

# **THE SIX AND TEN REPORT**

**August 2003**

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## Analysis of 28 MHz reports from the UK

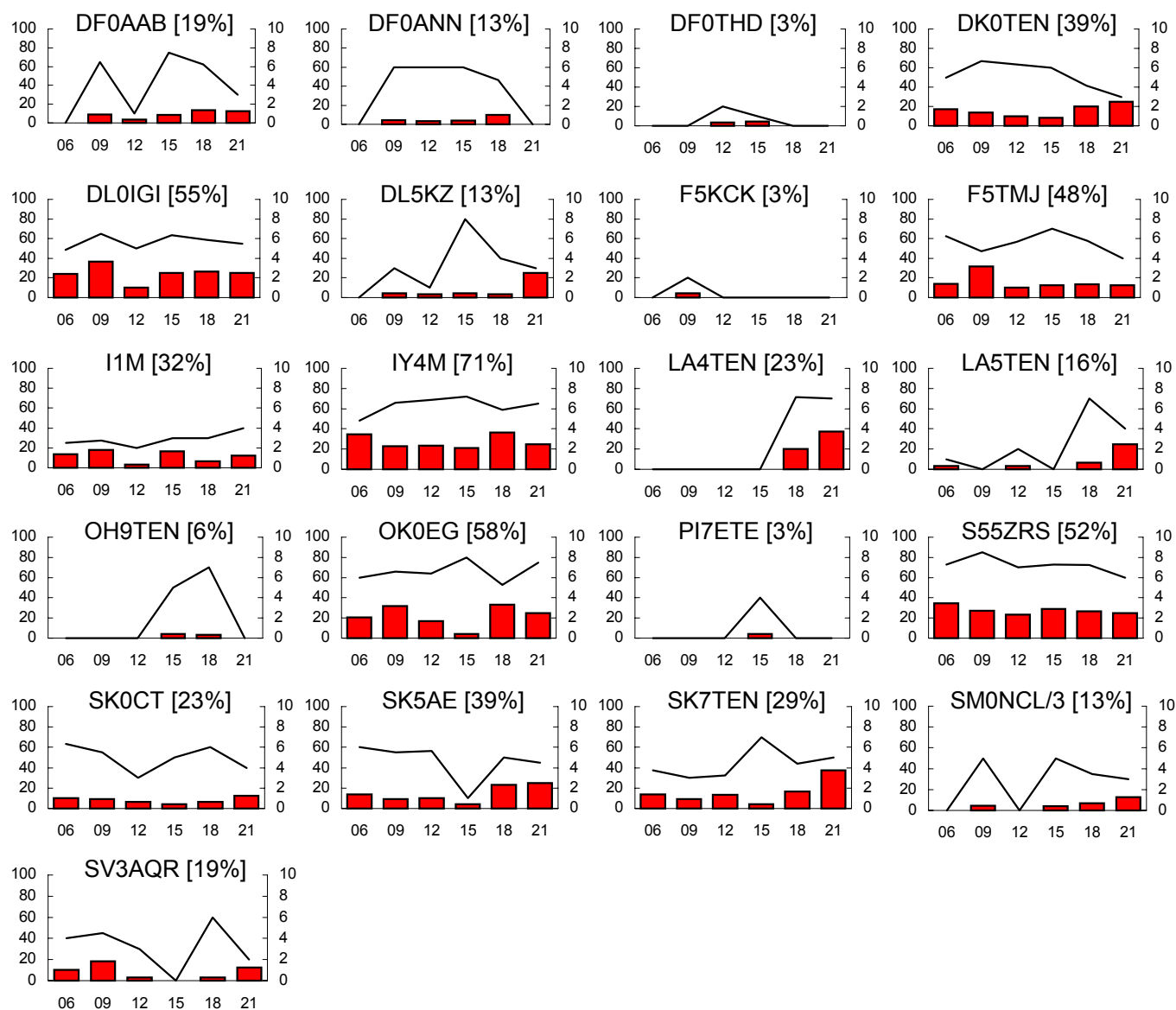
28 MHz reports and logs for August 2003 from G2AHU, G3IMW, G4TMV, GM4WJA, G4UPS, G0AEV, G0IHF and from packet cluster reports. Compilation and commentary by G0AEV.

There was no discernible improvement in 10m F2 propagation in August compared with the mid-summer months of June and July: the "amount" of DX indicated by the number of countries worked was actually slightly less as a result of a reduction in multi-hop sporadic E. This month, for the first time on the downward side of the current solar cycle, there were no reported QSOs or reception reports of stations in Canada or the USA. Most users of the band indicated conditions had been "quiet".

### Beacon graphs legend

Legend for all beacon graphs: - 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.

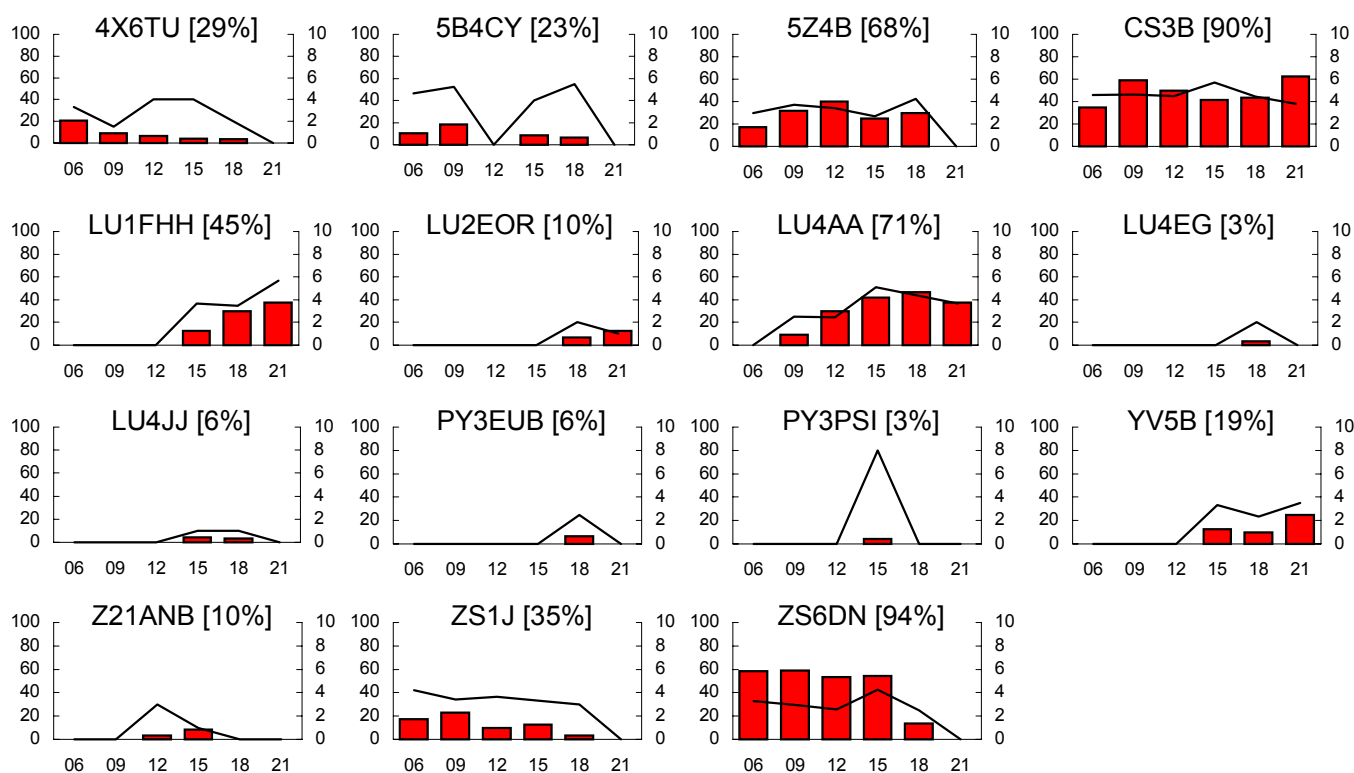
### European Propagation / Beacons



**Propagation modes for European beacons.** All beacons shown in the graphs on the previous page were heard via the E-layer: predominantly normal single hop Sporadic E with a little evening auroral E on Scandinavian circuits. Short skip Es occurred on a few days – for example PI7ETE was heard at 16z on 17<sup>th</sup> by G3IMW and (at 520km distance) by G0AEV. There was no inter-European F-layer propagation. Perhaps the only circuit where a F2 hop could be achieved (towards the end of August) is to SV3AQR but all reports of this beacon occurred early in the month and during Es openings. ER1AAZ is also at possible F2 distance but this beacon was not heard in August in the UK.

**Beacon Notes.** All 6 German beacons were heard again this month, although QRP beacon DF0THD (28.325) was reported only once - DF0THD is due to go QRT by the end of the year. ER1AAZ is missing from the above list – it is unclear if this is due to no propagation or no activity. EI0TEN is believed to be active but was not heard (e.g. no short-skip Es to northern Britain). The single report of F4KCK is poor in comparison with F5TMJ and is possibly a reflection of the transmit frequency (28.110) or perhaps an indication that the beacon has gone off air. SM0CNL/3 (28.287), new last month, was not reported after 15<sup>th</sup> August. GB3RAL and OH2B were both QRT all month.

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



**Suggested propagation modes.** The beacons reported (and charted above) indicate that all of Africa, most of South America and, to a lesser extent, the Near East, were workable on 10m on a reasonably reliable basis. All the beacons in these areas were heard by normal F-layer propagation, with the exception of a small (but not quantified) contribution from 2-hop sporadic E to the results for 4X6TU, 5B4CY and possibly also for CS3B. Frequent geomagnetic disturbances, a strong feature of recent months, continued to affect propagation throughout much of August but failed to completely disrupt the very reliable F2 circuit to southern Africa – ZS6DN was heard on all days except for two (1<sup>st</sup> and 8<sup>th</sup>), and on these days ZS1J was heard. Propagation to South America was slightly less reliable with LU4AA reported on 71% of days, slightly down from the number recorded in July.

**Beacon Notes.** LU4EG is an intermittent and infrequently reported beacon. LU2EOR appears to be fairly regular at the moment. LU4JJ was only reported twice in August but was heard much more frequently relative to other LU beacons in past months. LU1FFH is probably continuous. The two Brazilian beacons reported in August both appear to be intermittent.

## 10m DX in August 2003

The following list of DX (non-European) countries worked/heard in the UK is derived mainly from DX packet cluster spots with additional contributions from 6 and 10 reporters. The list reflects summer-style F2 propagation (i.e. largely restricted to north-south paths) but without the multi-hop sporadic E events that contributed to the number of DX countries available in June and July

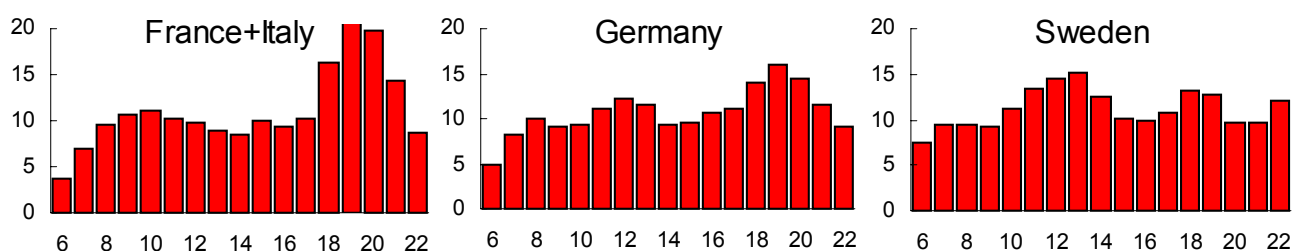
4K, 4L, 4X, 5B, 5T, 7Q, 7X, A4, A6, CX, JY, LU, PY, TA, TZ, UA9/0, VP5, YI, ZP, ZS.

## Propagation to North America

No North American beacons (and no QSOs) were reported in August – the first time for many years that neither F2 nor Es has provided at least one opening in a month. 10m propagation was probably available during the late evening of 18<sup>th</sup> when a mixture of auroral backscatter and auroral E provided a few transatlantic QSOs on 50 MHz.

## 10m Sporadic E – Summer 2003

The following graphs illustrate the time distribution of sporadic E experienced on 10m between the UK and 3 areas of Western Europe. The data are for 1 May to 31 August 2003 and comprise the daily reliability - the percentage of days when Es propagation was reported - at each hour between 06 and 22z. The graphs represent the mean reliability of several beacons that were known to be active throughout the monitored period and the data has been smoothed (over an effective 2-hour period)



The graph for France+Italy is for the beacons F5TMJ, I1M and IY4M; for Germany DF0AAB, DK0TEN, DF0ANN and DL0IGI; and for Sweden SK0CT, SK5AE and SK7TEN.

All three graphs match the well-known bimodal distribution of sporadic E with mid-morning and late afternoon modes. The patterns are not quite as expected, however. On 2 graphs (Germany and Sweden) the morning peak appears closer to mid-day: the results from France and Italy indicate a more "normal" peak around 10z. Likewise the late afternoon peak appears displaced later in the day (to between 18 and 20z) relative to the expected time. The particularly strong evening showing in the France+Italy graph has no obvious explanation but might be an artefact of monitoring patterns by individual contributors. For example G0AEV heard I1M more frequently than other observers and G0AEV listens more often in the evenings than during the middle part of the day.

The small rise in reliability at 22z in the Swedish beacon graph is also apparent at 23z (not shown) and represents Auroral E activity

Overall the graphs indicate that propagation occurred at around 10% of the time during most of the day on circuits to the northeast, east and southeast of Britain over a 4-month period. Put another way, switch on your radio at any time during the summer and you would have had a 1:10 chance of hearing a beacon in one (or more) of the 3 areas. The data encompass both mid-summer conditions when the reliabilities are much higher than 10% and early and late summer when the reliabilities are lower. Also the data represent the average reliabilities of high and low power beacons – there was clearly a better chance of hearing QRO beacon DL0IGI than QRP beacon DF0ANN.

## Analysis of 50 MHz reports from the UK

UK 50 MHz reports for August 2003 from G2ADR, G2AHU, G3HBR, G3IMW, G4UPS, GM4WJA and via packet cluster spots. Compilation and commentary by G0AEV.

August 2003 saw several moderately extensive sporadic E events. The Perseids meteor shower did not (from reports received here) amount to much, and there was very little F2 DX. Probably the event of the month was the extensive aurora and subsequent auroral E openings on the 18<sup>th</sup>. UK stations worked or heard 13 country/areas by aurora (backscatter) and 17 by auroral E during this event. There were a few contacts/reports of OX, W and VE stations by auroral E and with auroral tones – the latter I take, considering the geometry and modes present, to be mixed mode aurora plus auroral E.

### Sporadic E

Few observers had much to say about August 6m sporadic E. G3HBR thought that August was “certainly a thinner month for signals than I had hoped for but not without interest”. On the 9<sup>th</sup> Brian heard VE8BY for the first time in a summer month – audible for a considerable time with signals varying between S2 and S7. Propagation was by multi-hop Es as indicated by strong signals from OH9, TF and OY at around the same time. The 18z period of the 9<sup>th</sup> was one of the best times for Es in August with a total of 16 countries reported. The 15<sup>th</sup> and 23<sup>rd</sup> were also good days for sporadic E.

