715 9H to FY+2100 CE muzak)
10(0745-1115(+) MUF to HZ>43Mhz) 11(1115 FR to JR6+1400-1500 MUF to US>36Mhz+ to HZ>43 Mhz+1715 EH7 to FY+FM sc+1900-2000 EH7 to VP6DI !+2000 EH7 to ZL2+2130 CEMuzak S1)
12(1400 5B to FR+1445 MUF to HZ>43Mhz+1600 VQ9 to JR6+1730 EH7 to FM sc+9H to FY+2030 EH8 to VP6DI)
13(0945 FR+5B+4X to JR6+1730 EH+F to FY+FM)
14(1430 VQ9 to VR2)
15(1000-1230 MUF to HZ>43Mhz+1100 JY to FR)
16(0700-0800 MUF to HZ>43Mhz+0845 VR2 to 9N+1315 BY+VR2 to 9J+1330 5B to VR2+JR6 sc+1430 5B to FR+2000 ZS6/B+7Q/B scattered from 230 deg. only
17(0800 5B to JA sc+1830 EH7 to FM+KP+CE sc+1905 X1.5 flare!)
18(0037 M1.6+0600 M2.5+1208 X1.5 flares!!+1115-1315 MUF to HZ>43Mhz+1745 9H to FY)
19(1115 5B+9H to FR)
20(1300 MUF to HZ>43Mhz+1600 IT to PY+LU+CX)
21(NIL all day)
22(0845 VK8 to VQ9+1700 9H to PY)
23(1030-1130 MUF to HZ>43Mhz)
24(0930-1230 MUF to HZ>43Mhz+1330-1430 VR2 to VQ9)
25(1000-1430 MUF to HZ>43Mhz+1400 VR2 to VQ9+VU+1700 EH8 to VQ9)
26(1330 5B to VU+VU to VR2)
27(0230 CE to HK on 2m TEP strong)
28(1030 5B to YB+1130-1430 MUF to HZ>43Mhz+1350-1420 A6 video 1F2+1915 G to PY)
29(1230-1430 MUF to HZ>43Mhz)
30(1000-1230 MUF to HZ>43Mhz)
31(0615 KH6 to EU video LP!+1200-1330 MUF to HZ>43Mhz)
30. DXCC entities heard/worked during MARCH 2003 : 24 on 4 cont.
31. DXCC entities heard/worked on 9th MARCH 2003 : 11 on 4 cont. 73 COSTAS

The Americas

Auroral-Related Propagation

A relatively substantial crop of reports this month, with some events more widely exploited than in Europe, mainly due to time differences. Reports bring out the value of the K0KP beacon, which was established with aurora specifically in mind; N8PUM and VE4ARM also appear to be particularly useful in auroral terms. Most openings appear to have been relatively weak, with the end of the month providing the exceptions, and the eastern side of the continent was preponderant, with only a sparse sprinkling of VE5-7 and W7 reports.

Mar 1 01-0200 K0KP>W8(55a) VE4ARM>W9(EN09 52a) W8(EN84)>W9(52a)
Mar 3 0030 K0KP>W8(52a) 22-2300 K0KP>W8(EN84 52a) VE3UBL(FN03)>W8(52a) 23-2400 W3(FN10)>W8(EN84 55a) VE4ARM>W8(EN84 54a) W8(EN84)>W8(EN91 55a) VE4VHF>W9(51a) N8PUM>W2(FN42 340) K0KP>W2(FN42) VE3UBL>W9(51a) K0GUV>W9(52a)

Mar 4 00-0100 W8(EN56)>W8(57a) W3(FM19)>W8(EN84 53a) W8>W9(EN71 53a) W0>W8(EN84 56a) W0(EN27)>W9(57a) 01-0200 W3(FN24)>W9(57a) 02-0300 W7(DN62)>W0(DN70 52a)
Mar 6 01-0200 K0KP>W8(EN84 52a) VE2(FN08)>W8(EN84 55a) W0(EN34)>W8(EN84 55a)
Mar 9 0402 K0KP>W9(54a EN36)
Mar 13 01-0200 K0KP,N8PUM>W8(52a)
Mar 14 0948-1000 VE4ARM>W8(53a) K0KP>W8(53a) 1102 VE8BY>W8(55 AE)
Mar 15 00-0100 K0KP>W8(52a) N8PUM>W8(53a) W8>W9 0114 W9>W8 0303 N8PUM>W8(EN65 52a) 0840 K0KP>W8(52a)
Mar 16 20-2100 K0KP>W8(EN36 54a) K0GUV>W8(59a) K8PUM>W2(53a) 21-2200 W2>W8(59a) W2(FN02)>W8(55a) W8(EN84)>W2(FN31) W8(EN91)>W8(53a) 22-2300 W1(FN41)>W8(53a)
Mar 17 22-2300 K0KP>W8(52a) 23-2400 K0KP>W8(52a) W1(FN41)>W8(53a) W0(EN57>W8(55a)
Mar 18 00-0100 W8(EN72)>W8(52a) W8(EN34)>W8(55a) 0729 KL7>VE7(54a) 0155 K0KP>W8(51a)
Mar 20 0851-2 K0KP,VE4ARM>W8(52a)