**Sporadic E 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.

	3V (10%)	4X (10%)	5T (3%)	9H Malta (23%)	CN Morocco (39%)
D	1 9 10	7 11 15	16	1 5 9 14 15 17 23	1 5 7 9 11 12 15 16 17 20 21 26
06	0	9		2	5 9
09	0 9 4	0		9 9 0 5	7 2 9
12				0 9	7 7 9 7
15			0		9 8 9
18		3		6 0	3 7 6 0 5
21				7	7

	CT Portugal (32%)	CT3 (3%)	DL Germany (23%)	EA9 Ceuta/Melilla (3%)
D	1 5 7 9 14 15 16 20 21 23	15	6 9 11 15 16 19 23	16
03	9			
06	0			9
09	7 7 7		9	
12	0 9 0 9		9 0	
15	9 9 9	7	0 7	
18	6 0 8	7	9 9 9 4 9	
21	5 0		0	

	EA Spain (35%)	ES (13%)	F France (19%)	G <> GM (6%)
D	2 3 5 7 9 11 15 16 17 19 20	3 6 15 23	7 9 11 15 17 23	6 15
06	9 7			
09	9 9 9 5 9	0	0 0	5
12	9 0		7	
15	9 9 9 5	9	9 4	
18	0 9	0 9 9	0 9 6	7
21	0		0	

	HA (3%)	HB Switzerland (16%)	I/IS/IT Italy (48%)	JW (3%)
D	5	14 15 16 17 23	3 5 7 9 10 11 14 15 16 17 19 20 21 22 23	9
06			9 0 8 0 9 9	
09		9 9	7 0 9 9 7 9 0	
12	9	9 0	5 9 0 0 9 0 9 9	
15		0 9	9 0 7 0	
18		9 9	0 9 0 9 7 9	9
21			9	

HA – RX only

	LA Norway (23%)	LX (6%)	LY Lithuania (23%)	LZ (10%)	OD (3%)	OH (10%)
D	2 3 5 6 8 9 15	11 16	6 9 11 14 15 19 23	5 15 20	5	6 9 23
03				9		
06			9			
09	2		9	5		
12						
15			9			9
18	3 9 9 0	0	9 9 0 9	0		9 9 9
21	9 0 9 8		0	0	2	

	OE Austria (23%)	OK/OM Czech/Slovak Reps. (35%)	ON (10%)	OY Faeroe Is. (10%)
D	15 16 17 19 20 23 27	5 8 9 10 11 16 17 18 19 20 23	14 15 23	9 15 23
06	7 7 4	0 0		
09	9 9 9	5 9 9 9		
12	9	5 9 9 9		
15	9	9	1	
18	0 8	0 9 9 9	0 0	9 9 9
21				9

	OZ Denmark (16%)	PA (13%)	SM Sweden (19%)	SV Greece (13%)	SV9 Crete (3%)
D	6 9 11 15 23	5 9 15 19	3 6 9 11 15 23	7 9 14 15	9
06				7 9	7
09		9			
12					
15	9	9	9	9	
18	0 9 0 9	9 9	9 0 0 9	5	
21	0	0 8	9 9		

	SP Poland (39%)	TA (3%)	TF (6%)	TZ (3%)	UR Ukraine (16%)	VE8 (3%)
D	5 6 9 10 11 14 15 17 18 19 20 23	14	3 9	19	5 11 15 18 19	9
06	9 0 9					
09	0 7 9 9 5				9	
12	0 9 7				1	
15	5 9 7				0 2 9	
18	9 9 9 0 9	0	9	3		7
21			0 5		2	3

	YL Latvia (13%)	YO (10%)	YU/9A/S5/T9/Z3 Ex-Yugoslavia (55%)	ZB (6%)
D	6 15 16 23	9 11 15	4 5 6 7 9 10 11 14 15 16 17 19 20 22 23 25 27	9 16
03				
06	9	9	9 9 9 0 9	
09			7 5 9 9 9 9 6	5
12			7 7 9 9 9 6	
15	1	9	9 5 9 9 2 9 0	0
18	0 7	0 0	7 9 6 0 9	
21			0 9	

## Sporadic E Backscatter

Only a few Es backscatter events were reported in August, in proportion with a general reduction in the number and “intensity” of sporadic E events in the closing month of the Es summer season.

9 1537 G4IGO reported lots backscatter on DX TV signals  
15 1558 F6KHM >MW1MFY 55 backscatter QTF 210

## Sporadic E Summary .

The table below is a summary compilation of the detailed data presented in the previous pages and shows counts of country-areas heard or worked by in the UK for each day in August and for each 3-hour time band (labeled 00, 03, etc.). Counts where 10 or more country-areas were reported are highlighted in bold text. Table cells with background shading are for times when the Kp index was 5 or greater.

Es Summary (all data)

	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																															
03																				2	1										
06	1	1					3		8	1	3				5	2	3		1	4	1						1				
09	4	1	2	1	1	1	5	2	5	5	1	1			9	8	7		2	2	1		1				1				
12	1		1		8		2		3	2				2	1	7	6	3	1	3							1				
15			1		4			1	5		9			5	7	4	6		3			1	3		1						
18	1				1	10			16		6			7	20	1	1		6	2		1	16								
21			3		4	5		1	3					2	2	1				3			3								

Sporadic E occurred at times during most of the first three-quarters of the month but was largely absent during the last week. During the period of Es activity (1<sup>st</sup>-23<sup>rd</sup>) particularly good days were the 9<sup>th</sup> and 15<sup>th</sup>. Poor days were the 2<sup>nd</sup>, 4<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, 18<sup>th</sup> (but note the excellent auroral E in the late evening of 18<sup>th</sup>), 21<sup>st</sup> and 22<sup>nd</sup>.

Periods of sporadic E activity and periods of geomagnetic storming (shaded cells, Kp of 5 or more, in the summary table) are seen to be nearly always mutually exclusive. There are no instances of Es correlating positively with high Ks, as seen at times in previous months.

## DX (F2 and TEP) Propagation

Unfortunately, no tabulation of “DX” propagation is needed again this month despite an increase in the number of reported openings (compared with last month when the only instances of DX propagation were signals from Brazil on 2 evenings). The openings in August – all to Africa – were all coincident with sporadic E events except for the TEP opening to South Africa reported on the 30<sup>th</sup> (compare times/dates with the summary Es table above).

9 1555 G0JHC (IO83) > ZD8VHF529  
9 1624 G4IGO > ZD8SIX “still in at 549 QSB”  
20 2112 G8LBS > ZD8VHF “very loud in JO02”  
23 2032 MM0BSM > FR5SIX 50022.5 MHz “weak - think that’s the call”  
30 1631 G7RAU > ZS6WB 0>55 QSB. Heard via TEP



## Aurora

August was another magnetically very disturbed month. The disturbances produced a large number of weak aurora and one strong and very extensive aurora on the 18<sup>th</sup> with an associated auroral E event. GM4WJA describes the aurora on the 18<sup>th</sup> as starting as early as 0700, strong all day and evening with strong Auroral E on both 4m and 6m. John heard nothing on 10m. Overall UK stations worked or heard 13 country/areas by aurora and 17 by auroral E, and these countries included OX, W and VE by both aurora and auroral E.

1	21z	2323	EI7IX (IO53) > GB3LER 53a
2	15z	1655	LA4CQ (JP20) > GB3LER 52a. GM4WJA has aurora early to late evening
3	18z		Aurora in mid to late evening (GM4WJA)
7	18z	2007	LA4CQ > GB3LER 52a "dual mode: 559/55a" ( <i>Auroral E / aurora backscatter?</i> )
	21z	2157	G8VHI (IO92) > GB3LER 52a QTF 0
9	18z		Aurora in mid evening at GM4WJA
11	18z		GM4WJA detects another mid evening aurora in IO87
17	18z-21z		Aurora all evening (GM4WJA)

### -----Major Auroral Event-----

18	06z	0700	Aurora first heard by GM4WJA
	09z	1109	GM7PBB (IO68) > GB3LER 55A ( <i>first aurora spot from/to UK</i> )
		1110-1120	OZ2M > GB3LER QTF 340; MM0BSM > GB3RMK
	12z	1220-1224	MM5AJW (IO88) > GM7PBB 55a; GM7PBB (IO68) > GM4WJA 56a
		1425-1445	G6IQL reports GM beacons only in IO92; G3IMW > PA7MA "CQ aurora"
	15z	1511	<i>Start of main activity phase. Many QSOs.</i>
		1511-1600	G3IMW (IO80) > DL, EI, GM, ON, OZ1DPR (JO45), PA. GM3RMK QTF 015
			MM0BSM > GW3MFY, G3IMW, GD0TEP
		1600-1700	G3IMW > EI, F, G, GM, ON, PA, SM7FJE; G4UPS (IO80) > EI, G, GM, ON, SM7FJE, SP5BW (KO01), G4UPS reports signals peaking QTF 030; G3HBR > EI, G, GM, PA, SP5BW, SP7DCS (JO91); G, GM > ON; GD > SM.
		1700-1800	G4UPS > DJ6XV (JO31), EI, G, GM, PA (mostly G stations heard from 1736) DD3DJ > G4DCJ; EI2JD (IO63) < G3HBR, G0PQO (IO92); EI7IX > GB3MCB; ON5PU (JO21) > G4FVP (IO94), G3ZVW (IO91), G4DCJ (JO02); etc.
	18z	1800-1810	F6KHM (IN78) > G4DEZ (JO03) 55a; EI7IX > GB3LER
		1810-1925	No amateur signals reported. G3IMW reported no signals at 1819 and 1903. G7RAU spotted 49739 and 49760 video via aurora QTF 050 S6 at 1856.
		1925-2100	Many auroral E QSOs – see below
	21z	2100-2218	No aurora backscatter but many auroral E signals reported – see below
		2218-2230	Few auroral E QSOs – see below – plus ON5UE > G4DEZ 52a QTF 360; G4FVP hears OX3VHF 55 with auroral tone ( <i>mixed aurora/E mode?</i> ) – also GW3LEW (IO71) spotted OX3SA, mode not reported
		2230-2350	Many auroral E QSOs – see below – but no aurora backscatter
		2350-2400	GM4WJA > VO1ZA "weak via aurora" K7BV (FN31) > GM0EWX "aurora s1" VE1PZ spots GM0EWX calling CQ (59a)
19	00z	0000-0010	K2MUB > GM0EWX (55), GW3LEW > VE1PZ (55a). ( <i>Last UK activity</i> )

21	15z	1625	GM8OEG (IO86) > GB3LER 57a, GB3RMK (57a).
		1625-1700	GM > G, GM, DL6BF (JO32), OH1LEU.
		1700-1750	GM > G, PE2AEX (JO22)
	18z	1813-1823	G4DEZ < MM0CEZ (IO75), PA0FRE (JO21), LY2SA (KO14) 56a QTF 350
	21z	2304	G4FVP spots GB3LER 52a "weak aurora"
		2332	G4FVP > GB3RMK (55a), GB3LER (55a)
22	15z	1645	MM0BSM (IO86) > GB3LER "aurora". GM4WJA also has late evening phase
23	21z		Aurora in late evening at GM4WJA
24	21z		Ditto, late evening aurora at GM4WJA
26	18z-21z		GM4WJA has aurora in mid to late evening.

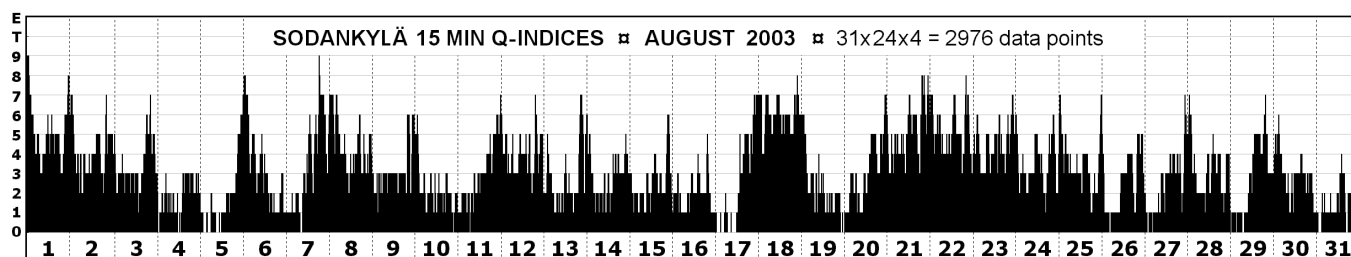


## Auroral E

The auroral E event of the 18<sup>th</sup> was exceptionally good. It occurred during the Harang discontinuity period following intense aurora activity in the late afternoon and early evening. Many reception reports and contacts were made with stations in Scandinavia and countries bordering the Arctic Circle. Signals were often very strong. E-layer ionisation was intense enough (and far south enough) to allow short skip propagation between G and GM (with G4FVP in IO94 to GM4ENK in IO99 being the shortest distance reported). Auroral E continued into the late evening where it overlapped with a weaker 2<sup>nd</sup> auroral phase. During this time paths to North America opened for stations in northern Britain – some appeared to be by 2-hop auroral E and others by aurora (signals had an aurora tone). The transatlantic aurora took place at the end of the auroral E openings within Europe and during the start of the late evening aurora period. I take the reports of aurora to N America to be mixed mode with aurora backscatter linking to auroral E. Best DX was G1INK (IO93) hearing VE4VHF.

18 18z	1925-2000	G3IMW > SP3NUY, SP7HKK; GM3YTS > ES4EQ; G7RAU > OH7KM 559
	2000-2100	QSOs with strong T9 signals: G > LA, OH, OY6SMC; GM > ES1QD
21z	2101-2200	Very many QSOs with strong T9 signals: GM > DL, OH, OZ, SM; G > GB3LER, JW9SIX, LA, OH, OH9SIX, OY, OY6SMC, TF3SIX; 2124 G4FVP (IO94) > GM4ENK (IO99) "short skip auroral E"
	2200-2300	Many QSOs: GM > DL, ON, SP; G > GB3LER, GM4ENK (IO99), JX7SIX, LA, OX3SA, OX3VHF, OY6SMC, TF3SIX, TF8GX; GI > ES; 2229 G1INK (IO93) > VE4VHF (539)
	2300-2325	GM > DL, PA, SP; G > JX7SIX, LA, SM, SP 2307 K2MUB (FB21) > GM3EWX 419; 2322 MM0AMW > VO1ZA 539
	2334	DL1EAP (JO31) spots GB3LER "still 599 Auroral E"
19 00z	0018	G4FVP > OX3VHF "weak in IO94"
21 18z	2017	LA1YCA > GB3LER 579 Auroral E, > GB3RMK S5.

**Q-indices** from Sodankylä, Finland (tnx Väinö, OH2LX)



Väinö writes, "August also was a rather disturbed month with Sodankylä monthly Ak average was 37.0. The most disturbed day was 18 Aug". The Nurmijärvi indices were Max Ak was 144 on 18 Aug, and the Monthly Ak Mean was 23.1.

## Meteor Scatter

A severe dearth of traditional meteor scatter spots and reports this month – what happened to the Perseids? There were many JT6M contacts reported on the DX cluster, as well as even more JT6M skeds, QSO "confirmations" and the like. Unfortunately many of the JT6M QSOs were clearly not via meteors, some spots actually stating the propagation mode as Es - why use a weak signal mode designed for MS working in a sporadic E opening, I wonder? I have excluded most JT6M contacts from this list because of the difficulty in correctly ascribing the mode of propagation

13 0801	G3HBR > LX0SIX 579 (perseids?)
15 0712	G3IMW > IK? (ms?)
18 0906	OE5MPL > GB3BUX "long ms bursts"

## Tropospheric Propagation

Tropospheric propagation appears, from the profusion of reports and spots indicating or implying this mode, to have been rather good this month. Some of the better distances achieved and reports describing particularly good conditions are listed below.

2 2112 PA0OOS > GB3BUX 559 "good tropo"  
5 0717 F6IFR (JN09) > GB3LER 529 (*spot says "tropo" but on what basis? More likely to be ms*)  
5 0827 PA0FRE (JO21) > G6APD (IO92) 59 "good tropo"; 0838 > G0UYC also "good tropo"  
5 2229 PA0O > GB3BUX 599+ "tropo exceptional"  
8 1404 M0CTP > GB3MCB 569 "tropo up to SW"; 1441 PA1SIX > GB3BUX 579  
8 2344 PA0FRE > GB3MCB 539 "tropo-cndx"  
9 1313 G4IGO (IO80) > DL1EJA (JO31) 559 "fb tropo"; DL1EJA > MW1MFY (IO81)  
15 2057 PA0O > GB3MCB peaks 599  
16 1033 G1INK (IO93) > G16ATZ s7 (*presumed tropo*)  
18 0630 G4UPS > GB3BUX 569, > GB3MCB 559  
22 1904 EI7GL (IO51) > GB3BUX (IO93) "467kms tropo"  
23 2104 PA0O > G8BCG/P (IO70) "sounds tropo?"  
26 1933 EI2JD (IO63) > GX7VHF (JO01) 41

## Solar and Geomagnetic Data for July 2003

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

Sunspot numbers (SEC)	Mean 114.3	Max 155 (6 <sup>th</sup> )	Min 62 (20 <sup>th</sup> )
Solar Flux (28 MHz)	Mean 122.1	Max 137 (7 <sup>th</sup> )	Min 107 (1 <sup>st</sup> )

Solar data for August 2003 are presented in the table at the end of this section. 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.