Mar 21 2328 K0KP>W8(52a)
Mar 22 0549 KG0VL/KL7>VE7(53a)
Mar 27 0061 K0KP>W8(55a) 01-0200 K0KP>W9(52a) VE4ARM>W9(41a) 0629 K0KP>W1(FN44(VE4VHF>W1(FN44 AE) 0719 N8PUM>W1(FN44 AE) 23-2400W1(FN43)>W8(EN84 57a) W0(EN33)>W8(EN84 55a)
Mar 28 0041 VE3>W1(FN43 54a) 07-0800 KL7/KG0VL>VE7 KL7>VE7(57a) 20-2100 VE3UBL>W8(52a) W0(EN37)>W8(51a) 22-2300 W0(EN31)>W9(52a) VE4ARM>W9(52a) K0GUV>W9(51a)
Mar 29 00-0100 N8PUM>W9(52a) W8(EN73)>W9(54a) K0KP>W8(55AE) 02-0300 W9(EN45)>W9(53a) VE4ARM>W9(52a) W0(DN87)>W9(52a) N8PUM>W8(EN84 52a) 03-0400 W8(EN61)>W8(EN84 56a) K0KP>W0-(51a) W9(EN69)>W8(EN84 53a) W8(EN84)>W0(53a) 05-0600 W9(EN44)>W0(54a) W0(EN44)>W8(EN84 54a) VE4VHF>W9(61a) KL7NO>W8(EN84 55AE) 06-0700 VE5>VE7(mode?) WL7YF>VE7(mode?) 07-0800 KL7/KG0VL>VE7(52a) AL7OC>VE7(53a) 21-2200 K0KP>W8(EN84 55a) 22-2300 W1(FN43)>W8(EN84 58a) W2(FN21)>W8(EN84 57a) W2(FM29)>W8(EN84 54a) 23-2400 K0KP>W1(53a) VE4VHF>W1(FN44 AE) W8(EN72)>W8(EN84 54a) W2(FN21)>W9(EN43) VE2MGL>W1(53a) W2(FN30)>W8(EN84 55a) W3>W8(EN84 56a) W9(EN45)>W8(EN84) 57a)
Mar 30 00-0100 VE3(FN04)>W4(EN84 54a) W8(EN84)>W8(43a) VE3>W1(54a) 01-0200 W0(EN32)>W8(EN84 55a) VE3(FN25)>W1(FN43) W8(EN56)>W9(52a) W7(DN76)>W0(DN74 mode?) W8(EN84)>W8(EM79 55a) 0215 K0KP>W1(FN44 AE) 20-2100 VE4ARM>W9(31a) K0KP>W9(51a) N8PUM>W9(41a) W0(EN33)>W9(51a) K0KP>W9(56a) W8(EN84)>W8(EN91 mode?) W8(EN84)>W1(FN43 59a) W8(EN52)>W8(EN84 52a) W9(EN70)>W8(EN84 53a) W1>W8(EN84 56a) N0UD>W9(51a) W0(EN18)>W9(51a) 21-2200 W3(FN10)>W8(EN84 54a) VE3>W3(FN10 54a) W9>W2(FN12 55a) VE3(FN03)>W8(EN84 59a) W9(EN53)>W8(57a) W1(FN43)>W3(42a) W9(EN53)>W8(EN84 58a) W1(FN31)>VE3(55a) VE3(EN58)>W9*55a) W2>VE9(58a) W8(EN82)>W9(53a) VE3(FN25)>W8(EN84) VE3(FN25)>W2 22-2300 VE3(EN90)>W3(54a) W1(FN34)>W1(FN31 55a) W1>VE3(53a) K0KP>W1(52a) VE3>W3(55a) K0KP>W1(53a) W1(FN31)>VE3(55a) K0KP>VE3(56a) VE2(EN90)>W3(53a) E1(FN31)>W8(51a) W7(DN62)>W9 W9(EN53)>W1(55a) W1>W3(56a) W8>W3(54a) W1>W2(55a) VE2(EN90)>W2(FM29 56a) W3(FN11)>W8(55a) W8(EN84)>W3(54a) W1>W9(59a) W2>W8(529a)

Other Modes

March is a relatively good month for propagation between Europe and South America, though inevitably openings were below 2002 levels, with the Mediterranean countries having propagation on 18 days (2002 30), Iberia on 25 days (30) and Northern Europe on only one (3) Individual countries declined very sharply - PY<>Med from 29 days to 18 and PY<>LU down from 22 days to 5 being cases in point, along with CE<>Iberia from 19 days to 2. Propagation was poorest on days when the solar flux fell below 100. On the other hand, openings were reported on several days with relatively high geomagnetic levels, as with Africa possibly because of southerly concentration of ionization.

Europe<>Mainland 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
'Med'				+	+			+	+	+	+	+	+	+	+	+	+	+	+	+								+	+		
'Iberia'		+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+				+	+		+	+	+	+	+
'North'																												+			

Europe <> South America

	Mediterranean	Iberia
PY	18 days 4 5 8-20 28 29 31	days 3-9 11 13-17 19 20 24 25 27-29
LU	5 days 9 18-20 28	16 days 2-4 7-11 13 14 16-19 27 28 30 31
FY	2 days 12 18	5 days 9 11 13 14 16
CX	1 day 20	8 days 3 4 8 10 15 18 30 31
CE	1 day 9	2 days 3 17
ZP	1 day 9	1 day 16
ZD8	10 days 2 4 6 7 9 13 24 25 28 30	4 days 2 4 7 11
PY0F		1 day 27

North PY 1 day 28(G,ON)