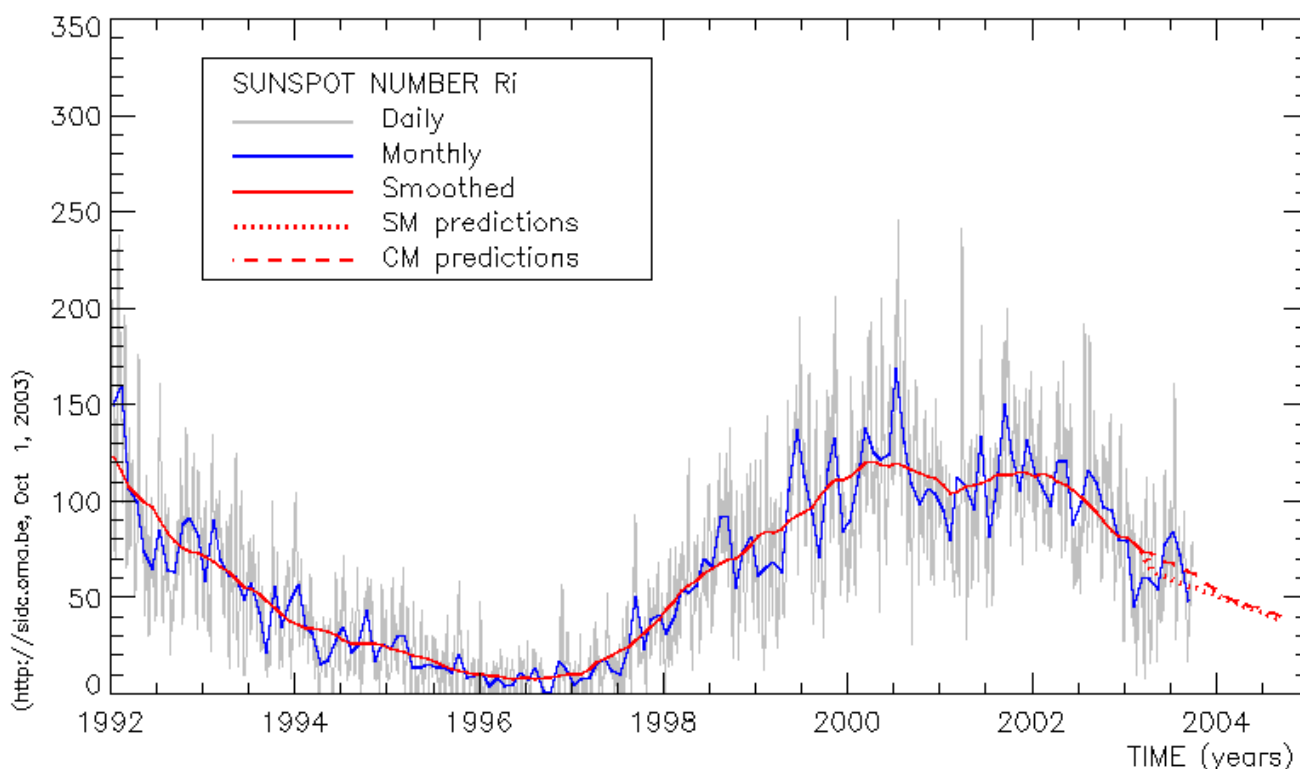
### Energetic Events

 (Flares of M and X class).

2 <sup>nd</sup>	2341-0002	M1.3 1F	19 <sup>th</sup>	0738-0801	M2.0 1N
5 <sup>th</sup>	1243-1251	M1.7 SN		0945-1025	M2.7 2F

### Cycle 23 History and Prediction

The following graph was downloaded from the SIDC web site (<http://sidc.oma.be/index.php3>), home of the International Sunspot Number and source of information and graphics on sunspots and other data relating to the solar/sunspot cycle.



The graph (from <http://sidc.oma.be/images/wolfjmmms.png>) shows daily (grey), monthly (blue) and monthly smoothed (red) sunspot numbers for the latest cycle, together with predictions for 12 months ahead. Prediction methods are 1) SM (red dots): classical prediction method, based on an interpolation of Waldmeier's standard curves; and CM (red dashes): combined method (due to K. Denkmayr), a regression technique coupling a dynamo-based estimator with Waldmeier's idea of standard curves.

**K-indices** K indices for August 2003 are presented below. Because of the large number of days when the geomagnetic field was disturbed (16 days with Kp or one of the 3 UK K-indices reaching 5 or higher) I have present all the available data in a changed format. Four tables present the planetary Kp index (from SEC) and the “L” (Lerwick), “E” (Eskdalemuir), and “H” Hartland K-indices (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 shading indicates K of 5, darker shading of K > 5.

#### Planetary 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	5	4	3	2	3	6	2	5	3	4	2	4	3	3	3	3	2	5	6	2	4	5	4	3	4	3	2	3	1	4	2
03	5	4	4	2	2	6	2	5	3	3	2	5	5	4	2	3	1	6	4	3	5	5	5	4	4	2	2	4	2	5	2
06	5	4	3	4	1	7	1	5	4	2	2	5	3	4	3	2	0	8	3	4	7	5	7	5	5	1	3	4	2	3	2
09	5	3	3	4	1	5	2	4	4	3	2	4	2	2	2	3	1	7	3	2	5	5	5	5	3	4	4	4	4	3	2
12	5	3	3	1	2	4	3	3	3	2	2	3	3	3	3	3	4	6	2	3	6	6	5	4	3	3	3	3	3	3	3
15	3	3	3	2	3	3	4	4	3	2	2	4	2	3	4	3	4	6	3	3	5	5	3	3	3	4	3	3	4	3	2
18	3	4	3	4	3	3	5	3	3	3	3	3	4	4	4	3	4	5	3	3	5	4	4	4	3	3	3	3	4	3	2
21	5	4	3	4	3	2	4	3	3	2	4	3	3	4	3	2	5	5	3	4	5	3	4	3	3	3	3	3	3	2	2
Σ	36	29	25	23	18	36	23	32	26	21	19	31	25	27	24	22	21	48	27	24	42	38	37	31	28	23	23	27	23	26	17

#### Lerwick K (Shetlands)

L	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	4	3	1	2	6	0	5	2	3	1	3	3	3	2	2	1	6	7	0	4	5	4	2	3	3	2	3	1	4	1
03	5	3	2	1	0	5	1	5	2	1	2	4	4	2	1	2	0	6	3	2	4	4	5	2	3	1	1	3	1	4	1
06	3	2	2	2	1	4	1	3	2	1	1	3	2	2	2	1	0	5	2	2	4	3	4	4	3	0	1	2	1	1	1
09	3	2	2	1	0	3	2	3	2	1	1	3	1	1	2	1	0	6	2	1	3	3	3	2	2	1	1	3	2	2	1
12	5	3	1	1	1	4	4	3	2	2	2	4	3	2	3	4	4	7	2	3	4	4	4	2	3	2	2	3	2	2	2
15	3	4	2	2	1	2	5	4	2	2	3	4	2	3	3	3	4	7	3	3	6	5	3	2	3	3	3	3	4	2	2
18	2	3	3	3	1	2	6	4	3	2	3	3	2	3	2	2	4	7	2	3	6	4	3	4	2	2	2	3	4	2	2
21	6	3	3	2	3	2	5	3	3	1	3	3	3	3	3	1	6	6	2	5	7	4	3	2	2	3	3	3	2	1	0
Σ	31	24	18	13	9	28	24	30	18	13	16	27	20	19	18	16	19	50	23	19	38	32	29	20	21	15	15	23	17	18	10

#### Eskdalemuir K (southern Scotland)

E	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	4	3	1	3	5	1	4	2	4	1	3	3	3	3	3	1	5	5	1	4	5	3	2	3	4	2	3	1	4	1
03	4	3	3	2	1	4	2	4	2	2	2	3	4	3	2	3	0	5	3	3	4	4	4	2	4	1	1	2	1	4	2
06	4	3	2	2	1	4	2	4	3	2	2	4	2	3	2	1	1	5	2	2	4	4	4	4	3	0	1	3	1	1	1
09	3	2	3	1	1	3	2	4	2	1	2	3	2	2	2	1	0	5	2	1	3	4	4	3	3	2	1	4	3	2	1
12	5	3	2	1	2	4	4	3	3	3	3	5	3	3	3	4	5	6	3	3	4	4	4	3	3	2	2	3	3	3	2
15	3	4	3	3	2	3	5	4	3	2	3	4	2	3	4	3	4	6	4	3	5	5	4	3	4	3	3	3	4	3	2
18	3	4	4	3	2	2	6	4	3	2	3	4	2	3	2	2	4	6	3	3	5	4	3	4	3	3	3	3	5	2	2
21	5	4	4	3	3	2	5	3	4	1	3	3	4	3	3	1	5	5	2	5	5	4	3	3	2	3	3	3	3	1	1
Σ	31	27	24	16	15	27	27	30	22	17	19	29	22	23	21	18	20	43	24	21	34	34	29	24	25	18	16	24	21	20	12

#### Hartland K (SW England)

H	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	5	4	3	1	3	5	1	4	2	4	1	4	3	3	3	3	1	5	4	1	5	5	4	3	4	4	2	3	1	4	1
03	4	4	3	2	1	5	2	4	2	2	3	3	4	4	2	2	0	5	3	3	4	3	5	3	4	1	1	2	2	4	2
06	4	3	2	2	1	4	2	4	3	2	2	4	2	3	2	1	1	5	2	2	4	4	5	4	4	0	2	3	2	2	1
09	3	2	3	2	1	3	2	4	2	1	1	3	2	2	2	1	0	4	2	1	4	4	4	3	3	2	1	4	2	2	1
12	5	3	2	1	1	4	3	3	3	2	3	4	3	2	3	2	5	5	2	2	4	4	4	3	3	1	1	3	2	2	2
15	3	4	3	3	2	3	5	4	3	3	3	4	2	3	4	3	4	5	4	4	5	5	4	2	4	3	3	3	4	3	2
18	3	4	4	3	2	3	6	4	3	3	3	4	3	3	3	2	5	5	3	3	5	5	3	4	3	3	3	3	5	2	2
21	5	4	4	4	3	3	5	3	4	1	3	3	4	3	4	1	5	5	2	5	5	5	3	2	2	3	3	3	3	2	1
Σ	32	28	24	18	14	30	26	30	22	18	19	29	23	23	23	15	21	39	22	21	36	35	32	24	27	17	16	24	21	21	12

August 2003	28 Areas			-- 50 Areas --				2800		- Spots -		Max Kp	X-ray			Max foF2		Min foF2	-- Particle Fluences --			
	Es	F	Es	Dx	A	AE	Flux	SEC	SIDC	Ap	Aa		b.gnd	MHz	Hour	MHz	Hour		2MEV Elec	1MEV Prot	10MEV Prot	
01-Aug	3	1	4	0	1	0	107	85	49	5	37	61	B2.9	6.0	18	2.3	02	8.1E+08	4.3E+06	1.2E+04		
02-Aug	0	4	2	0	1	0	111	95	56	4	21	38	B3.3	6.4	15	2.5	04	6.8E+08	2.8E+06	1.0E+04		
03-Aug	2	6	6	0	0	0	120	144	76	4	15	27	B2.6	6.1	13	3.1	03	7.7E+08	1.4E+06	1.2E+04		
04-Aug	8	5	1	0	0	0	123	138	73	4	14	21	B2.6	7.1	11	3.7	04	8.2E+08	1.6E+06	1.2E+04		
05-Aug	8	4	14	0	0	0	131	136	87	3	9	12	B3.6	6.9	15	3.9	04	1.1E+09	1.6E+06	1.1E+04		
06-Aug	5	1	11	0	0	0	129	155	83	7	43	46	B2.7	6.0	12	3.7	04	5.4E+06	7.2E+05	1.2E+04		
07-Aug	10	7	8	0	2	0	137	121	78	5	15	52	B3.6	7.0	20	3.2	05	1.4E+07	8.6E+05	1.2E+04		
08-Aug	0	1	2	0	0	0	133	111	69	5	32	52	B3.4	6.6	20	2.3	03	1.9E+07	9.1E+05	1.2E+04		
09-Aug	12	6	25	1	0	0	130	107	70	4	15	28	B3.3	6.7	20	n.a.	n.a.	8.3E+07	3.2E+06	1.1E+04		
10-Aug	5	5	5	0	0	0	131	112	72	4	12	21	B3.2	6.9	20	3.7	03	1.1E+08	7.0E+05	1.1E+04		
11-Aug	9	6	15	0	0	0	129	118	72	4	11	17	B3.2	7.1	09	4.0	04	2.2E+08	1.3E+06	1.1E+04		
12-Aug	0	4	1	0	0	0	123	114	71	5	25	45	B2.7	6.6	21	4.1	04	1.1E+08	1.6E+06	1.1E+04		
13-Aug	5	5	0	0	0	0	131	112	70	5	17	28	B6.0	6.8	20	3.2	04	1.8E+08	8.5E+05	1.1E+04		
14-Aug	11	6	10	0	0	0	130	108	63	4	18	29	C1.0	6.3	10	3.8	04	1.5E+08	9.2E+05	1.2E+04		
15-Aug	17	9	27	0	0	0	131	86	67	4	14	23	B6.8	n.a.	n.a.	3.8	02	1.4E+08	5.7E+05	1.2E+04		
16-Aug	14	7	14	0	0	0	127	92	73	3	11	16	B4.0	7.1	21	2.3	04	2.5E+08	9.0E+05	1.2E+04		
17-Aug	17	10	10	0	0	0	119	113	74	5	15	40	B3.7	7.2	12	4.1	23	1.4E+08	7.5E+05	1.1E+04		
18-Aug	0	4	3	0	13	17	116	104	67	8	86	110	B3.3	4.9	19	n.a.	n.a.	4.5E+06	2.0E+06	1.1E+04		
19-Aug	9	9	11	0	2	1	117	77	58	6	21	24	B3.3	7.0	20	n.a.	n.a.	1.5E+07	3.0E+05	1.4E+04		
20-Aug	7	8	9	1	0	0	112	62	62	4	15	26	B2.8	7.1	11	n.a.	n.a.	6.2E+07	5.7E+05	1.3E+04		
21-Aug	7	2	3	0	6	1	119	86	58	7	53	78	B3.5	n.a.	n.a.	n.a.	n.a.	1.8E+07	1.5E+06	1.2E+04		
22-Aug	3	6	2	0	0	0	121	126	69	6	43	70	B3.7	6.0	16	n.a.	n.a.	1.9E+08	7.3E+06	1.2E+04		
23-Aug	12	8	18	1	0	0	120	125	76	7	44	59	B2.3	7.4	11	2.0	04	6.0E+08	6.0E+06	1.2E+04		
24-Aug	2	3	0	0	0	0	116	132	82	5	24	33	B2.4	6.1	13	2.2	04	7.5E+08	4.0E+06	1.2E+04		
25-Aug	4	2	1	0	0	0	117	146	82	5	21	37	B2.5	5.9	19	n.a.	n.a.	4.9E+08	1.7E+06	1.2E+04		
26-Aug	2	7	1	0	0	0	121	124	89	4	14	24	B3.1	7.4	18	2.5	04	8.2E+08	8.7E+05	1.2E+04		
27-Aug	2	5	2	0	0	0	126	116	90	4	13	19	B3.8	6.7	18	2.3	03	1.0E+09	5.4E+05	1.2E+04		
28-Aug	0	5	0	0	0	0	119	146	95	4	18	29	B3.4	7.7	20	2.3	03	1.0E+08	4.1E+05	1.1E+04		
29-Aug	4	7	0	0	0	0	116	132	85	4	15	28	B2.8	7.5	10	3.2	05	2.5E+08	6.5E+05	1.1E+04		
30-Aug	1	2	0	1	0	0	114	120	74	5	17	23	B2.8	7.4	12	2.3	04	7.2E+07	2.8E+05	1.1E+04		
31-Aug	0	4	0	0	0	0	110	101	65	3	7	13	B2.4	7.0	09	3.6	04	2.4E+08	5.0E+05	1.2E+04		
Sum	179	159	205	4	25	19																
Average	5.8	5.1	6.6	0.1	0.8	0.6	122.1	114.3	72.7	4.7	23.1	36.4	B3.5	6.7	16	3.1	05	3.3E+08	1.7E+06	1.2E+04		
Maximum	17	10	27	1	13	17	137	155	95	8	86	110	C1.0	7.7	21	4.1	23	1.1E+09	7.3E+06	1.4E+04		
Minimum	0	1	0	0	0	0	107	62	49	3	7	12	B2.3	4.9	09	2.0	23	4.5E+06	2.8E+05	1.0E+04		

## 50 MHz Outside Britain

Compilation and Commentary by G3USF

### Continental Europe

#### Auroral-Related Propagation

As we move down the cycle the pattern of relatively high geomagnetic activity continues. OH2LX notes a monthly average Ak of no less than 37.0, with just one 'quiet' day at Sodankyla, the 31<sup>st</sup>, with an Ak of 9. The most disturbed day there was the 18<sup>th</sup>, with an Ak of 99. College, Alaska, reported 132 on the same date; the Ap figure was 86 with K5 or higher for all 3-hour periods, through to 0000-0300 on the 19<sup>th</sup>. The peak K of 8, corresponding to severe storm, was recorded between 0600-0900. With relatively minor exceptions on the 21<sup>st</sup>, this was the only day when aurora spread substantially south of the somewhat arbitrary GM/Baltic line that we take as a reference point in this section, especially into DL, ON and PA (and, of course, G). The most southerly reported contacts were into JN86 and JN65. S57RR and I4EAT also worked but gave no indication whether the mode was auroral. Several reports mentioned beam headings of 060 and one reported 265 degrees. One suspects rather more interesting contacts may have been made during the afternoon period if more operators, especially those well to the north, had tried more audacious headings. Auroral-E appeared at several periods, at times coexisting with normal 'tone a'. However, as so often in auroral events, the best came towards the end, after UT midnight on the 18<sup>th</sup>/19<sup>th</sup>, with the contacts with VE1/VO1/W1/W2 on the one hand and VE4/W9 on the other. All reports are t9 with the exception of one from EI7IX, which mentions 'auroral tone' whatever that means, and one from K2MUB which is unequivocally 'A'. The propagation mode appears to have been AE, but some involvement of auroral forward scatter should not be excluded.

Aug 1 0000-10 Au>OH5IY 0000-0150 AuFM>OH5 0020-0130 Au>OH5 0200-50 AuFM>OH5 2250-2350 Au>OH5

Aug 2 1655 GB3LER>LA(JP20 52a)

Aug 5 2206 JW9SIX>LA(559AE)

Aug 6 0010-20 Au>OH5 0030-40 Au>OH5 0050-0120 Au>OH5 0130-40 Au>OH5 0210-20 AuFM>OH5

Aug 7 1417 OH9SIX>ES1(KO29 33a) 19-2000 JW9SIX>SM0(mode?) ES1>SM0(JO59 59a) LA(JO58)>SM0(55a) LA>OZ(53a) OZ(JO54)>SM0(55a) 1920-2040 Au>OH5 1930-2000 AuFM>OH5 20-2100 OH9SIX>SM2(KP15 57a) OH7(KP11)>OZ(51a) OH7(KP11)>SM0(JO99) ES1(KO29)>SM2(KP15 56a) OH7>SM0(JO89 55a) OH7>OZ(57a) SM3>OZ 2050-2210 Au>OH5 21-2200 LA>SM0(59a) LA(JO58)>OZ 2130-50 AuFM>OH5 2258 JW9SIX>SM2(KP15 529)

Aug 8 0110-0230 Au>OH5 0510-20 Au>OH5

Aug 11 21-2200 49750>SM2 JW9SIX>OH2(mode?) 2300-10 Au>OH5

Aug 12 0030-50 Au>OH5 12-1300 49750>SM2 OH9SIX>SM2(KP15) 1410-20 Au>OH5 1447 48/49tv>SM0(57a)

Aug 13 2150-2210 Au>OH5 2150-2200 AuFM>OH5

Aug 16 20-2100 OH9SIX>SM2(KP15 55a) JW9SIX>SM2(KP15 519) JW5SIX>SM2(KP15 579)

Aug 17 1810-50 Au>OH5 2040-2100 Au>OH5 2150-2200 Au>OH5 2240-2400 Au>OH5 2300-10 Au>OH5

Aug 18 all morning AuFM>OHtv/fm group 0000-20 Au>OH5 0030-40 Au>OH5 0050-0130 Au>OH5 0100-10 AuFM>OH5 0200-40 Au>OH5 0540-0640 Au>OH5 0540-50 AuFM>OH5 0630-40 AuFM>OH5 0700-50 Au>OH5 07-0800 ScandTV>PA(AE) 0840-1640 Au>OH5 11-1200 GB3LER>OZ(qtf 340) ES1(KO29)>OZ SM5>OZ 1110-1430 AuFM>OH5 13-1400 SM7(JO65)>DL SM5(JO99)>DL ES1>SM0(57a) SP2>SM0(JO93 57a) 14-1500 LA>SM0(59a) SM4>SM0(59a) SM5>SM0(59a) LA>PA ES1>SM0(59a) LA(JO28)>LA(JO59) ES1(KO29)>PA SM7(JO64)>DL(JO51) PA>SM0(59a) SM7(JO65)>LA ES1(KO29)>DL OZ>SM0(59a) YL3(KO26)>SP2 YL3(KO26)>PA(JO21) PA>DL OZ(JO55)>PA(JO21 59a) DL>SM0(55a) YL3>OK1(JO70 57a 030) SM0>SM6 SP2(JO93)>DL SM6(JO57)>DL SP2(JO94)>DL(JO62 55a) SM7(JO86)>DL 1440-1540 Au>OH5 15-1600 OZ(JO60)>DL SM7(JO86)>DL SM7(JO65)>DL(JN68) SM7(JO65)>9A1Z(JN86) OZ(JO47)>

PA(JO22 59a) SM7>DL(JO5) 020 55a) OZ(JO45)>ON 55a) SM0(JO89)>DL SM7(JO65)>DL(JN49)  
OZ(JO47)>SP2) GM(IO86)>ON(55a) SM0(JO89)>SP2(JO94 355 59a) SM7(JO65)>DL(JN59 53a)  
SM7(JO65)>DL(JN49 020) SP8(KO11)>SP2(JO94 55a 010) 16-1700 OZ(JO55)>DL(59a)  
SM7(JO86)>DL(JO50 53a 020) S57RR>SP2(JO32) GD>ON(55a) S57RR(JN65)>PA(59a 060)  
DL(JO50)>DL(JN68 55a) SP2(JO83)>DL(JO50 53a 050) OZ(JO70)>OK1(57a 020) SM7(JO65)>  
ON(55a) 7SIX>OH2(mode?) GM(IO86)>ON(JO21 449a) S57RR>I4EAT(mode?) ON0SIX>PA(53a)  
17-1800 F(JN19)>PA(JO32 060 57a) GB3MCB>EI(53a) G(IO91)>ON(JO21 55a) DL>PA(55a)  
EI>PA(JO21 55a) JW9SIX> OH6(KP02 599AE) 1730-1810 Au>OH5 1730-40 AuFM>OH5 1750-  
1800 AuFM>OH5 18-1900 G(JO03)>F(IN78 55a) LA>PA(JO32 55) OH7>PA GB3LER>EI(53a) 19-  
2000 JW5SIX> OH2(559) OH9SIX>SP6(JO80 579AE),PA(589 JO21),DL(JO31),ON(579),DL(JO3!  
579AE) SM2(KP07)> SP6(JO80 55) OH7>ON(mode?), DL(JO31 599AE) OH2>ON(mode?) 20-  
2100 GI>SM0(mode?) OH9SIX>DL(JO62 559fi) OH8(KP34)>DL(JO41 59) OH9(KP36)>DL(JO62  
59AE) OH8(KP34)> DL(JO31 59AE) SM2(KP07)>DL(JO41 59) LA(JP66)>DL(JO31 59) LA(JP66)>  
DL(JO31) OH9(KP46)>DL(JO41) LA(JO59)>LY(KO25) SM2(KP15)>DL(JO31) OH7(KP11)>  
DL(JN59 51) LA(JP43)>DL(559) OH7(KP11)>EI(59) LA>DL(JN59 59) OH7(KP11)>EI(IO53)  
LA(JO48)> LY(KO25) LY(KO25)> DL(JN59 539) LA(JP32)>DL(JO41 59) LA(JP32)>F LA>PA(599)  
OH3(KP31)>EI(IO53) LA(JP88)>DL(JN59) SM5(JO89)>LY(KO25) LA(JP66)>DL(JN59 59)  
OH7(KP11)>DL(JN59 53) PA>LA(JP53 579) ON>LA(JP53) OH9SIX>ON(JO20) 21-2200  
SM2>DL(JO31 59) JX7SIX> PA(JO21 559) GB3LER>DL(JO62 599) GM>SM0(59) LA(KP09)>PA  
GM(IO99)>OZ ES1(KO29)> EI(IO53) JX7SIX>ON(559) OY6SMC>DL(JO31 559) JW9SIX>EI(IO53  
599) OY6SMC>DL(JO51 559) GM(IO99)>DL(JO62 55) JX7SIX>DL(JN59 579) GB3LER>DL(JO31  
599) GM(IO99)> DL(JO31) OY6SMC>DL(JO31 589) GB3LER>DL(JO32 599),DL(JN49 529)  
LA(JP32)>DL(JN59 55a) LA(JP32)>DL(59) EI>EI(IO53 53a) OY6SMC>ON(559) OX3VHF>  
DL(JO31 529) JW9SIX> DL(JO31 579) GB3LER>DL(JO31 59AE) GM>OH2(559) JX7SIX>  
DL(JO31 559AE) LA(JP32)> DL(JO31 578 AE) OY(IP62)>EI(IO53) GD>OH2(mode?) GM(IO68)>  
DL(mode?) OY(IP62)> DL(JN59 57) LA(JP33)>DL(mode?) 2030-2300 AuFM>OH5 2100-40  
Au>OH5 2133-59 FM(G,EI)>OH6 2200-2350 Au>OH5 22-2300 GB3RMK>DL(JO31 559)  
OH7(KP11)>PA(mode?) OY(IP62)> OZ(mode?) GM(IO77)>DL(JO31 59AE) OX>EI(mode?)  
TF(HP84)>DL(JO31 59) G>ON(52a 000) VE4ARM>EI7IX(529),EI3IO VE4VHF>G1INK(539 I093)  
LA(JP32)>DL(mode?) VE4ARM>PA2V(529) GB3LER>DL(JN59 mode?) GW>PA(mode?)  
GM(IO67)>DL(JO62 579) TF>PA(mode?) GM>SP1(mode?) LA(JP20)>EI(mode?) GM(IO89)>  
DL(JO31 59) LA(JP20)> DL(JO31 59) GM>ON(mode?) G>LA(mode?) JW9SIX>SM0 53a) 23-2400  
LA(JP20)>DL(JO31 55AE) LA(JP53)>DL(JO31 599) LA(JP40)>DL(JO31 599) G>SP2(54AE)  
OZ(JO65)>DL(JO31 55a) OY6SMC>DL(559) OX3VHF>EI(519) VO1ZA>MM0AMW(539)  
LA7SIX>DL(JO31 559AE) TF>EI(599) GB3LER>DL(JO31 599AE) OX3VHF>DL(JO31 539AE)  
OZ6VHF>EI(519) VO1ZA>EI7IX(519)

Aug 19 0000-40 Au>OH5 00-0100 KA9CFD>EI7IX(51 'auroral sound') VE1YX>EI7IX,EI7BMB  
OX3VHF>PA(JO22 579) EI>PA(55a) 0010-30 AuFM>OH5 0100-20 Au>OH5

Aug 20 1616 40MHz>SM0(57a) 2340-2400 Au>OH5

Aug 21 0010-0110 Au>OH5 0100\_0130\_Au>OH5\_OH9SIX>SM2(KP15 59a) 0629 49750>SM0 12-1300  
OH9SIX>SM2(KP15 57a) 1230-40 Au>OH5 13-1400 Au>OH5 OH9SIX>OH5(KP30 57a)  
OH1SIX>OH5(KP30 57a) LA7v(JP38)>PA(JO21 56a) 1450-1650 Au>OH5 1600-30 AuFM>OH5 16-  
1700 GM(IO68)>DL(JO32 56a) 17-1800 GM(IO68)>PA(JO22 55a) SM7(JO76)>DL(JO32 55a)  
GM(IO86)>PA(JO22 55a) SM7(JO76)>PA(JO22 57a) 18-1900 G>PA(JO21 56a) G>LY(KO14 56a  
350 DL(JO54)>LY(KO25 56a 265) 2010-20 AuFM>OH5 2100-40 Au>OH5 2150-2400 Au>OH5  
2310-50 AuFM>OH5

Aug 22 0000-20 Au>OH5 0040-0200 Au>OH5 1310-1520 Au>OH5 1440-50 AuFM>OH5 2040-50 Au>OH5

Aug 23 1530-40 Au>OH5

Aug 24 1447 49750>SM2 1530 49745,49750>OH6(KP02) 2105 OH9SIX>SM2(KP15 57a)

Aug 25 0546 OH9SIX>SM2(KP15 56a)

Aug 28 1220 49750>SM2

Aug 29 1337 49750>SM2(59a) 1907-14 JX7SIX>OH7(KP32 599AE) JW5SIX>OH7(KP32 599AE)  
JW9SIX>OH7(KP32 579AE) 1930-40 Au>OH5



## Other Modes

Contacts were down on July and, numerically, far below August 2002 levels. The marked decline in the last week previously remarked in G0AEV's commentary, held true across the continent - though that period also brought signs of an emerging equinoctical pattern. Sporadic-E remained the principal mode even though the season was past its peak. The continental reports are also in line with G0AEV's comments on how markedly this mode was affected by geomagnetic disturbance and how little Es occurred during the last week of the month. Openings were often briefer and more geographically focussed but there were nevertheless also excellent periods like the evenings of the 3<sup>rd</sup> and 6<sup>th</sup>, when Scandinavia was workable across much of Europe at good strength and for substantial times. (It is possible auroral-E came into play at times on the 6<sup>th</sup>.)

Little was heard from Asia, though several callsigns that popped up from Iraq caused some excitement on the 14<sup>th</sup>(F,I), 15<sup>th</sup> (DL,EI,F,I,I9,LY,PA,S5,SP), 16<sup>th</sup> (I) and 17<sup>th</sup> (F,I,YU,9A), with HZ into Italy on the 7<sup>th</sup>.

Southern Africa was represented by ZS, into the Mediterranean on August 19<sup>th</sup>, 20<sup>th</sup>, 25<sup>th</sup> and 30<sup>th</sup> - the only day when signals also reached further north, to G and ON. Z2 was heard in 9H on the 8<sup>th</sup> and 7Q was reported from the Mediterranean on the 20<sup>th</sup>, 23<sup>rd</sup> and 27<sup>th</sup>, and into northern Europe (DL, ON,PA) on the 14<sup>th</sup>. (The 2002 figures for southern Africa as a whole were 27 and 16 days respectively for the Mediterranean and the northern countries.) Tep was present on several days.

West Africa held up a little better, probably because, unlike southern Africa, it was within sporadic-E range. Setting aside the 2002 9Q1A dxpedition, there were 8 days with propagation into the

Europe<>West Africa		
	<u>Mediterranean</u>	<u>Northern Europe</u>
TR	3 days 2 3 28 31	
TZ	4 days 13 14 19	1 day 19(ON)
5T	1 day 16	1 day 16(EI,G,PA)

Mediterranean in both 2002 and 2003. Countries further north had openings on two days against only one in 2002. Additionally, TZ was reported into France on the 18<sup>th</sup> but not elsewhere.

In the detailed listings below callsigns given in full are either picked out as 'DX' or indicate beacon operation, thus demonstrating that the propagation supported even for low erp transmissions, rather than just for the 'big guns'.

Aug. 1 08-0900 3V8CB>G,S5 I9>F 09-1000 CT0SIX>PA 3V8CB>GW,PA,OK1,DL,F I9>9A  
IS0,SV1SIX>CT CN8MC>I2 CT>ON 10-1100 CT>ON,DL ZB2>S5 F>EA7 CN8MC>EI 11-1200  
CT0SIX>EI CN8MC>I1 14-1500 K4RX>EA7 CN8MC>I5 3Ctv>PA 17-1800 CN8MC>F 18-1900  
CN8MC,CT0SIX>IS0 2135 T7>S5

Aug 2 06-0700 4X>9A 07-0800 CN8MC>F,EI CT0SIX>EI,I2,F SV8>I7 08-090 CT0SIX>I1,PA  
ON0SIX,LX0SIX>PA 4U1VIC>EA7,OZ,OK1,S5 09-1000 YO7>K1(t) CN8MC>F 10-1100  
4U>9A,OM3 11-1200 EA5>EA7 EH9>EA5 GB3LER>LA ZB2>EA5 12-1300 OK1>OM3 4U>I4 13-  
1400 4U>OM3,PA 14-1500 LX0SIX,PI7SIX>ON 9H>HB 4U>SP6 SV1SIX>DL 17-1800  
TR0A,3Ctv>EA7 SN6>DL 18-1900 SM7>DL 2112 GB3BUX>PA(t)