Propagation between South America and the US (there was none with Canada) was also down on 2002, with openings on 15 days, compared with 20. There was a marked gap in the second half of the month, corresponding with low solar flux and disturbed days. Most openings were, as usual, into W4 and W5, though occasionally propagation crept up the East Coast or into the Midwest or W6

US<>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
				+				+	+		+	+	+	+	+	+	+	+		+									+	+	+

CE	5 days 4(W5) 8(W7) 17(W4) 29(W5) 30(W4,W5
CX	8 days 8(W5) 14(W1) 15(W4,W5) 17(W0) 18(W1) 29(W5) 30(W4) 31(W4)
FY	2 days 17(W1,W3,W4,W5) 18(W3,W4)
HC	2 days 16(W4,W5) 17(W4)
HC8	3 days 4(W5) 20(W4) 31(W8,W0)
HK	1 day 17(W5)
LU	13 days 4(W5) 8(W5) 9(W4,W5) 11(W6) 13(W5) 14(W5) 15(W4,W5,W0) 16(W5) 17(W1,W4,W5) 18(W3) 20(W4) 29(W5) 30(W1,W4,W5,W7)
PY	4 days 12(W5) 14(W4) 15(W5) 30(W4)
ZP	2 days 16(W5) 30(W5,W6)

The table below is headed South America<>Africa; Brazil<>Africa would be closer to the mark because all openings related to Brazil except the one opening from 9Q, which was with Chile and the opening from Gabon on the 18th, which extended to CE as well as PY.

South America<>Africa

TR 13 days 5 6 10 11 14 16-18 24-28
9L 1 day 6 5N 1 day 17 J5 1 day 12 9Q 1 day 9

Mar 1 00-0100 PP2SIX,PY0FF>CE3 0131 HP1RCP>CE3

Mar 2 00-0100 PJ4/PE1EWR,PJ2BVU>PY2 FG5GP>PY3 01-0200 PJ2BVU>PY3 HC8GR>FY5 21-2200 CT3>PY2 2215 CX4,KP4>PY2 2327-37 XE1KK>CE3,CX4

Mar 3 00-0100 PP5,PY2>PT2 NH7RO>PY2,PP5 PJ6/DJ4SO>PY2 XQ3>PT2 PJ2BVU,PY4>PY2 01-0200 PJ2BVU>PY3 TI5KD>PY3,PT2 PT2>PP5 02-0300 TI2NA,HC8GR>CE3 CE3SAG>TI4 23-2400 PY2,PT2>PR7 EH8BPX>CE3

Mar 4 01-0200 J37LR>PY2,PP5 0258 PP2SIX>CE3 2034 HC8GR>W5OZI 21-2200 CE3RC/6>W5OZI,ZF CX4CR>ZF 2158 LU1VK>W5OZI 2347 LU9AF>KP4

Mar 5 0008 ZLtv>K4RX 08-0900 K4TQR,W5RF,W5VAS>W5 20-2100 PY1,TI2NA,XE1KK,ZF1DC, TG9AFX,TI5KD>PY5 21-2200 TR0A>PY5 HP1RCP,TI2NA>PY 2230 3Ctv>PY1 2343 47.9(CE)>W4

Mar 6 00-0100 WP4JTT,KP2BH>ZZ2 0139 PR7,LU>PY2 1547 LU>LU 1746 EA7KW>HI8ROX 2219 TR0A>PY7 2246 9L1BTB>PY1 2345 CT1EH>ZZ2 2306 PY1RO>PY1

Mar 7 0149 W8>W8 2249 W6>W5(bs) 23-2400 FJ5DX>PY7 EH7KW>PY1

Mar 8 00-0100 FM5WE>PY2 LU3DCA>YV5 XE1KK,JA6JKD,JA3EGE/6>PY1 TI5KD>PY2 01-0200 PY2,LU1DMA>YV1 HR1RBM>PY2 19-2000 9H5YZ>PY2 SV1SIX>PY5 EAtv>CE3 20-2100 IT9INO>PY2 W7,W4>W5(bs) 9H1AW>PY2 21-2200 9H1EI>PY5 WA7JTM>CE3 22-2300 CX4CR>W5 TG9AFX>CE3,CX2 LW1DZ>W5 23-2400 XE2HWB>CE3

Mar 9 00-0100 FM5WE>LU FG5GP>LU,PY5 PJ6/DJ4SO>PY2 P2>PY1 PY7>PY5 JA6JKD>PY5 01-0200 HP1AC>PY5 FG5FP>PU2 VR2XMT>PY2 JR3TVH/6,JA3EGE/6>PY2 02-0300 VR2XMT>PY2,PR7 PR7>PU2 18-1900 W4,LU1YBB,49.2(CE)>W4 20-2100 LW1DZ>W4,KP4 EH5AX>PY2 21-2200 9Q1A/2>LU 22-2300 ZL2TPY,ZL4AAA>W6 CX3AN>KP4 F6FHP,9H5YZ>PY5 23-2400 EH5FKX>PY2 **VP6DIA**>W6,XE1 LU7WW>W5