- Aug 3 05-0600 4U>OE1,OM3\_06-0700\_4U>OM3\_DL>PA\_4U>PA,S5\_OH2>ES1\_07-0800\_ES7>ES1 OH8>SP6\_ES8>ES1\_LY>ES5 ES5>SM3 ES4>ES1 08-0900 CN8MC>F LZ9>ES1 UR>DL,9A 09-1000 5B,CN8MC>F OK2>SP6 SM3>ES8 SV2>SV1 ON>DL(t) 5B>9A OD5SIX>S5 SM0,G>ES1 OL1>S5 10-1100 LZ3,EH7>DL I1>S5 I0>SV5 4X4SIX>I0 11-1200 HB>CT UU5SIX>I5 CN8MC>I1,PA,F CT>I0 SV1SIX,SV9SIX>DL LZ2CM>F 12-1300 SV1SIX>ER1,SP8 SV9SIX>SP8 `9H>ER1 GB3MCB>EI 13-1400 SN6>SV1,SP6 OD5SIX>9A 4U>OK1 I9>ON OL1>SV1 GB3MCB>EI 14-1500 UR>9H 9H>ON,F W1JJ>EA7 15-1600 W1JJ,NN4X>EA7 EH5>S5 EH7>I5 I0JX>PA 16-1700 I6>I8 17-1800 3Ctv>F 1858 JW9SIX>LA 19-2000 JW9SIX>OH6,SM6,SM0 JW5SIX>SM6,SP2 LA>SM0,SP2,OH6 OZ>LA SM7>SM0 20-2100 SM2>SM0,SP2 OH9SIX>SM6 LA7SIX>SP2,DL,OZ OH9SIX,SP2>SM0 21-2200 SM2>PA,DL LA7SIX>PA,DL LA>OZ,EI JW5SIX>DL SM3>LA TF>DL 22-2300 LA>PA,OZ,EI,GW OH9SIX>EI,DL PA>SM2,OZ OY6SMC>ES8,SM0 G>LA GM,TF>SM0. 23-2400 LA>EI,SP2 OH9SIX>EI
- Aug 4 0850 F>PA(t) G,ES4>9A 10-1100 I1,GB3MCB,CT0SIX>EI 11-1200 CN8MC>EI I0>LA 12-1300 CT>EI ES0SIX>S5 ES5>I4 S55ZRS>ER1 13-1400 ES0SIX>HA1,9A SV1SIX,SV5SIX,SV9SIX>I5 ES8>ES2 SM5,OH2>9A SM6>YO2 S5,OK2>SM0 GB3MCB>EI 14-1500 OM3,I0,I6>SM0 15-1600 SM0>I5 I0>S5 16-1700 I4,I1>S5 1926 F>PA 2213 OZ>PA
- Aug 5 09-1000 EPtv,Yktv>9A SV1SIX,I2>I4 OD5SIX,SV9SIX>9A GB3BUX>PA 11-1200 SV1SIX>F CN8MC>I0 12-1300 EH1>IS0 CN8MC>I1 IS0>PA CN>EA7,HB EH4>9A 13-1400 CN>F,DL,SP6 I0>ON F>I2 EH5>PA,SP6 OE3,F>EA1 LZ1>OZ 14-1500 CT>I0,DL,PA EH1,EH3,EH5>DL GB3LER>HA1 CN8MC>OE5 UR>I1 GB3MC.I1 F>I0,I3 G>I7 15-1600 I8>ON F>HB GW>I7,I8 EH4,EH3,CN8MC,I0,CT>DL EH4>DL,EI EH5>OZ F>I7 EH2>EI 16-1700 I5MXX>EI F>I3 EH3,EH2>DL I8>PA 17-1800 G>9A YU1>I2 CT>DL,PA GB3IOJ,GB3MCB>9A F>DL 1800 CT>ON 1947 GB3LER>LA 20-2100 UU5SIX,5B4CY>DL UR>OZ UU5SIX>PA 21-2200 OD5SIX>DL,PA JW9SIX>LA,SM0 UR>SM5 OD5SIX>PA,SP6 SM0,LZ1>OZ 4X4SIX>PA 22-2300 I0JX,SV1SIX>PA YT1>DL,SM0 GB3BUX>PA(t)
- Aug 6 09-1000 LX0SIX>PA(t) CN8MC>I5 16-1700 OH9SIX>DL,SP6 17-1800 LA>SP2,LY,SP6,PA CT0SIX>EI OH2>PA 18-1900 LA7SIX>PA,DL OH6>SP2 OH9SIX>PA,9A JW5SIX,JW9SIX,OH3,LY>PA DL>OH2 SM0,LY,ES1>EI OY6SMC,ES1,OH6>DL OH6>ON OH8,LA>9A 19-2000 LA7SIX,SM6>9A JW5SIX>DL OH3>I3 ES0SIX,OH2,ES1,LY,OH3,ON>PA SM4>OK1 LA,ES3>OZ LY>EI ES0SIX,F,OH4,SM5,SM0,ES3,ES1>LX OH6>LX,PA,I1 LY>PA OH4,OH8,OH3,LY,OH4,ES1>DL LA>OZ 20-2100 GM,LA,SM7,SM0,ES1,YL3>DL OZ,OH9SIX>EI LA,GB3LER>9A OH4>I1 LX,LY>PA YL3>ON ON>LA 21-2200 LA>ON,PA,DL GM>DL,OZ G>LA,SM0 OY6SMC,SV1SIX,SV9SIX>DL GM>SM7 22-2300 GW>SM0 SV1SIX>PA,DL SP6>PA YU1>EA5
- Aug 7 0517 ES0SIX>SP6 0617 F>F(t) 07-0800 SV1SIX>9A,PA SV9SIX>9A,OE3 YO7>PA YO7>SP6 08-0900 I9>SP6,PA YU7>PA LZ1JH,LZ2>F PA>I0 LA>I5 LZ2>SP6,DL 4X4SIX>F GB3MCB>9A LA7SIX>I5 09-1000 SV9SIX>9A GB3LER>I5 SP1>EH3 IS0,EH3>DL 4X4SIX>I1,9A HZ1MD>I5,I1 EH3,I9>PA 10-1100 I8>ON IS0,CT>OZ I8,CT>PA EH3,EH5>9A I0JX,EH5>DL 11-1200 EH6,CN8MC>PA EH7,ZB2>I1 CT>I5 13-1400 G>9A 15-1600 CN8MC>DL 16-1700 CN8MC,GB3MCB(t)>EI EI OZ7IGY,ON1SIX,GB3BUX,PI7SIX>PA 17-1800 OH9SIX>SP6 aurora
- Aug 8 0534 ES0SIX>SP6 06-0700 UR>9A,OE3,OM8,SP6,DL,I5,SP8 LZ1>SP8 OE5>OK1 07-0800 F,UR>DL UR>PA 08-0900 UR>DL,OE3 LZ1,LZ2>SP6 LZ1JH>PA YO8>PA,I1 YT1>DL 09-1000 OK2>IS0 YT1>SP6,DL LZ1>DL,PA T9,SV1SIX,HB>DL I4>PA SP7>IS0 OM3>I4 F>ON PA,F>ER1 YU1>SM0 10-1100 I4>LA OM3>ON GB3LER>LA 1115 YZ1>SM0 14-1500 GB3BUX>PA(t) 15-1600 GB3LER>LA 16-1700 GB3MCB>EI(t) 18-1900 SM5>OM3 OH9>OH6 EPtv>9A 20-2100 JW9SIX>SM6,SM0 JW5SIX>SM0 2312 GB3LER>LA 2344 GB3MCB>PA(t)

Aug 9 05-0600 UU5SIX,OD5SIX>9A G>OE5 06-0700 LZ1>DL IK5ZUL>LA LZ2>OK1 UR>I8 SV9SIX>9A,OE5 I1>LA GB3BUX,GB3LER,OE8,UR,LZ2>9A 07-0800 UR,HB(ms)>9A LZ2,UR>OE3 LY>DL,F,OK1,9H LZ2>OE5 LZ1>OE3,LX UR>I0,9GH Z3>ON LZ3,OK1>PA SV9>OZ G>I5 LX>ON SP2>OK1 08-0900 SV9,LZ3,I0,LZ5,Z3,YO7,I9,EH7>DL OE5,S5>I0 Z3>SP9 LY>I8 IS0>OK1 OM3>I4(t) LY>SP6 9H>PA 09-1000 9H>OK1,SP7,I3,EI HB>I5,I0 LZ1,I8,9H1SIX,OH9>DL S5,HB9SIX>EI DL,9H,I0>PA S5>I4 OH1SIX,OH6,OH9SIX>SP6 IK5ZUL>EI 10-1100 EH8,EH3,EH9,EH7,EH4,S5>9A EH9>I1 9H,S5,IS0,I7>DL OH9>SP2 IS0>OZ CN8MC>EI 3V8CB>ON,PA,G,DL YU1>EA1 CT>EA3 11-1200 CT>I1 3V8CB>DL,OZ OH9,OH6>DL OH9,LA7SIX>SP2 DL>OH6 I0>PA OH9>SM6,I0,SM0,OZ,PA,OZ EH5>SP7,ON 12-1300 OH9>OZ,DL,LA GB3MCB,EH5,G>DL EH1>9A FX4SIX>I0 W4SQ>ON GJ>I0 EH7>ON,PA 13-1400 OH9>SM0 I0>ON W4SQ>ON CN8MC>DL,PA GW>DL(t) 16-1700 CT0SIX>EI,PA ZB2,CN8MC>I0 W4SQ>EA7 IK5ZUL,I0>EI ZD8VHF>G,PA 17-1800 G>I0,CT EH3>PA,SM6,OZ OM3>SP6 OH9>DL,SP6,EI OH9SIX>PA,OZ LA7SIX>DL ES1>EI LA>ON 18-1900 DL>EA5 GM>SM0 LA>DL OH9SIX>SP8 OH7>ON OH6>EI,SP6 GI>SM0 19-2000 EI,G>SM0 OY6SMC,GB3LER>DL IK5ZUL>EI LA>PA LY>EI,ON 20-2100 OZ6VHF>EI GM>DL,OK1,PA OY6SMC>PA EI>LA,SM0 KP2/K2ZZ>S5 I5>SP6 LA>F TF>EI,F 21-2200 EI>DL VE8BY>EI,F,G 23-2400 GB3MCB>PA

Aug 10 00-0100 LX0SIX,PI7SIX,ON0SIX>PA 05-0600 ES0SIX>SP6 06-0700 OE3XBL>SP6 LZ1>DL,OZ YO7,PI7SIX>DL LX0SIX,ON0SIX>PA 08-0900 F>DL G>9A SP9>UI1 OE5>DL OM3>EH3 PA>I5 SV8>SP6 UU5SIX>OK1,SP6,I0 LZ2>I6,9A OH9>SM6 S5>EI SV8>DL UR>9A 09-1000 SV1SIX,SM5>LY SV9SIX,LZ1,LZ3,YO9>DL LZ1>OZ G,I0>9A Z3>HB,PA I5>F OM3>SP6,I9 SP7>9H LZ2>HB 10-1100 I8>PA 4N1ZNI>YU1 LZ2,I0>DL Z3>I2,9A,DL,LX I9>OK1,DL,LX EH3,CT0SIX>EI I0>LX S5,EH3,EH4>9A YT1>I5 I8>LX,DL LZ1>OZ 3V8CB>PA 11-1200 3V8CB>OZ,G,I4,ON,PA SM7,PA>9H YT6,Z3,I2>LX I8>DL,EA7,OK1,PA,OZ I0>DL I0>LX ON,PA,F>I7 12-1300 G>I7 CT3>EA7,F I0>DL LZ3>SM0 OK2>9A 13-1700 T7>PA 14-1500 CT0SIX>EI 15-1600 SV1SIX,LZ1>DL LZ2>PA 16-1700 I7,T9,LZ2>DL SM7>I8,I9 UU5SIX>SP6 OH9>ES1 Z3>PA,LX I8>SP6 SP1>I8 LZ1>PA I0>I5 18-1900 OH9>SM6,SP2 LX>PA(t) 1902 EPTv>DL 20-2100 OH9>OZ,PA,LA 21-2200 VE1YX,K1TOL>EA7 VE1PZ,VE1YX>CT 22-2300 OH9>SM0,LA 23-2400 OH9>DL(ms)

Aug 11 06-0700 OK2>I5 07-0800 G>I0 I0>PA 08-0900 UU5SIX>I4,I5 I8>I0 I0>DL DL>I5 OM3>EH3 9A1CAL>F 09-1000 UU5SIX>9A EH5>DL,PA,OK1 Z3>PA G,HB0>IS0 10-1100 OH9SIX>SP6 YO8>I5 UR>5B,9A S5>EA7 OH9>OH6 UU5SIX>YO2 HZ1MD>5B 11-1200 YZ1>9A UR>I0,OE6,9A OH9>DL UU5SIX>SP6,S5 15-1600 UR>9H,OZ,DL LZ1>OK1 OK1>ES YO8,OH9SIX,ES4>9A LZ3>SP6 LZ1>OZ,SP6 GB3MCB>9A SP5,SP7>EI UU5SIX>9A GM,YO7>DL 1532-6 FM(LZ)>OH2(Es) 16-1700 I3,OM3>EI F>S5 UR>PA,EI,OZ,OK1,DL LA,GB3LER,OZ6VHF,SM5,SM7>LX F>I0 ES6>OK1 SP7,LZ1>PA OD5SIX>OK1 LY>HB FX4SIX,5B>SM0 17-1800 LY>I0 5B,OH9>SM0 9H>I3 UR>PA I0JX,SV1SIX>LY CN8MC>F PA>YO2 LY1,YL3>I0 UU5SIX>OZ SP8>SV1 18-1900 SV8>SP2 LZ1,YU1>OZ LY>I5 UR>PA,ON YO7,YO8,SV1>LA CT>F SM0>9A ,I0 SV1SIX>LY CT0SIX,I4,F,LY>EI SV1>SM0,SQ6 CN8MC>EI,LY LZ1,OM3>LA,SQ6 I5>OH2 S5>SV119-2000 SP5,I4>SQ6 CN8MC>LY CT,OM3,OH3>DL CT>SP9 SV1SIX>S5 EH2>EA6 LZ3>F S55ZRS,OE5>SV1 S5>I0 ES0SIX>S5 I5>EA7 I0>LA LZ3>HB Z3>EI,LX SM7>I0 I0>SP2 EH4>I1 YL3>I5 20-2100 Z3>I1 SV1SIX,SV9SIX>I1 I5,DL>SV1,S5 I1>EI

Aug 12 01-0200 CN(ms),DL(ms)>F 0516 G>F(ms) 06-0700 SVSIX>DL OE5>DL(t,ms) 07-0800 9H1SIX>DL,OE3 SV9SIX>F,OE3 SV1SIX>F,OE3 08-0900 SV5SIX,SV1SIX,SV9SIX,TA2>I5 SV8>EH3 HB>DL 09-1000 F>ON SV1SIX,9H>I5 10-1100 OH9>DL,SP2,SM0 11-1200 LA>DL OH9SIX>SP2 12-1300 OH9>SM0,DL,PA I9>I1 OM3>OZ 14-1500 OH9>PA,DL,OZ G>SM6 15-1600 OH9>OH6,SM2,PA,SP2,SP6 ON>PA(bs) 17-1800 G>I5(ms) OM3>DL(ms),SM6(ms) S5>OM3 1944 EH1>9A PA>F 20-2100 SM5>SP3(ms),SP6 21-2200 OK2>S5(ms) 22-2300 S5>I0(ms) OK2>F(ms) 23-2400 LA>PA,9A,DL

Aug 13 00-0100 LA>SP2,HB,SM6,DL(ms),PA(ms) 01-0200 LA>ON(ms) 05-0600 G>SP3  
LA>ON,DL,OK1,SP6 06-0700 LA>PA DL>SP3(ms) 07-0800 IS0>S5(t) LA>PA,DL,OZ OH9>SP2  
08-0900 LA>F 09-1000 SV1SIX>9H,I5 LZ2>I0 OZ>LX TA2>9H I9>EH5 10-1100 LZ2,5B>9H  
9H>DL 11-1200 TA2>9H I9>SP6,SP7 EH5>I7 12-1300 UR>I2 9H1SIX>SP6 5B,YU6>I0 S5>I9  
I8>SP6 13-1400 I9>SP6 S5>T7 SV9SIX>T7 TZ6RD>EA5 14-1500 EH5,EH7>T7 TZ6RD>IS0  
S5>EA7 CT0SIX>I1 19-2000 OH7>SP3 20-2100 SP6>F(ms) I5>SP3 4X>5B 21-2200  
JW9SIX>SM2 9A>4X,I5 SV1SIX>4X CT>I5 22-2300 SV1SIX>9A I1>I9 23-2400 I9>PA(Es) OK2>EI

Aug 14 07-0800 S5>I9 F,CN,SV,EA7,SV9>I0 08-0900 TA2>I0 091000 9H1SIX>DL 4X,I5,SV9SIX>I0  
TA2>9H 10-1100 I9>I0 TA2>I9 0H1SIX>I3 11-1200 9A>I9 SV9SIX>I0 SV1SIX>I0,9A I0>CT 9H>9A  
12-1300 9H1SIX>SP6,I5 F>9A SV3>I5 PA>S5 13-1400 F>I7 T7>OE8 I8>DL I0JX>PA EH1>OE6  
IK5ZUL,I9>PA 9A>I1 I5>ON 14-1500 I0,I8,T7,LZ1>PA 9A>ON I0>DL PA>I7,SM6 GW>SM6 15-  
1600 I4>S5 LY>4X TZ6RD>EA5 I9>SP6 IK5ZUL>I1 16-1700 SV1SIX>SP6,DL,PA I0JX>DL 4X>I1  
YI/S53R>F YI/ON5NT>I2,F I8>LX 17-1800 ON,I8,GW>LX YI/ON5NT>I5 EH3>YO2 I0>DL  
SV1,HB>EI I9>I0 DL>IS0 CT,UU5SIX,CN8MC>DL IS0>PA GM>HB,ON I4>LA SV8>F EI>SP6  
LZ2CM,IZ1EPM>LY G>SP6 7Q7SIX>ON I4>LA 18-1900 9A1CAL,I9>DL LY>ON PA>LX  
7Q7SIX>DL,PA 9H>PA,HB PA>I9 G>SP6 LA>IS0 CN8MC>LA,PA IS0>PA UR>I5 GB3LER>HB  
CN>EI,LA CT0SIX>EI PY1RO>SP4,IS0 19-2000 OH6,CN>PA,LY EA7>ON CT>SM0 OE5>SV1  
CT>LX,PA PY1RO>LY SM0,SV1SIX>9A SP5,LZ1>SP2 EI>SP9,9A GW,LY,GM,LZ1>HB  
SP6>EH3 EI>I3 20-2100 LZ1,UU5SIX,IS0,9H>SP2 9H>SP7,DL IS0>DL 21-2200 UU5SIX>4X  
IS0>OK1 I8>ON

Aug 15 06-0700 UR>LA EA7>CT SV9SIX>I1 ES4>I6 07-0800 I0>LA SV9SIX,ES2>OE5 LY>9A,SP6  
Z3>F,I9 ES1,SM7,OH4,OZ>9A OH4,9H,LA ES1>SP6,I1 0722-40 FM(I)>OH2 08-0900 4X>PA  
IS0>SP2 EH7>I5,I8 YI/S53R>I8,ON,F,DL,LY,I9 LY>I5,LX SM7,ES1,OZ>9A OZ>I8 PA>SP7  
ES1>HB I5>SQ2 4X>I0 0834-0900 FM(YU)>OH1(Es)09-1000 4X>I0,9H LA,OH5,LY,4X>9A  
SQ2>I5 I0>I3,OH2 OM3>OK1 YI/ON5NT>EI,ON LY>HB SP9,UR>DL UU5SIX>LY,SP6 GW>I3  
SP9>PA 4X,UR>ON YI/PA5M>PA,LY LA>HB PA>SQ9 10-1100 OZ>I3,OE6 CT,OK2,SP9,SP5>PA  
GW>OE3 5B>I7,9A 5B4CY>EI ES3>HB LY>CT I6,I0,F>DL EH7>LY 5B>CT F>SP6,PA SM7>F  
4X,EH2>I7 EI>SP6 I0>SK0 OH7>OE3 11-1200 GB3MCB>DL EI>I1 OZ,LX,F,ON0SIX>EA1  
IK5ZUL>SK0 UR,OD5SIX>9A EH2>PA S5>LA GB3LER>SP6 SM5>I3 EI>4X,9A LY>LX UR>I7  
4X>SM3,S5 SV1SIX>SP6 YI/ON5NT>I1,S5 12-1300 YI/ON5NT>SP2  
SV1SIX,4X4SIX,OD5SIX>PA F>SP1 EI>I3 UR>ON,I3 13-1400 UR>I1 F>PA DL>F,OK1 I0>SP6  
GB3RMK>CT 14-1500 OK1>DL SM6,CN8MC,I0,GU>F 15-1600 CT0SIX,EA1,EH7,GW>F EH7>F  
16-1700 EH7,CT0SIX>EI CT>DL,I3,PA,F,EI I1>I0 I5>PA,F EH1>I3,9A CN8MC>PA EH8>EH3,F  
UR>I1 OH1SIX>OE5,SP6 OH9SIX>9A,OE5 OH2>9A SP7>SM2 17-1800 OH2>SP6,LX UR>I8  
EH4>LX OH1>SP6 SP9>SM0 ES5>LX,DL,SP6 CT3>F,EI,HB,OE5 OH6>9A,YU4  
EH5,OD5SIX,YU1>PA OH3>EA7 I7>OZ OH3>9A GM>I3 CT3>CT SV1>OK1 SP8>F I8>DL  
I0>SQ9,SP6,OZ 18-1900 I0,I5>OK1 EH2>OE5 CN8MC,OY6SMC,GB3LER>DL EH5>SM0  
F,ES0SIX>PA F,OM,EH3,IZ1EPM>SQ9 I5>OE5 CT3>CT,F,I0 9A>OZ,PA EH3>9A LA>S5  
EH7>F,OZ SM0>ON OZ>EI 19-2000 GM>OZ,SP6,I1 OD5SIX>DL  
9H>S5,PA,HB,OE5,OK1,EI,9A,SP2,LY SM0>PA(sc) EI,F,GW>LA I9>OE5 JW9SIX>F GW>9A  
GM,I7,F>PA 20-2100 GM>ON JW5SIX>SM2,OH2 CN8MC>EI CT>I8,HB EI>HB,PA,LX,ON,EH5  
F>SP2 UU5SIX>LY F,G>S5 JW9SIX>SM0 GB3MCB>PA 21-2200 F>PA  
CN8MC,EH5,EH4,SV9>LY EH4>HB,OZ CT>EI,OZ JW9SIX>SM0 22-2300 LA>PA,SM0

Aug 16 04-0500 ES0SIX,OE3XBL>SP6 06-0700 SV1SIX>F CN8MC>SV1 07-0800 9H1SIX.OE3XBL,  
OH9SIX>SP6 9H>5B,I2 08-0900 I9>I2 EA7>ON F>IS0 4N1ZNI>YU1 I5>SM6 09-1000  
CN8MC>I5,F 4X4SIX>F YI/ON5NT>5B 10-1100 EH1>EI YI/ON5NT>I5 EH7>DL EH3>9A,OE6  
EH3>F IS0,I8>4X EH8>OE6,9A EH9>9A 11-1200 EH5,I6>9A EH8,EH2>PA SV1SIX>DL,,OE54X  
EH5>F,PA GB3MCB>DL F>SP6 HB>EA1 GW>OZ 4N1ZNI>SM0 12-1300 OK2,OM6,SR9FHA>F  
F>SQ9,S5 PI7SIX,GB3BUX>9A OZ>I7 I3>PA 13-1400 GI>HB I3>F F>S5,HB 14-1500 GW>F,DL  
CT>PA F>CT 5B>4X 15-1600 F>CT 4X>5B CT>ON EI>CT GB3IOJ>DL 16-1700 CN8MC>I5 17-

1800 5T5SN>G,F,PA,EH3,EI 18-1900 EH2>PA ON0SIX>LX aurora 2047 IS0>I0 2255 YU1EO>PA  
23-2400 YU1EO,LZ2CM>PA YT1>DL GB3MCB>LY OE3XLB>PA

Aug 17 0543 OD5SIX>9A 06-0700 SV1SIX>F,SP6,OE5 CN8MC>F I7>PA 07-0800 I8>PA,SP6  
I9>OZ,SP6,PA 9H1SIX>SP6 IS0>PA 08-0900 I9>PA,EI LZ1,LZ2,I8>HB LZ2>I9 OK2>I9 9A>I1  
IS0>PA Z3>HB,PA,I8,ON,I0 I1,9H,9A,EH7>9A YI/PA5M>I0,F,I5 IS0,I0>SP6 OE3>I0 I9>DL I1>EA1  
9H>I9 LZ2>F I0>I5 09-1000 I9,I0,4X4SIX>PA YI/ON5NT>9A YI/PA5M>YU4 TA1>9A 9H>SP6,DL  
LZ2>YU4 LA>I1 4X,SQ8,I8>ON 4X>OK1 I1>SM6 SV9,I9,HB,4X4SIX>F S5>EA5 I9>DL,ER1  
GB3LER,OZ,Z3>HB F>I8 10-1100 I8>I4 YL3,OZ.EA5,GD>HB PA>ER1 UR>ON Z3>EI  
HB,9H,CT,SV5>DL SV5>SP9 HB>OZ GB3BUX,PI7SIX>9A EH4>I0 SP3>F I9>OK1 YU6>PA  
PI7SIX>ER1 GB3MCB,EH3>SP6 OZ>I8 I3>EI F>DL 11-1200 S5>EA6 9H,I9,T9,EH6,EH5,EI>HB  
F,EH2,IS0,SV9,EH6,9H,EH3>DL EH4,G>9A G>S5 F>I8,SP2 OZ,I3,EH2>PA OZ>I8 12-1300  
PA>ON F>OK1 SP1,SM7,F>I8 EH1>I3 IS0>I0 F>OK1,I4,I3 9H>OK1,9A I9>OK1 F>DL,PA  
GB3MCB>9A 13-1400 F>SP6 I3,I5,F>PA I8,3A>DL 3A>I1,I9,OE5,PA,SP6,EI LZ2>ON  
EI,G,GI,SM7>HB IZ1EPM>SM0 SV1SIX>PA GW>I8 14-1500 3A>DL,I8,ON,OZ,SP6,IS0 I5>PA  
DL>F I>HB I6>ON I9>DL S5>SM0 K1TOL>I0 I5,SP6>F F>LX,ON GM>I2 GB3BUX>9A PA>LX  
F1GTU>DL 15-1600 GI>I2 F>LX,HB,DL F1GTU,FX4SIX>SP6 GB3MCB>SP6,HB GB3IOJ>SP6  
PA>F K1TOL>F,9A GB3LER>HB,F EI,GI>LX G>9A,DL K1GUN>9A 16-1700 G>I4 K1GUN>I8,F  
EI>I3 F>OZ,SP6 EH3>DL K1TOL>F F>I0,OZ,DL G>I3 GB3BUX>OE5 18-1900 G>I0 19-2000  
CN8MC,CT0SIX>I1

Aug 18 0459 OE3XLB>SP6 05-0600 OH9SIX,OH1SIX,ES0SIX,OH5,SP2,OH2,OH7>SP6 OE3XBL>OH2  
06-0700 OH1SIX,OH9SIX,ES0SIX,OE3XBL>SP6 CN8MC>F UR>OE6 07-0800  
SV1SIX,SV9SIX>SP6 08-0900 SV9SIX>SP6,9A SV1SIX,OE3XBL>SP6 I0>I4 09-1000  
GB3BUX>OE5 I4>I1,OE5(t),SP6 4X>5B 10-1100 I9>9A aurora 12-1300 TZ6RD>F aurora 19-2000  
TA1>DL,I4 UR>9H LY>SM0(559 t 643km) 20-2100 9H>SQ9,DL aurora

Aug 19 08-0999 F>SQ6 UU5SIX>9A GB3MCB>OE5 09-1000 F>SP6 OE3>F OD5SIX>9A 10-1100  
UU5SIX,OD5SIX>PA 1154 UU5SIX>OH5 12-1300 UU5SIX>SP6 F>SM6 13-1400 IS0>I5  
UU5SIX>9A I0>SP6(ms) UR>9A 14-1500 IS0>PA GB3LER>I5 UR>DL 15-1600 UR>SP2,SP5,SP1  
IS0>I0 UR>LY,DL,ON 16-1700 UR>SP6,OZ,SP1,PA,DL I9>I2 ES0SIX>F SM5>OH1 LY,UR>DL  
ZR1ADI>EA7 S5>OH2 EH7>EA5(bs) 17-1800 YL2>9A UR>SP6,DL,PA UU5SIX>DL  
9A1CAL>OH2 LY>S5 LW3EX>I0 CX3AN>EA5 SM5,LU9DFN,OZ,OX>F 18-1900 OZ,G>F  
UU5SIX>DL LU1DZK>EA7 TZ6RD>EA7,9H,I9,I1.EA5,G,DL PY1RO>CT YO3>SM0 S5>OH2  
YU1>F,OH2 19-2000 TZ6RD>ON,EA7 G>DL,S5 GB3RMK>9A,EA1 YO4,OH5>9H YU1>SM0 20-  
2100 YU1>OZ GB3LER,ES0SIX>9A LZ1>SM0,SP1 CT0SIX>EI SM0>YO2 21-2200 OH5>ON

Aug 20 05-0600 ES0SIX>SP6 ON0SIX,LX0SIX>HA1 DL,I1>SP2 06-0700 UU5SIX>SP9 F>HA5  
YO7,IS0>PA LZ2CC>OE5 07-0800 GB3LER>I2,9A,OE5 GB3RMK,G>9A OD5SIX>9A 08-0900  
LA>I2 GB3MCB,IS0>OE5 OK1>I9 I9>DL GM>SP6 EH4,IS0>EA7,9A YU7>OH2 CN8MC>I0  
SV1SIX,SV9SIX>SP6 09-1000 UR>9H EH7,I1,CT>EH5 ES6>DL OH5>OE5 F,I4,I5>EA7 10-1100  
UU5SIX>9H CN8MC>I5 YU6>SP6 ES0SIX,OH3>I0 UR,LZ2CC>PA SM5>OH2 OH9>9H I9>9H,S5  
11-1200 I9>OH2 OZ,SM7>I0 ES0SIX>S5 YU7,LZ1>ON 12-1300 GB3LER>SQ9  
ES0SIX,CT0SIX>F I0>OZ 13-1400 F>SQ9 SP8>ON OZ2VHF,GB3RMK>9A 14-1500 I5>SM0 16-  
1700 ZS6NK>9H,I0(tep) I0>9A 7Q7SIX>EA7 18-1900 IZ1EPM,IK5ZUL>EI EH4>DL 19-2000  
CT>OZ,PA EH4>SP6,DL IS0>EI EH7>PA F>F I5>I0 20-2100 EH4>SP6,EI I1>I0 ZD8VHF>PA  
CN>ON,PA 21-2200 CN>HB,9A,DL,PA G,PA>EA5 CT>DL,I0,PA EH5,CT0SIX>EI EH5>HB  
EH7>PA

Aug 21 07-0800 CN8MC>I0 aurora 1256 9A>T7 17-1800 I0>S5 aurora

Aug 22 0839 I5>I4 1140 EH4>9A 12-1300 CN8MC,LZ2CC>I0 14-1500 I4>T7 15-1600 I5>I9,I5,I0 18-1900  
I5>I4 EH4>F 19-2000 CN8MC>ON I1>I0 20-2100 I1>I0 YU1>F

Aug 23 07-0800 F>9A OK2>SP6 09-1000 IS0>S5 UU5SIX>SV1 SV1SIX>SP6 11-1200 GB3MCB>9H 1425 I5>I9 17-1800 OH9SIX>PA LA>PA SP5>SP6(bs) 18-1900 GM>LY,DL G>SM0 F>LY OH3,S5,HB,I3,LA,OH8,I5>PA OY6SMC>DL,PA GB3MCB>SP6 G,GJ,F,GB3LER>DL 7Q7SIX>9H LY>F,ON GM>HB SM0>ON LA>SP6 19-2000 HB,YL3,ES1,I1,I0JX,LA,OH3,F>PA F>SM0 FX4SIX,EI,OH3>DL EI,GM>SP6 SM0>ON G>OZ GM>HB EI>OZ 20-2100 SP6>S5(ms) F,GB3MCB>SM0 LY>F I4>LA CT,GM>ON 21-2200 G>PA GB3LER,GB3RMK,OY6SMC>F I4>I1

Aug 24 0647 OK2>SP6 07-0800 F>F 08-0900 GM>F(ms) 09-1000 I5>I0 OD5SIX,5B4CY>SV1 1259 5B4CY,OD5SIX,4X4SIX>SV1 1343 4X4SIX>9H 15-1600 HB9SIX,IK5ZUL>9H 9H>I2 OH9SIX>PA 1757 CN8MC>IS0 aurora

Aug 25 0500-0700 FM(UR,OE,I,OK,HA)>Oftv/fm group aurora 0857 S5>O6 09-1000 UR>SM0 OD5SIX,5B4CY>SP9 UU5SIX>SM3 UA0tv>PA(030) 1020 UR>LA 11-1200 UU5SIX>SP6,DL 49747(UA3)>PA 1558 ZS6TWB>9H 1625 ZS6WB>i8 21-2200 ZD8VHF>EA7 DL>OZ

Aug 26 1414 7X2LS>ON(?) 17-1800 OZ>PA,LA,ON DL,G>PA OH6>SM6 18-1900 OZ>PA,DL,F LY>SP2 OH0,SL0>SM6 19-2000 OZ>DL OH0>LY 20-2100 SM5>SM6 SM6,LA>OZ OH0>SM3 aurora 2124 G>ON

Aug 27 0659 OH9SIX>SP6 08-0900 OE3XLB>OH5 ES0SIX>OE5,OK1 OH1SIX>SP6,OE5 OH5SIX>SP6,DL GB3MCB>OE5 09-1000 GB3MCB>S5 9A1CAL,CN8MC,I0JX>EI OE3XLB>S5 EI>I1 10-1100 ES0SIX>I5 IZ1EPM,S55ZRS>EA1 OM3>9A 1708 7Q7SIX>EA7

Aug 28 0659 OH5SIX>SP6 1350 CN8MC>I5 17-1800 3Ctv>F 18-1900 TR0A>EA7

Aug 29 CN>F 12-1300 SM5>I0 LY>PA aurora 2032 9Z4BM>D44TD

Aug 30 08-0900 UR>5B I4>OM8,SM0 10-1100 UR>5B 1155 9H>DL 13-1400 SV1SIX,SV9SIX>T7 I3>9A LZ2CC>DL UU5SIX>SM6 14-1500 SV1SIX>I1 16-1700 ZS6WB>EH6,I0,9H,I4,G,F,I9 ZS6TWB>I5,5B ZS6OB>I0 ZR6SVZ,ZS6WGH,ZS6AVP>I9 ZS6BTE>IS0 ZS6DN>ON 17-1800 ZS6DDG>I9 LZ2CC>DL 19-2000 F>CN

Aug 31 07-0800 I9>I0 S5,OD5SIX>9A 08-0900 I3,S5>I0 5B4CY>9A 09-1000 I6>9A UU5SIX>9H 10-1100 I6>ON,OZ UU5SIX>I0 S5>I1 I4>I0 11-1200 F>ON 1455 I3>I5 16-1700 3Ctv>G I9>I7 1923 TR0A>EA7