Mar 10 01-0200 9H1AW>PP1 XE1KK>CE3 02-0300 TI2NA>PT2 2259 TR0A>PT2 23-2400 TR0A>ZZ2 TI2NA>PY1 KH6SX>PY1,W6

Mar 11 0026 V31JP>CE3 0148 KH6HME>PY1 03-0400 XE1KK,TI2NA,HP1RCP>CE3 1334 K0KP>W8 1606 W8>W8 20-2100 W6,W0,W5>W5(bs) W5>W4(bs) TR0A>PT2 21-2200 LU3DCA>W6 **VP6DIA**>FM5WD W0>W0(bs) 9H1EI,IW5DHN>PT2 LU1DZK>KP4 TR0A>PY1 22-2300 W5>W5(bs) LU1CJC>KP4 EA7KW>PT2 I9,E5AGR,9H5SD>PP1 **VP6DIA**>XE1 23-2400 TR0A>PT2 ZLtv>W4 **VP6DIA**>W4,W6,PY2,PY1 FG5GP,FM5WE>PY2 EH8>ZZ2 KP2/AA6YQ>PY5

Mar 12 00-0100 KP2/AA6YQ>PY2 NH7RO>LU FY5LS>YV5,YV4 PT2>PY5 **VP6DIA**>PT2 01-0200 **VP6DIA**>YV4 NH7RO,LU8MB>YV4 PY8>YV5 HH4/N2WB>PY2 YV4>PT2 J37LR,PY8>PY2 XE1>W0(Es) W5>XE1 FG5FP>CE3,PY2 02-0300 J37LR>PT2 P49MR>LU TI5KD>ZP6 WD5K>CE3 PY3ISO>WD5K FG6GP>CE3 03-0400 CE3RY>W5 1433 W9>W8(sc) 21-2200 CN8NK>PY5 22-2300 J5UCW>PY2 23-2400 W5>W5(bs) HI8ROX>PY5 PY5EG,PY3ISO>FG5GP CT3DL>ZP6,PP1

Mar 13 00-0100 YV5,ZP6,PY2>PP1 9L1BTB>ZP6,PP1 HP1RCP>CE3 01-0200 PY2>PY5 P49MR>LU W3XO/5>CE3 1512 K0KP>W8 21-2200 LU1DMA,47.9(CE)>W4 EH8BPX>ZZ2 22-2300 LW1DZ>KP4 VK2ZXC>W6 VKtv>W4

Mar 14 00-0100 PY8>PY2 J37LR,FG5FR,PY7>PY2 01-0200 YV5>PY2 0235 YS2MRL>LU 0313 HC8GR,TI2NA,XE1KK>CE3 19-2000 IT9RDG>PY1 2135 TR0A>PT2 22-2300 ZLtv>W4 NH7RO>W6 VK2ZXC,VK4JSR>W6 LU>PT2 HI8ROX>PY5 23-2400 VK4ABW>W6 VK/ZLtv>PY5 LU3DCA>KP2 NW5E>LU LU1YNE>W5 PY3OG>W4 CX4CR>W1 FM5WE>PY3

Mar 15 00-0100 LU7DW>W4,XE1 PY0FF>CE3 01-0200 W3>W8(t) YS2MRL>PY3 TI2NA,YV4AB>ZP6 0237 HC8GR>YV1 0306 V31JP>LU 0912 9M2TO>HL2 1259 N8PUM>W8(sc) 1456 W5>W8(ms) 1547 N0LL>W8 1621 W5VAS>W9 20-2100 EA5VQ>PY1 AA5XE>CX2 CX3CR,LU1DMA,LU8DIO,LU9EHF>W4 21-2200 LU3DCA>W5 CT3DL>PY2 LU7DZ,LU8AHW, LW3EX,LW5DX>W4 W5OZI,WH6O>PY2 LW3EX>W5 CE3SAD>Ww,W5 LU,CE3>PY2 22-2300 KP2/AA6YQ>CE3 LW1DZ>W4 LU1YBB>W4,W5,W0 CX4CR>W4 23-2400 TI2NA>CE3

Mar 16 00-0100 KH6/K6MIO>PY2 FM5WD,FM5WE,FG5GP>PY2 LU1DZK,LU3DCA>W5 01-0200 TI5KD>ZP6,ZF1DC W3>W1 PY0FF>ZP6 KH6SX>PY2 AA5XE>ZP6 3G1P>PY1,PY2,PY7 W5VAS>CE3 NH7RO>PY2 W4>W2 02-0300 HK4>PP5 KH6IAA>PY2 0957 EH8JC>PY5 1038 EH8JC>KP4 1215 EH8JC>PY5 1554 W8>W8(sc) 16-1700 5B4AGM,SV1DH,I8LPR,IT9KSS>PY5 1750 CT1FMX>LU aurora 20-2100 I0WTD>PY5 21-2200 TR0A>PT2 22-2300 WH6O, KH6/K6MIO> PY5 KH6/K6MIO,NH7RO>ZZ2 NH7RO>W6,W7,LU KH6SX>W7 ZLtv>W4 23-2400 KH6SX, KH6/K6MIO,NH7RO>W6 ZLtv>W0 TI5KD>CE3,W4,W5 W4,W5(bs)>W5 HC3AP>W4,W5 W5OZI>ZP6 YV4>PP5 XE1KK>W2(sc) NH7RO>PY2

Mar 17 00-0100 PY2OF>W5 LU2DEK>W4,W5 XE1>KP4,W4 HC3AP>W4 W5>W4 HK4SAN>W5 LU7DW>W1 CE3RY>W4 01-0200 N0LL>W8 W0>W4 W5>W8 02-0300 W8>W5 18-1900 FY5LS>W5,W4,W1,W3 9Z4BM>W5 CX4CR>W0 19-2000 LU3DCA>W5 FY5LS>W4 LU8DIO>KP4 PY0FF>LU EH8JF>PY2 LU8AHW>W4 20-2100 LU9EHF>W5,ZZ2 48MHz(CE)>W3 CX1>PY5 TR0A,5N6NDP/9>PT2 22-2300 TR0A>PY1 2323 TR0A>PY7

Mar 18 00-0100 NH7RO>PY2 KH6HME>ZP6 KH6SX>ZZ2 TR0A>PT2 18-1900 SV9XBG>PY1 FY5LS>W3,W4 LU1DMA>W3 CX1CCC>W1 TR0A>PY5 20-2100 XQ3SIX>FY5LS 5B4FL>CX1,PY5 21-2200 EH8JF>PY2 23-2400 TR0A>PY1 FM5WD>CE3

Mar 19 00-0100 V44KAI>CE3 NH7RO>CX,PY5 TR0A>PY701-0200 KH6SX>PY1 03-0400 JS3CDB,PJ2BVU>PY5 0728 KG0VL/KL7>VE7 1422 IT9NVA>PY1 1627 PY1VOY>PY1 17-1800 V73AC>CX3AN(?) 211-2200 EH8JC>KP4 LU>ZZ2 23-2400 CX4CR,LU3HR>KP4

Mar 20 00-0100 J37LR>PY2 0140 HK3>PT2 0231-44 KH6SX,ZP5>PT2 !^-1700 EH7BYM>PP5 18-1900 EH7DJQ,EH4EED>PP5 2135 LU9EHF>PR7 2217 HC8GR,LU6DRV,LU9DFN>W4

Mar 21 0334 JR4PMX>ZZ2 0405 W5>W2 20-2100 CE4>PY1

Mar 22 0027 XE1KK>CE3 23-2400 PY2SFY>CE3
Mar 24 1721 IE9/I23AND>PY5 18-1900 EH8BPX>PY5 1938 3Ctv>ZF 22-2300 TR0A,ZD8VHF>PT2

Mar 25 00-0100 YV4AB>ZP 01-0200 XE1KK>ZP6 PJ2BVU>LU LU1FCO>KP4 J37LR>ZP6,LU YV4AB>PP5 TI2NA>ZP6 TI5KD>PP5,PY2 02-0300 KH6SX,YS2MRL>ZP6 03-0400 HC8/LU8ADX>LU 1938 CN8KD>PY5 2019 EA6VQ>PY5 2146 IE9/I2AND>PY1 2222 TR0A>PY7 23-2400 PY2>PR7 PV2I>PY7,YV1 FM5WE>LU

Mar 26 1915 TI5KD>FY5LS 2302 TR0A>PY7

Mar 27 0152 WH6DQ>PY1 02-0300 TG9AFX>PY1 HR1RBM>PY2,PY5 03-0400 FJ5DX,TI5KD, TG9AFX,PJ2BVU>LU 1904 PT7>FY5 20-2100 HC8/LU8ADX>W7,W5,W8,W3,W0,W4 21-2200 HC8/LU8ADX>W5 2235 LU9EHF>XE1 XE1KK>ZF

Mar 28 0152 V44KAI>CE3 0205 9M8tv>PY1 1618 KQ4E>ZF 2125>PY7 2140 IW9/I2AND>PY7 22-2300 F6FHP,EH5FY,CT1EEB>PY5 J1JUX>PY1,PY5 23-2400 PY7>PY5 PT7>PY2,PY5

Mar 29 00-0100 0019 EH7KW>PY7 PY7>PY2 0248 TI2NA>CE3 1553 W1>W5 16-1700 PY2,IE9/I2AND,ZD8VHF>PY5 18-1900 PT7>CE3 LW1DZ>TI4 19-2000 W4(bs),FJ5DX,LU6HI>W5 YS2MRL>CE3 LU3DCA>W5 aurora 20-2100 CX4CR,LU7DZ,LU7WG,LU7WW,CE3SAD,LU3HR>W5 ZX2B>KP4 2227 L71F>KP4 2354 XE1KK>ZP6

Mar 30 00-0100 ZF2>PY1 JE1CUS>CE3 CE3>PY5 01-0200 JE1LDU>CE3 JF2HEV>PY5,ZP6 FJ5DX>PY5 N4IS>PY1 02-0300 NW5E>PY1 CE3>ZP6 JA1VOK/6>PY5 0358 W5>W0 04-0500 W5>W0 0850 W0>W0 1625 47.9(CE)>W4 17-1800 CE3SAD>W1,W4 CX1CCC>W4 LU3DCA>W1 EH8>CE3 18-1900 FJ5DX>W4 W4VQ>CE3 1919 CT3EN>PY1 20-2100 CEbc>W1,W3 aurora CE3RY>W4 CE3SAD>W5 21-2200 ZP6CW>W5 K6LIG>ZP6 HQ2AHC>CE3 LU3DCA,LU8DIO,CE3RY,LW1DZ,ZP6CW>W4 ZF2BI>PP5 YS2MRL>PY5 22-2300 CX4CR>W4 KH6/K6MIO>ZF LU6HVW>W5 LW1DX>W7 XE1KK>CE3