### 50MHz PROPAGATION REPORT FOR AUGUST 2003 BY SV1DH

1. Data for all days (31), except on 4-19<sup>th</sup> Internet data only.
2. Relatively good days on: 11,13,14,15,20 (Poor Es>20<sup>th</sup>)
3. 48 MHz AF video (3C) on: NIL
4. 55 MHz AF video (5N) on: NIL
5. " to CN on: 1,16(2E) (R=6%)
6. " to ZS6 on: 30 (R=3%)
7. " to 5B on: 24 (R=3%)
8. " to 4X on: 13,16,24 (R=9%)
9. " to OD on: 24 (R=3%)
10. " to F on: 1,5-7,14,15,17,20
11. " to I on: 1,4,5,7,9,11-14,16-18,30
12. " to T7 on: 30
13. " to IS on: 2
14. " to CT on: 1,15(2E)
15. " to EH on: 14

16.	"	to 9H	on: 13,14,16,17
17.	"	to DL	on: 2,3,6,8,10,11,12,14,16,20
18.	"	to SP	on: 1,3,5,6,10,11,13-15,17-20,23
19.	"	to OK	on: 3,15
20.	"	to OM	on: 14,15,20
21.	"	to YO	on: 11
22.	"	to 9A	on: 1,7,9,13,14
23.	"	to S5	on: 11,15
24.	"	to OE	on: 9,12,14-17,20
25.	"	to LX	on: 10
26.	"	to PA	on: 1,5-7,14,15,17,20
27.	"	to G	on: 9,14
28.	"	to GW	on: 15(2E)
29.	"	to GM	on: 14,15 (2E)
30.	"	to EI	on: 14 (2E)
31.	"	to UT	on: 5,23
32.	"	to LY	on: 9-11
33.	"	to YL	on: 20
34.	"	to SM	on: 11(1-2E)

35. Special events on:

8 (1845 9H to Z2)  
 9 (1530-1630 G+ON to ZD8/B)  
 14 (1845-1915 N.EU to PY1)  
 20 (1600 9H to ZS6+1645 I0 to ZS6+EH7 to 7Q +2030 PA to ZD8/B)  
 25 (1600 9H to ZS6+1730 9H to Z2+2100 EH7 to ZD8/B)  
 27 (1700 EH7 to 7Q+TR)  
 28 (1800 EH7 to TR+3Cvideo)  
 31 (1915 EH7 to TR)

36. DXCC entities heard/worked during AUG 2003 : 30 on 3 cont

37. DXCC entities heard/worked on 14<sup>th</sup> AUG 2003 : 13 on 1 cont.

73 COSTAS

## The Americas

### Auroral-Related Propagation

Aug 3 0306 VE8BY>VE6(559a)

Aug 6 00-0100 B8PUM>W0(EN36) 01-0200 N0UD>W0(DN70 41a) W9>W0 K0KP>W8(EN82)  
 W0(EN36)>W9 02-0300 W2(FN22)>W0(EN36) W9(EN52)>W0(EN36) VE3(EN92)>W0(EN36)  
 W2(EN41)>W0(EN36) W8(EN82)>W0(EN36) 03-0400 W7(DN26)>VE6(DO33 53a) 07-0800  
 W8>W9(EN44 59a) WB0RMO>W9(EN44 53a)

Aug 7 2 2-2300 VE4ARM>W9(51a) N8PUM>W9(51a)

Aug 17 20-2100 KL0RG(CO45)>W7(CN84 mode?) W8(EN28)>W0(EN36) W0(EN24)>W0(EN36)  
 W0(EN03)>W0(EN36) W0(EN24)>W0(EN36) VE4(DO90)>W0(WEN36) W8(EN56)>W0(EN36)  
 W9(EN41)>W0(EN36) W9(EN62)>W0(EN36) W9(EN61)>W0(EN36) W8(EN56)>W0(EN36)  
 W0(EN35)>W0(EN36) Au>W2



Aug 18 00-0100 W2>W3 W0(EN36)>W3(EM99) 0714 W1>W4(FM07) 0721 VE2RCS>W4(FM07) W1(FN35)>W4(FM07) 11-1200 W8>W1(FN43) W9(EN61)>W0(EN36) W8(EN90)>W0(EN36) VE3(EN93)>W0(EN36) W9(EN42)>W0(EN36) 13-1400 K0KP>W9(EN44 57a) VE4VHF>W9(EN44 53a) 20-2100 VE2(FN68)>W3 2248 OX3VHF>K2MUB(419) 23-2400>W1(FN31 54a 340) GM0EWX>K2MUB(419) W2(FN34)>VY2(FN86 mode?) VE2>W1(mode?) GM0EWX>K7BV/1(1a) W9>W4(EM74 59a)

Aug 19 00-0100 GM0EWX>K2MUB(55a) VE8BY>W1(549) VE3UBL>W0(EN36) W9(EN44)>W0(EN36) 01-0200 VE8BY>W1(FN42) VE2>W1(mode?) W9(EN51)>W0(EN36) W1(FN31)>W0(EN36) W8(EN91)>W0(EN36) W2(EN71)>W0(EN36 59) W9(EN71)>W0(EN36 59) K8UK>W0(EN36) VE3(EN93)>W0(EN36) VE3(FN03)>W0(EN36)

Aug 21 23-2400 W8(EN76)>W9(EN52) N0UD>W0(DN70 51a) W0(EN35)>W0(EN36)

Aug 22 00-0100 W9(EN52)>W0(EN36) W8(EN67)>W9(EN52) 0140 W8(EN67)>W0(EN36) W8(EN67)>W9(EN61 55a) W8(EN67)>W8(EN61 55a) 1949 W8>W0(EN67 519) 2236 W8(EN67)>W9(EN44 53a)

Aug 24 07-0800 KL7/KG0VL>VE6(559a) KL0RG(CO45)>VE6(DO33 55a) KL7NO(BP54)>VE6(DO33 55a)

Aug 25 0203 VE8BY>VE6(DO33 569a)

Aug 28 02-0300 VE4VHF>W9(EN44 52a) N8PUM>W9(EN44 53a)

Aug 29 14-1500 W9(EN44)>W0(EN36)

Aug 30 01-0200 VE4ARM>W9(EN44 51a): 02-0300 following spots were labelled Es W7(DN27)>W9(EN44 53AE) W0(EN36)>W0(EM17 599) VA7SIX>W0(DN70 599) W0(EM48)>W7(CN84 59) W7(CN87)>W0(DN70 mode?) W7(CN87)>W0(EM39 52) K8PLF>W0(DN70 559) W8(EN82)>W0(DN70 53) 0305 W8(EN84)>W0(DN70 mode?)

#### Other Modes

Multihop openings are almost always less frequent in August than in June or July. This year was no exception. Essentially there were two types of opening, multihop Es, where what little there was tended to favour the Iberian countries and the Mediterranean, and auroral(E) openings, which are more frequent in the UK and nearby countries. A mildly frustrating aspect is that openings like those to/from VE4 and VE8 are known to occur from time to time but almost invariably result in beacon reports but apparently not in two-way contacts even though PA1SIX works hard to signal possibilities.

#### North America<>Europe

W1 3(EA) 10(CT,EA) 17(F,I,9A) 18(G)	VE1 10(CT,EA) 19(EI)
W2 10(EA) 19(G)	VE4 18(EI,G,PA)
W3 10(EA)	VE8 9(EI,F,G)
W4 1(EA) 3(EA) 9(EA,ON)	VO1 18(EI,GM)
W9 19(EI)	

The path between South America and Europe showed the greatest decline, with reports from the Mediterranean on two days (8 days in 2002), consisting of PY into ISO on the 14<sup>th</sup> and LU into Italy on the 19<sup>th</sup>. LU and CX were worked from Iberia on the 19<sup>th</sup> (9 days in 2002) And an opening to PY from LY and SP compared with 10 days in 2002. LU was also worked from France on the 19<sup>th</sup>. ZD8VHF was heard in G on the 9<sup>th</sup>, G and PA on the 20<sup>th</sup> and EA on the 25<sup>th</sup>. (This was on a par with August 2002). A single contact between KP2 and S5 was reported from the Caribbean.

While there were numerous contacts between North American stations and the Caribbean the only reports of W/VE<>South America were on the 9<sup>th</sup>, when YV worked into W1 and W4 into HP2. There were no reports of trans-Pacific propagation or of signals from mainland Africa, other than CN8MC into W1 on the 3<sup>rd</sup> and W1 and W3 on the 10<sup>th</sup>.

As in Europe, Es propagation tailed off as the month progressed. While a couple of days produced a reasonably health crop of reports, notably the 9<sup>th</sup>, the last ten days were even more poverty-stricken than in Europe. As usual, the reasons are not entirely clear. As in Europe, one says 'Whatever happened to the Perseids?' Few reports specifically pointed to 'ms' as the mode. One factor may be that JT6M working appears not to have been adopted as widely in North America as in Europe, even though 'JT' was largely developed in the States.

The CY9A expedition, though widely sought, appears to have had only modest fortune with the propagation.

- Aug 1 1056 CY9A>W1 11-1200 CY9A>VE1,W2 12-1300 CY9A>VY2 13-1400 EH7KW>W4 14-1500 W4>VE3 CTtv>W4 W3HH,KD4HLG>VE3 W1>W4 W2>W2 CY9A,W3VD>W4 15-1600 W5VAS>W0 KQ4E>W1 W3VD>W4 CY9A>W5,VY2 16-1700 W5>W0 N3HH >VE3 17-1800 CY9A>VE3,W5 19-2000 YV4AB>ZF CY9A>W9,VE3 20-2100 YV4GMG>ZF 2142 V44KAI>HP2 2221 KP4>HP2
- Aug 2 00-0100 KP4>W4 W5RP,WB0RMO>W6 W6,W0>W5 01-0200 W6,W7>W5 02-0300 KG7BGR,W5,W6>W5 W6>W0,W7 ZF1DC>W0 03-0400 W7>W5 W6,W7>W0 W5SIX>W5 N0UD>VE6 04-0500 VE6>W6 W9>W1(ms) 05-0600 W7>VE6 13-1400 CY9A>W1 W0>W5 14-1500 W5,EAtv>W4 KP4>W5 1611 W5VAS>W0 1914-9 W6,W7>W5 20-2100 W7>W5,W1 2153 W7>W5
- Aug 3 1153 CT0SIX>W3 1352 W4>W5 14-1500 CN8MC>W1 W4>VE1 EH7KW>W4 15-1600 N8PUM>W0 16-1700 EH7KW>W1 17-1800 CU1CB,EH7KW>W1 2334 FP/K9OT>W3
- Aug 4 00-0100 W0MTK>W4 W0,W4,W9>W5 W5VAS>W0 W7,V31XU>TI4DJ 01-0200 W0>W0 W7>W9,W5,W0 K0ETC,W0MTK,W5SIX,K0ETC,W5VAS,VE6>W0 W3>W5 02-0300 W0,W2,W3>W0 W5>W3,W8 W1>W8 03-0400 W0,VE1SMU>W0 17-1800 W4>W3 K4AHO>VE3 20-2100 W6>W7 VE7SIX>W6
- Aug 5 2259 9Y4/DL4MEH>W4 23-2400 W6,W7>W5 W5>W4
- Aug 6 00-0100 W6,XE2>W5 W5VAS>W0 aurora W4>W7 W6,XE2>W4 W8>W6 01-0200 W0>W5 W4>W0(2xEs) W6>W4,W5 W4>W0(2xEs) W5>W7 2156 W5>W4 22-2300 W5>W4 2304 K4AHO>W5
- Aug 7 00-0100 W4,VE3>W4 02-0300 W0IJR,W3CCX>W6 03-0400 KA7BGR>W0 VE6>XE2 1004 W4>W4 1658 KA7BGR>W0 1725 W5>W0 2150 W4>W4
- Aug 8 02-0300 W6>W5 W0,W7,W6>W4 03-0400 W4,W6,W7>W4 XE2>W0 W7>W6 04-0500 XE2>W0 W5>W6,W7 W7>W6 1655 K4AHO>W1 1910 WR9L>W0 21-2200 VP9GE>W9,W4 EAtv>W4 W5VAS,KP2A>W2 22-2300 VP5JM>W4,W2,W9 W4,W3VD>W3 W4>W9 23-2400 W4>VE3,W3 W5HN,KQ4E,W0>W0 W4>VE3
- Aug 9 0025 W5VAS>W0 01-0200 W0>W4 K0ETC,W7>W0 VE1SMU>W2,W6 02-0300 VP9GE>W4 W5,VE7>W0 W1>W8 W7>W5 03-0400 VE2>W3,W4 W6,W7>VE6 N8PUM>W0 W1>W7 K4AHO,W4CHA,W8>W1 W0>VE6 04-0500 NL7ZW>VE6 VE6EMU>W0 W6>VE6 KD4HLG,KE4SIX>W1 W0>W9 0512 KL7NO>W7 12-1300 EAtv>W4 VP9/GM4COK>W4 13-1400 W4>W3 W3HH,V44KAI>W4 14-1500 K0UO>W4 W1>W2(ms) PJ4/PA2VST,KP4>W1 VP5JM>W2 15-1600 VP5JM>W3,W4,W8 KP4>W4 KE4SIX>W0 16-1700 C6AMK>W3,W4 VP5JM>W0 V44KAI>W4 PJ4/PA2VST>W1 17-1800 C6AMK>W1,W2,W3,W4 W8>W5 PJ4/PA2VST>W3 KB8GC>W5 W4>W1 K4AHO>W5 18-1900 KP4>W5 C6AMK>W2 ZF2FF,TI2ALF,TI5BX,YV4DYJ,TI2CDA,TI2RPT>W1 TI2CDA>W2 VP9GE>W2,W4 VP9/GM4COK>W3 W0>W8 W4CHA>HP2 19-2000 VP9GE>W0 TI5BX>W1 TI4DJ>W1,W4

TI2CDA>W1,W2,W4 TI2ALF>W1,W2 KD4ESV>HP2 YV4DYZ>W2 PJ2BVU>W3,W2  
K4AHO,TI2NA>W1 20-2100 K4MF,XE1KK>HP2 TI2CDA>W3 VP9GE>VE3 21-2200 W4>W0  
VP9GE>W1,W3,W9,W4 K2ZD>W4 TI2CDA>W3 22-2300 VP9GE>W2,W0,W3 48.3(CE)>W4  
K4RO,PJ2BVU>TI4DJ 23-2400 VP9GE>W1,W3

Aug 10 00-0100 W4>W2 VP9GE,W3,WR9L>W3 01-0200 W9,W8>W2 VP9GE>W8,W9,W3 W3>W0  
VE1>W4 W1>W5 02-0300 W5VAS>W0 W4,W7>W5 03-0400 W1>W8 W2>W4 04-0500 N0LL>W7  
05-0600 K0UO,N0LL,WB0RMO>VE3 W5>W6 VE1SMU>W3 1158 EA7KW>W1 12-1300  
EA7KW>W3,W1 W3HH>VY2 W1>W4 VP9GE>W1 VY2>W8 13-1400 VP9GE>W1 VP9KK>W2 14-  
1500 N0LL>W2 N8PUM,K0KP,KD4HLG,KD4NMI,W4CLM>W1 W5>W0 VE2>W4  
VE1SMU,WR9L>W0 15-1600 W7>W8 W1>W0 W1>W1,W4 W0,W1,W8>W0 W5>W5 EH7KW>W2  
EUtv>W0(skew) 16-1700 W6,W7>W5 W9>W0 VE4VHF>W5 17-1800 W0,WA7X>W0 20-2100  
EH7KW>W1,W3 21-2200 CT0SIX>W1 W0>W3,W0 CN8HB,CT1APE,VE1,W1>W1 CN8MC>W3  
22-2300 EA9AI,CN8MC,CT0SIX,CT1FOH,CT1APE>W1 VO1ZA>W3 23-2400 KE4SIX>W5  
KD4HLG,K8PLF,VE6,WR9L>W0 W6>VE6 NP3>W4

Aug 11 00-0100 VE4ARM>W0 W5>W9 W0>W5 VE2>W3 VE4VHF>W5 W1>W4 VY2>W4,VE3  
W5VAS>W0 N0UD>W7 VE2,VE9>W2 KA7BGR,W5SIX,VE4>W0 W6>W8 VE9>W4 VE6>W5  
K0EC>W4 01-0200 VE8BY>W0,W3 VA7SIX,XE1>W0 VY2>W2,W8 W7,XE1>W5  
VE1SMU,VE9,VE2>W3 W6>W3,W8,W9,W0,W1 W1>W8 02-0300 W1>W6 VE9,VE2>W9 VE1>W8  
W6,VE8BY,W5>W0 VE9>W4 VE6>W2,W9,W5 W0>W7 W7>VE3 VE2>W9 W7,W0,VE5,W8>W8  
VE3,W1>W3 K4AHO>W7 KL7/KG0VL>VE6 03-0400 VE6,W7,W6>W0 VE7,W7,W2,VE2>W8  
VE7>VE3,W9 W6>W9 K0EC>W3 VE5>VE3 W0>VE6 WA1OJB>W4 04-0500 VE5>W7,VE3  
W7>VE3,W0 W6,W7>W0 VE7>W8 W7>W5,W9 15-1600 W7>W5 47.9(CE)>W7 2148 W4>W4