Mar 31 0018 ZLtv>W4 16-1700 5B4AGM,SV9FBM>PY1 1749 48.12(CE)>W2 18-1900 HC8GR>W8 EA/CTtv>W4 PY5>PY2 19-2000 CX3AN>W4 HC8GR>W0 ZF1DC>W0(sc) W7>W5(bs) 20-2100 ZLtv>PY5 ZL2TPY>ZF,W5,W6,W0 TI5KD,TI2ALF,TI5BX>W6 21-2200 TI2ALF>W6 ZLtv>W4 ZD8VHF>ZP6 22-2300 LU>W4

Asia and the Pacific

The highlight was of course VP6DI which, for the few operators who worked them, must have more than compensate for diminishing opportunities elsewhere. Paths to JA were markedly down from South America and disappeared from North Americas but KH6, which was worked from North/Central America on only two days in 2002 featured on six days this year and from South America on 14, compared with 12 a year ago. These openings frequently coincided with above-average levels of geomagnetic activity. There were fewer openings on days when the flux fell below 100.

South America<>Asia/Oceania

KH6	14 days 2(PY) 10(ZP) 11(PY) 12(LU,PY,YV)15(PY) 16(PY) 17(LU) 18(PY,ZP) 19(CX,LU,PY) 20(PY) 25(CE,LU,PY) 27(CX,PY) 30(CE,HC8,LU,PY,ZP) 31(LU,PY)
JA	7 days 8(PY) 9(PY) 12(LU,ZP) 14(CE,CX,PY,LU)
VP6	2 days 11(PY,YV) 12(PY)
VR	1 day 9(PY)

Central/North America<>Asia/Oceania

KH6	6 days 3(XE) 10(W6,XE) 14(W6) 16(W6,W7) 30(ZF,TI) 31(ZF)
VP6	2 days 9(W6,XE) 11(W4,W6,FM)
VK	3 days 1(XE) 13(W6) 14(W6)
ZL	4 days 6(XE) 9(W6) 30(W6) 31(W5,W6,W0,ZF)

Japan

March was, as usual, a good month for propagation between JA and Australia, with openings n every day except the 15th(why?) and 22nd (flux 89). This included the relatively difficult VK2 and VK3 path on, respectively four and 11 days, VK4 on 27, VK6 on 28, VK7 on 1 and VK8 on 26. This was slightly better than in 2002, though below 2000 and 2001. ZL was reported on 6 days (2002 5, 2001 5). VQ9 was reported on 8 days and 9J on one (12th), with 4X on the 13th and 5B on the 13th and 16th.

TO: G3USF FM: JA1VOK ja1vok@jarl.com **6m DX results in JA during March**
DATE: May 8, 2003

DATE TIME(UTC) STATIONS
3/ 1 0208-1100 9M2TO/B, DU1EV/B, FK1TK,8GX,8SIX/b, V73GT,
VK4CXQ,4FNQ,4WDM,4ABP/b,6JQ,6RSX/b,8RAS/b, ZL3NW
2 0300-1330 9M2TO/B,9M2/JI1ETU/b, C21SIX/b, DU1EV,DU1/GM4COK,
N7ET/DU7, FK1TK,8HA,8SIX/b, KH6SX, V73GT, VK4,6JJJ, VK8RAS/b, YB9AY
3 0350-1400 FK8SIX/b, HL1KTX, VK4CXQ,4FNQ,4RTL/b,6RSX/b,8MS
4 0930-1230 VK4JH,4FNQ,6RSX/b,8RAS/b
5 0100-1500 9M2TO/B, C21SIX/b, DU1VDG,DU1EV/B,DU1/GM4COK, FK8SIX/b,
VK4,6JQ,6JJJ,6RSX/b,8RAS/b
6 0315-1000 FK8SIX/b, VK4RGG/b,4RTL/b,6RSX/b,8RAS/b
7 0225-1500 9M2TO/B, DU1EV/B,N7ET/DU7, FK8SIX/b, KG6DX, KH6SX,
KH6HME/B, P29BPL/b, VK2,VK4,6JQ,6RSX/b,8RAS/b
8 0020-0100 PY1RO,2XB,4LH (JR6)
0100-1700 9M2TO/B,9M2/JI1ETU/b, DU1EV/B,DU1/GM4COK, FK8CA,8HA,
FK8SIX/b, VK3SIX,VK4,6RSX/b,8MS,8RAS/b, VR2XMT, YC1BGC
0900-1130 S21YY (JR6)
9 0119-0230 PY1RO,2BT,2XB,2FR,2RO,3RMY,2XAT,2SFY/b,PP2SIX/b,PY5CC,
PY5HSD,7ZZ, VR2XMT (JR6) 0120-1400 FK8SIX/b, VK4,6JQ,6RSX/b,8MS
0507-1108 VU2VVP (JR6) 0730-1300 S21YY (JR6)
10 0230-1300 9M2TO/B,9M2/JI1ETU/b, DU1EV,DU1/GM4COK,N7ET/DU7,
FK8SIX/b, VK4,6JQ,6RSX/b,8MS,8RAS/b, VR2, YC1MH, ZL3AAU
1436-1500 S21YY (JR6) 1520-1700 VQ9X/b (JR6)
11 0020-1900 9M2TO/B, C21SIX/b, FK8CA,8SIX/b, V73GOD, VK4,6JQ,6RSX/b
1100-1200 FR1GZ (JR6) 1430-1525 VQ9X/b (JR6)
12 0210-0400 LU2NI, ZP6CW (JR6)
0215-1400 9M2TO/B,9M2/JI1ETU/b, FK8CA,8SIX/b, VK3DUT,VK4,6JQ,VK6RSX/b, 8RAS/b
1237-1310 9J2KC (JR6) 1600-1630 VQ9X/b (JR6)
13 0244-1100 FK8SIX/b, VK4,6RSX/bv,8RAS/b 0900-1010 4X1IF, 5B4AGM, FR1GZ (JR6)
1300-1500 9M2TO/B,9M2/JI1ETU/b, DU1EV/B,DU1/GM4COK, VK8MS (JR6)
14 0100-0400 LU2NI, PY2SFY/b (JR6) 0155-0200 LU2NI (JA5)
0100-1400 KH6SX, VK2,3PA,3DUT,3SIX,VK4,6RSX/b,8RAS/b, ZL1VHF/b,
0730-0800 FR1GZ (JR6) 1429-1445 VQ9DT (JR6)
2300-1300 9M6LSC, VK2QF,2ZXC,VK4,6RSX/b
2330-0230 CE3RY,3SAD, CX4CR,4AAJ, NH6YK, LU2NI,3DCA,8DIO,LW3EX
16 0300-0400 KH6SX,KH6HME/B, VK4,8RAS/b
0700-1230 9M6LSC, DU1EV/B,N7ET/DU7, P29BPL/b, VK2QF,3PA,3XQ,3DUT,
VK3SIX,3RMV/b,6RSX/b,8RAS/b 0850-0900 9N7YJ (JR6)
1330-1340 5B4FL (JR6)
17 0245-1200 DU1EV/B, FK8HA,8SIX/b, H44V, KH6SX, VK4,6RSX/b,8RAS/b,XV9DT
18 0420-1200 V73GT, VK6RSX/b
19 0230-1300 DU1EV/B,N7ET/DU7, FK8SIX/b, T88JB,VK4,VK6,8RAS/b 0300-0330 PY5CC (JR6)

20 0210-1100 H44V, VK4,6JQ,6RSX/b,8RAS/b, ZL1VHF/b 1240-1300 9M6LSC
2220-2300 9M6LSC
21 0320-1300 9M6LSC, DU1EV/B,FK8CA,8SIX/b, T88JB, VK4,6RSX/b 0935-1000 YA4F (JR6)
22 0250-1030 9M2/JI1ETU/b, 9M6LSC, DU1BP,1EV, T88JA,T88RE
23 0440-1100 9M6LSC, FK1TK, P29SIX/b, T88JA, VK4,6RSX/b,8RAS/b,YB9AY, ZL1VHF/b,2AGI
24 0240-1100 FK8SIX/b, VK3PA,VK4WDM,4RGG/b,4RTL/b,6RSX/b,8RAS/b
25 0350-1030 9M2TO/B, DU1EV/B, VK4,VK6,8RAS/b, VR2SIX/b 1558-1610 VQ9LA (JR6)
26 0225-1000 FK8CA,8SIX/b, VK4,VK6,8RAS/b, ZL3NW,TY,AAU,ADT,SIX/b
1230-1610 9M2TO/B,9M2/JI1ETU/b, DU1EV/B,DU1/GM4COK, YC1MH (JR6)
1605-1610 VQ9X/b (JR6)
27 0530-1130 FK8SIX/b, P29SI,BPL/b, VK3RMV/b,VK4,6JQ,6RSX/b,ZL1VHF/b,2AGI,3TY,4AAA
1509-1515 9M2/JI1ETU/b (JR6)
28 0900-1000 VK3DUT,4RTL/b,6RSX/b,8AA
29 0200-1000 FK8SIX/b, VK4,6RSX/b,7ZIF,8RAS/b, ZL3NW,AAU,SIX/b 1104-1110 FR1GZ (JR6)
1530-1635 9M2TO/B,9M2/JI1ETU/b, VQ9X/b (JR6)
30 0035-0300 CE3RY,3SAD, LW1DZ, PY1RO,2RO,5CC,PP2SIX/b,PY2SFY/b,ZP6CW
0200-1030 VK4,6RSX/b,8RAS/b, VR2XMT 0750-0800 FR1GZ (JR6)
1330-1600 9M2TO/B,9M2/JI1ETU/b (JR6) 1440-1530 VQ9LA,VQ9X/b (JR6)
31 0220-1300 9M2TO/B, DU1EV/B, FK8SIX/b, P29BPL/b, VK2,VK4,6RSX/b,
VK6RPH/b,8RAS/b, ZL1VHF/b,2AGI,3JT,3AAU,3SIX/b

Elsewhere

Mar 1 0110 XE1KK>VK2ZXC 0255-9 FK8DX>HL1 03-0400 FK8SIX>HL1
Mar 2 0550 KH6SX>VK4 0615 BG7IGG>VR2 0944 VK6>HL2 1227-48 VK8,VK4,YB9AY>VR2

Mar 3 0312 FK8SIX>KH6 0346 VK4RTL>V7 0428 XE1KK>KH6 0552 FK8SIX>KH6 0918 V73GT>KH6 1256 FK8SIX,P29BPL>VR2

Mar 4 04-0500 VK4RTL,VK4RGG,FK8SIX>V7
Mar 6 0010 XE2UZL>ZL2TPY 0447 FK8SIX>HL1
Mar 7 0252 FK8SIX>HL1 04-0500 49750(UA)>VK2 VK4RTL>HL1
Mar 8 04-0500 JA8,JE7YNQ>VK3 0508 FK8SIX>DS1 1330 VK8MS>VR2 1417 S21YY>KG6DX