Aug 12 0312 WR9L>W0 15-1600 N0LL>W7 W3>W3(sc) N8PUM>W0 1819 W3>W3

Aug 13 00-0100 W5VAS>W0 W4,W8>W5 W3VD,W5>W4 W0>W3,W4,W2 01-0200 W0>W8,W5 W9>W5  
02-0300 W0>W3,W4 W2,W3>W3 N8PUM>W0 0349 W4>W3 04-0500 W9>W9 W0,W4>W3  
W3>W9 07-0800 WR9L,K0UO(ms)>W3 11-1200 W5,W8,W4>W3 13-1400 W9,W4>W3 14-1500  
W7>W7 W4>W3 W3HH>VY2 15-1600 W7>W7 KE4SIX>W4 W4>W5

Aug 14 1359 W4>W3 1424 W4>W3 1504 W3>W3

Aug 15 0155-9 VE3,W9FZ,N8PUM>W0 1525 K4AHO>W4 1939 VP9DUB>W8 22-2300 W0>W4 23-2400  
W5VAS>W1 VP9/GM4COK>W3

Aug 16 00-0100 VP9/GM4COK>W3,W5 01-0200 VP9/GM4COK>W5 W4>W5 W9>W7 W4,W5>W0 02-  
0300 W4CHA>W3 W1>W5 03-0400 W5>W3,W0 W5,W8,W9>W4 W1,W3,W9,W2>W5 04-0500  
W5HN>W6 W2,W9,W5>W5 05-0600 W5SIX>W6 W9>W0 13-1400 W4>W4 14-1500 VP9UB>W4  
15-1600 W2>W1 W1>W4 KQ4E,WR9L>W0 16-1700 W4CHA>W1 W4>W3 W0>W0,W3 17-1800  
W4>W0 W5>W9 FY1>YV1 18-1900 W3>W4(ms) W4CHA>W0(2xEs) W0>W6 19-2000  
K6FV,K0ETC>W0 W2>W2 W4>W1 VE3>W4 20-2100 W5>W1 W6>W0 21-2200 W8>W2  
K0EC,WA7X>W0 W1>W4 22-2300 W6>W0 W5>W7 W5SIX>W9

Aug 17 00-0100 KB8GC>W0 01-0200 VP9DUB>W3 02-0300 VP9GE>W1,W8 N8PUM>W0 03-0400  
W1>W4 03-0400 W1,W8>W0 W0>W5 1151 W5>W9 12-1300 W5>W5,W3 K0KP,W9FZ>W4  
W4>W1 13-1400 W4>W1 14-1500 W6,W0>W4 VP9DUB>W2 15-1600 W1,W2>W1 W7,W5>W6  
W5>W9 W4>W5 W0>W0 16-1700 W7>W6,VE6 W4>W7 W0>W0 W1>W4 KD4HLG,W5VAS>W1  
17-1800 VE6>W6 W7>W7,VE6 W6>VE6 W1>W1 18-1900 W4,WA7X>W0 19-2000 W7>W5 20-  
2100 VA7SIX>W0 aurora

Aug 18 aurora 0340 W6>W5 aurora 1834 W4>W3 1904 W4>W3 aurora

Aug 19 00-0100 LU9EHF>PY8 PY8>PP5 01-0200 FJ5DX>PP5,PY5 ZP5AA>PY1 1120 EA4v>W2 13-1400 VP9GE>W1 VE3,W3HH,VE2RCS>W3 14-1500 VE3UBL>W4 W3>W3,W9 VP9DUB>VE1 W0,W9>W2 15-1600 W2>W9 15-1600 W9>W2 W3>W9 W6>W4 W8>W8 16-1700 W9>W8,W4 W0,W9,W3>W3 W3>W6 W4,W6>W0 K2ZD>W4 W7>W9 17-1800 W0>W3 W5>W8 18-1900 K0KP,VE3UBL>W4 W6>W0 19-2000 K0UO>W2 2347 W4>W0

Aug 20 01-0200 W6,W5SIX>W5 WR9L>W8 02-0300 W5,W0,W3,W4>W6 03-0400 W7>W7 1243 WR9L>VE3 2236 WR9L>W8

Aug 21 nil aurora

Aug 22 0129 W3CCX>W2 1214 DL4v>W2 1949 W8>W0

Aug 23 1934 W8>W3 22-2300 W5RP>W5 W8>W3

Aug 24 nil

Aug 25 0038 W4CHA>W0 0206 W0>W4

Aug 26 nil

Aug 27 nil

Aug 28 nil

Aug 29 0043 W7>W5 0219 W7>W5

Aug 30 nil but logs filed as 'auroral-related' may have been normal Es

Aug 31 1543 W4>W9 16-1700 W4>W9 2049 49.2(CE)>W4

## Asia/Pacific

### Japan

Propagation between VK and JA was reported on 23 days, just one day fewer than in 2002. However, VK4 was down from 24 days to 9 (2,9,13,16-18,20,21,28), while VK6 was up from 14 to 19 (6,8-11,13-16,18,20,22-24,26,27,29-31) and VK8 was down from 18 days to 10 (9,10,13,15-18,20,22,31). There were no reports of the other call areas or of ZL and there were no reports of contacts outside Asia-Oceania. A notable feature of the VK reports, shown in detail below, is how few relate to two-way contacts rather than beacons. An e-mail from one of the VK operators remarks how few VKs and ZLs are regularly active on 50MHz, though it notes that there is also under-reporting because some 'senior' VKs are not on the Internet. Certainly, we do not have a single report from anywhere in VK and ZL this month. A good thing some JA and HL operators do report!

## 6m Results in JA During August

DATE	TIME(UTC)	STATIONS
2	0825-0920	VK4RTL/b
5	0350-0600	BG9BA, DU1EV/B, DS1PLF,5ISO
	1025-1110	C21SIX/b, H44V
	1200-1250	6K2DHP,DS5JQK
6	0310-0400	DU1EV/B
	0950-1030	VK6RSX/b
7	1054-1100	BV4VJ (JA3-6)
8	0123-0200	BG9BA, DS5ISO
	0845-0900	FK8SIX/b (JA8)
	1010-1030	VK6RSX/b
9	0600-1230	C21SIX/b, VK4JH,4FNQ,4RTL/b,6RSX/b,8RAS/b
10	1140-1230	VK6RSX/b,8MS
11	0040-0330	BG9BA, DS1CCU,5ISO,5JQK, JD1YAB (JD1/O)
	1100-1200	H40V, JD1YAB, KG6DX, VK6JQ

- 12 0800-1010 BV2NT,4VJ,8BC, DU1EV/B,DX1F, DS5JQK
- 13 0019-0230 BG9BA, DS1CCU,5ISO  
0640-1030 C21SIX/b, FK8SIX/b, VK4,6RSX/b,8RAS/b  
0748-0800 UA0SC (JA8)  
1235-1250 C21SIX/b (JA8)
- 14 0100-1330 BG9BA, DU1EV/B, DX1F, 6K2DJB,DS1CCU,5JQK,HL4CEL  
1000-1030 VK6JQ,6RSX/b  
1219-1220 4S7JAG (JA7)  
1500-1530 HL
- 15 0448-0500 UA0SC (JA4)  
0725-1430 6L0NJ/4,DS5JQK, JD1YAB, VK6RSX/b,8RAS/b
- 16 0008-0640 BG9BA, BN0F,BV2SR, DU1EV/B, 6L0NJ/4, JD1YAB, KG6DX  
0209-0300 VK4CXQ  
0650-1040 VK6JQ,6RSX/b  
2325-0730 BN0F, 6L0NJ/4,DS5JQK, JD1YAB, VR2XZK
- 17 1005-1245 C21SIX/b (JA8), VK4RTL/b,8MS
- 18 0805-1230 9M2TO/B, FK8SIX/b, VK4RTL/b,6RSX/b,8RAS/b
- 20 0340-1030 9M2TO/B, FK8SIX/b, VK4,6JJ,6RPH/b,6RSX/b,8RAS/b
- 21 0720-1030 9M2TO/B, DU1EV/B,N6HPX/DU1, VK4,6RSX/b,8RAS/b
- 23 0130-0200 JD1YAB  
0930-1000 VK6RSX/b
- 24 0825-1000 9M2TO/B, FK8SIX/b, DS1CCU, VK6RSX/b
- 26 0920-1030 BV2FI, VK6RSX/b
- 27 0939-1000 BV2FI, VK6RSX/b 2148-2200 T88RN (JR6)
- 28 0929-1110 C21SIX/b, VK4CXQ,4RTL/b (JA8)
- 29 1015-1030 VK6RSX/b (JA3-6)
- 30 0825-1030 VK6RSX/b (JA2-6)
- 31 0900-1220 C21SIX/b (JA8), VK6RSX/b,8MS, YB9AY

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### Elsewhere

- Aug 2 0044 JG1ZGW>HL1 03-0400 JH8ZND>HL1 0416 BG9BA>HL1
- Aug 5 0353 JA6YBR>HL1
- Aug 6 0214 JA2IGY>HL1 0746 JE7YNQ,JA1ZYK>HL1
- Aug 7 0109 JA7>HL1
- Aug 8 0017 JA1ZYK,JE7YNQ>HL1
- Aug 9 0752 JH8ZND>HL1 09-1000 HL2,JA8,VK6RSX>HL1
- Aug 13 0024 JG1ZGW>HL1 0745 JE7YNQ>UA0SC
- Aug 14 0124 JA1ZYK>HL1 10-1100 VK6JQ,BG9BA,DU1EV>HL1
- Aug 15 0242 JE7YNQ>HL1 1136 JG1ZGW>HL1
- Aug 16 0720 BG9BA>HL1
- Aug 17 0154 BN0F>HL2
- Aug 20 0843 HL9>HL1 0947 VK4FNQ>HL1
- Aug 21 0030 JA2>HL1
- Aug 22 0930-41 VK6RSX,VK8RAS,VK4RTL>HL1
- Aug 30 0044 UAtv>UA0SC(59 120)

## Beacon News and 28 MHz Worldwide

Compilation and Commentary by G3USF

### Beacon News

28200 VE8AT QRT (various)  
28215 GB3RAL returned to service (various October)  
28227 VE9AT White Head Island new beacon running 100mw (VE9AT, October)  
28268.4 VK8VF reactivated  
28282 LA6TEN at Kirkenese (KP49XQ) running 10 watts to omni is now operational  
50018 XE2UZL QRT, probably for good - solar panels and batteries stolen for the third time. (N6XQ)  
50070 VQ9X call soon changing to VQ9SIX (VQ9LA)  
50080 WD8OST runs 10 watts to 6-el at 45 feet from Goetville (MI) EN76 (WD8OST)

### 28 MHz Worldwide

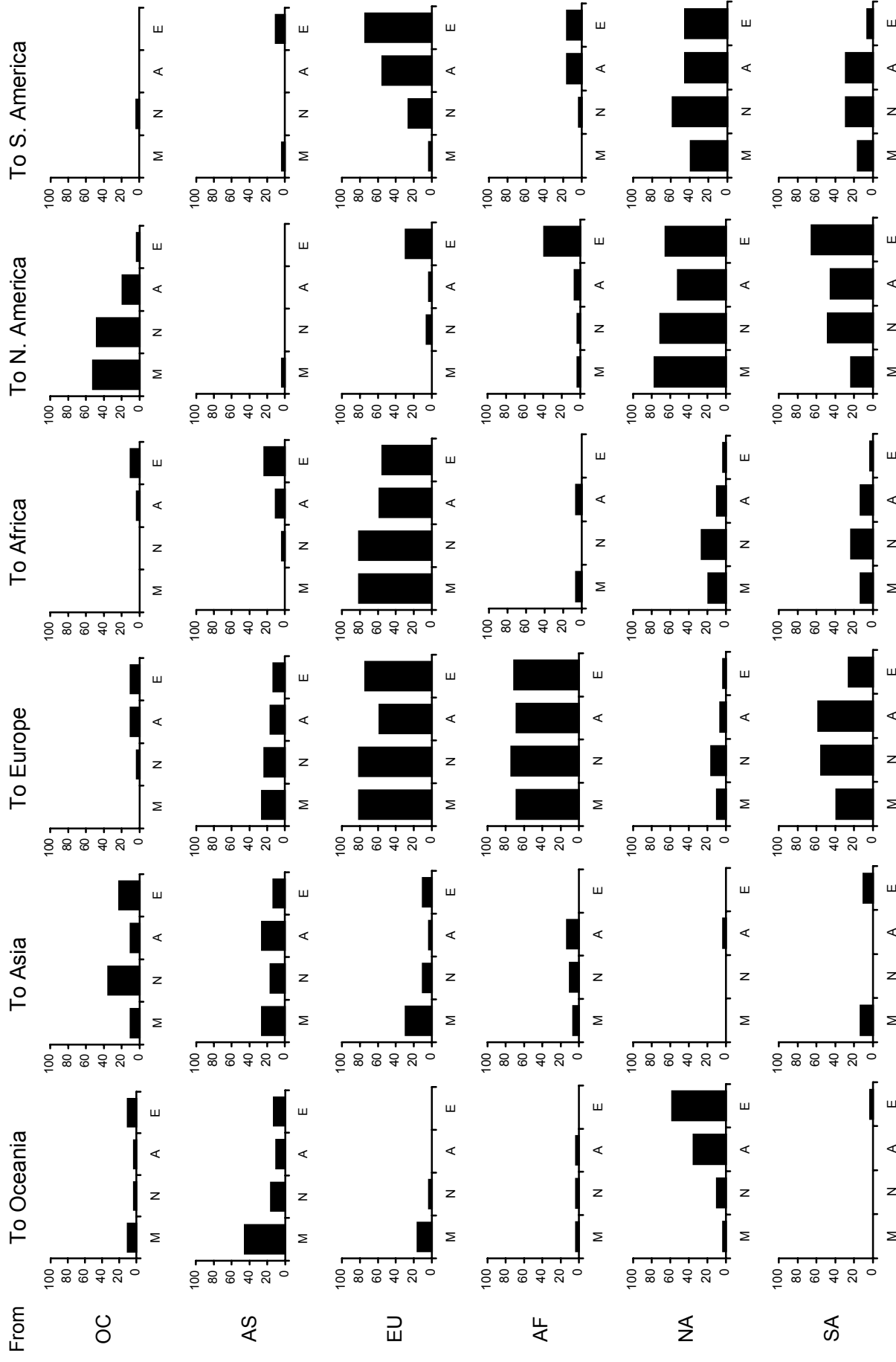
What to say about Ten in August, except that, as was to be expected, it reflected the normal seasonal factors, declining levels of solar flux and the baleful influence of the relatively high levels of geomagnetic activity? Most paths were down on the corresponding period last year. Europe<->South America, although one of the stronger paths, failed to exceed 80 per cent reliability for any period of the day, though (at the European end) it did so during the noon, afternoon and evening periods in 2002. North<->South America showed an even greater drop. South America, which worked into Asia (essentially Japan), during their evening on 16 days in 2002 did so on only 3 days this year. There was only one report of North America<->Asia. Contacts between the United States and Canada from northern Europe were virtually non-existent, though there were occasional openings from southern Europe, mainly in the evening, the remainder being mostly to the Caribbean rather than countries further north. Propagation between Europe and Asia, also over predominantly east-west paths, was particularly hard hit: F2 and Es combined produced reports on only 13 days. This was in keeping with G0AEV's data showing the reliability of 4X6TU into the UK falling from 93% to 29%.

Some paths held up better than others - mornings from Asia to Oceania being a modest example. And if Europe<->Africa was down on 2002, there were still openings between the two continents, whether by F2 or Es every day of the month. Europe<->South America was reported on 24 days and North<->South America on 28 days, with North America into Oceania on a creditable 20 days and Asia having openings to Oceania on 18 days. So it might have been a great deal worse and doubtless will be.

Propagation within Europe, essentially by Es, was pretty well in line with August 2002, but within North America it was somewhat below the levels of the previous year. In Europe, as at 50MHz, Es was markedly down during the last week or so of the month. However, in the lower latitudes of North America, the decline was not so marked.

Contacts worthy of note were unsurprisingly scarce. G3KHZ worked VP5/IK2SEC and TZ6RD at the late hour of 2319 on the 13<sup>th</sup>, WA1EHK reported OK2PAY at 2140 on the 16<sup>th</sup>, and the OK in turn worked UR5UDX the same evening at 2212. There were several reports of auroral E from northern Europe between 1952 and 2155 during the geomagnetic storm on the 18<sup>th</sup>, but no reports of 'tone A' propagation.

# 28 MHz Worldwide - August 2003



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