Mar 9 01-0200 KH6>VR2 PY2XAT,PY5HSD,PY2BT>VR2 02-0300 PR7AR>VR2 0606 VU2VVP>VR2 0834 VU2VVP>VR2 11-1200 P29BPL,FK8SIX,VK6RSX,VK4ABW>VR2 12-1300 VK4ABW>BV2 VK4FNQ>VR2 1723 7Q7RM>HZ

Mar 10 02-0300 JA6YBR,49.753>VK3 03-0400 ZP6CW>KH6 ZL2>ZL4 1258 DU7/N7ET>VR2 1340 9M2TO>VR2 2332 XE2HWB>KH6

Mar 11 0045 FK8SIX>HL1 0430 DS1>HL1 0449 **VP6DIA**>KH6 06-0700 **VP6DIA**>KH6 JA7>KH6 0719 **VP6DIA**>KH6 1619 Z22JE>A71EM

Mar 12 0055 PY2PAI>KH6 0140 AStv>VK3 04-0500 FK8SIX>HL1 0533 **VP6DIA**>KH6 0849 JA6YBR>VK5 09-1000 49.75,HStv>VK3 0932 JE7YNQ>VK3 10-1100 VK4ABP>VK3 1549 9M2TO>BV2

Mar 13 0507 **VP6DIA**>KH6 22-2300 ZL1VHF>VK2

Mar 14 00-0100 VK4RGG>VK2 VK2>VK4 VK2>HL1 01-0200 JA4,JA6,JA8>VK2 05-0600 JE7YNQ,JA2>VK3 VK4>KH6 0601 C21SIX>KH6 0753-9 VK4>HL1 08-0900 KH6>VK4 P29BPL>KH6 10-1100 VK4>KH6 1432 VQ9DT>VR2 1605 9M2TO>VR2 2310 N6EQ>VK4

Mar 15 0359 C21SIX>VK2 0544 JE7YNQ>VK6 1208 BG7IGG>VR2 1815 48250,260>KH6 23-2400 ZL2>VK2

Mar 16 0531 49.7499>VK3 07-0800 JA6YBR,JA5>VK3 0842 9N7YJ(pirate?)>VR2 09-1000 VK8RAS,JA6YBR,JH5YYQ>VK3 VK6RSX>UK9AA 9N7YJ(pirate?)>BV4 JA1ZYK>VK3 10-1100 JA5GJN/4>VK3 12-1300 P29BPL,VK8MS>VR2 13-1400 9J2KC>VR2,BV2 5B4FL>VR2

Mar 17 0241 JA6>KH6 2341 LW1DZ>KH6
Mar 18 0127 PY2SFY>KH6 04-0500 KH6,VK4,JA1,JE7YNQ>V7 0527 KH6HI>V7
Mar 19 00-0100 LU6HVW,LU9EHF>KH6 0627 VK4>KH6 0742 JA0>VK6
Mar 20 0301 PY2SFY>KH6 1253 9M6LSC>VR2
Mar 21 0500 P29BPL>KH6 1241 T88JB>VR2
Mar 22 0439 VK8>KH6 08-0900 9M6LSC,T88RE,DU1BP>HL2 0848 VQ9X>VK8
Mar 24 0428-47 C21SX,P29BPL>KH6 VK4RTL>HL1 05-0600 VK4>HL1,KH6 1333 VQ9X>VR2 1447 VQ9LA>VR2

Mar 25 00-0100 CE3SAD,LU2NI>KH6 01-0200 LU3HR>KH6 0254 PP5JD>KH6 05-0600 VK4tv>KH6 VK4RTL>HL4 06-0700 JA0>VK6 VK4>KH6 KG6DX,VK8RAS,VK4RGG>HL1 07-0800 VK4>KH6 1454 VU2MKP>VR2

Mar 26 0542 JAs>VK6 06-0700 JA1,JA0>VK6 13-1400 5B4FL>VU2 VU2VVP>VR2
Mar 27 0146 PY2PAI>KH6 0204 CX4CR>KH6 0718 FK8SIX>KH6 0747 C21SIX>KH6
Mar 28 10-1100 JA0,VK3>VK4 1230 VK4tv>VK3

Mar 29 04-0500 VK4RTL>KH6
Mar 30 0047 CE3RY>KH6 0102 KH6HI>KH6(bs) 02-0300 JE7YNQ>VK3 LU9EHF,PY5CC>KH6 03-0400 ZLtv,UA/BYtv>VK3 1415-6 9M2TO,9M2/JI1ETU>BV4VJ 21-2200 TI2ALF,HC8GR,ZP6CW,ZP5PT>KH6 22-2300 PY2XB,ZF1DC>KH6 23-2400 C21SIX,VK4>VK2 K6QXY>ZL3

Mar 31 01-0200 VK8>KH6 JA7>VK2 02-0300 C21SIX,VK4>KH6 03-0400 JA1>ZL3 06-0700 EUtv>KH6(lp) N7ET/DU7>VK6 08-0900 FK8SIX,C21SIX>KH6 21-2200 PY5CC,LW1DZ>KH6 C21SIX>VK2 22-2300 LU8MB,LU9EHF,LU1DMA>KH6 VK4>VK2 FK8CA>ZL3