

Radio Weather Summary for June 2009

The data tell a by now familiar story. The Sun was unspotted on 17 days and the highest sunspot number reported was a very modest 23. (Discussion relates to provisional data, which are subject to revision.) In solar flux terms too the index was highest on the 1st and 3rd at 73, though for the most of the month it hovered between 67 and 69. The average over the month was 68.6. If one is looking for signs of encouragement, then it lies in the improvement in the 90-day average from 69 to 70(just), mainly due to shedding weaker figures in late March. Apart from the 1st the X-ray flux remained below the minimum reporting threshold throughout the month.. Particle densities were generally low, but briefly increased to 32cm³ on the 21st, with 20/cm³ reported on the 24th and 28 on the 28th. If we take 400km/sec to be an 'average' sort of figure for solar wind speeds, speeds reported by Stereo and ACE this month were mostly below average. There were certainly days with relatively high-speed streams, notably the 24th, when the speed reached 554km/sec. By contrast, however, on the 4th, 5th, 12th, 13th, 15th and 20th a minimum of 270km/sec was reported.

	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
SSN	23	19	17	17	13	0	0	12	12	0	0	12	0	0	0	0	11	0	0	0	12	24	12	14	0	0	0	0	0	0
SFU	73	72	73	71	70	69	69	69	69	69	69	69	68	68	67	68	68	68	67	67	67	68	68	67	68	67	67	67	69	68
X-Ray	A1 .3	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0	A0

It is sometimes forgotten that the magnetic cycle tends to lag behind the sunspot cycle, but we certainly experienced bottom-of-cycle values for much of the month. The Ap index was in single figures on 27 days, with the 24th the most disturbed day at Ap19, with 2 the low point on the 12th. Over the month the average daily Ap was 5.22. The 3-hour K values reported by the three UK geomagnetic observatories displayed a similar pattern, with the 24th also the most disturbed day, and a K5 at all three, not seen for some months, for 18-2100UTC. That disturbance brought visual aurora at high latitudes but no amateur radio contacts were reported. The only radio-auroral reports we do have for the month were for the 5th at 50MHz, though the UK observatories reported 3-hour Ks of only 1. However, aurora is known to occur frequently, though usually briefly, at high geomagnetic latitudes even when Kp is low. The Interplanetary magnetic field was also mostly quiet, with typical daily variations no greater than +/- 3 nanoTeslas – but minus 20 and plus 17 nanoTeslas were noted during the disturbance. That relatively high minus value makes it a little surprising that the aurora did not extend further south – unless, of course, it did and everyone missed it.

	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
LER	na																													
ESK	2	4	10	8	11	6	11	3	4	8	6	1	6	12	3	7	2	7	2	10	13	3	9	23	15	3	10	17	14	5
IHAD	5	4	9	11	9	6	12	5	4	9	6	1	8	12	8	7	6	8	5	10	15	7	9	23	14	7	10	16	15	8
Ap	3	2	4	6	6	5	6	4	3	5	3	2	4	6	4	3	3	4	4	6	7	3	4	19	7	3	3	11	10	5

Too little data; too much data. The main reason this Report emerged so excessively belatedly is the huge volume of 50MHz spots received. (28 MHz also generated a very large number but this was manageable.) Digesting these tens of thousands of reports inescapably took time, even when they are presented in a highly compressed form and placed in a separate data file.

DX Summit imposes a maximum of 10000 spots on search downloads. So there are regrettable gaps in the coverage during periods when that limit was exceeded, which could only be partly filled from other sources. UK contacts are probably less affected than those for continental Europe and the Americas. Asia is thought to be less affected and Oceania not at all. All comments must be read with the gaps in mind, and also with a reminder that, as always, one can only present and analyze material that has been reported.

50MHz

Propagation to and from Britain

Aurora: Given the generally low level of geomagnetic activity it is scarcely surprising that the only UK reports confidently linked to aurora were:

June 5 0007 LA7SIX>MM0AMW GB3LER>MM0AMW(53a IO75)

Tropo: Aided by contest activity, lots of apparently-tropo contacts were reported, principally with ON, PA and F, and a couple with LX. . However, it seems that few, if any, were at noteworthy range. Maybe – and once we get to QRBs of 500km or so it becomes hard to distinguish. The est apparently tropo contact was GW6YB(IO81)>DH0DGO(JO41) at 0500 on the 21st, but can we be sure that this was indeed tropo?

June 24 1700 G4PTJ(IO91)>PA0M(JO21) MU0FAL-ON6AB(5)

Sporadic-E: The overwhelming majority of UK 50MHz contacts in June were attributable to sporadic-E (or, in a few cases, Es-scatter). The table below shows, for each 3-hour period between 0300 and 2400 UTC, whether sporadic-E to/from continental Europe plus the western edge of Asia (JY, 4X, OD) and the northern fringe of Africa (CN, EA8, EA9, 7X, CT2 and CT3) was reported in the UK (+). Contacts outside Europe, apart from the areas just indicated, are not included. (Periods for which there was too little data to judge are flagged by a ‘?’.) It seems likely that on many days the period before 0600 was too early for MUFs to reach 50MHz (though, on the better days there could be good propagation that early. It was probably also a little early for many operators to be active, though they may well have missed some excellent chances as a result. It does not, of course, suggest that all parts of the UK were involved on every occasion.

The table demonstrates without need for further commentary that Es was a consistent daily occurrence for the UK throughout the month, and was particularly solid in the periods we would expect – before noon and early-to-mid evening.

	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
03-06		?	?		+		+				+	+			?	?	?			+		+						?	?	
06-09	+	+	?		+		+	+			+	+	+	?	?	+	+		+	+	+	+	+	+	+			?	?	+
09-12		?	+		+	+	+	+	+	+	+	+	+	+	?	+	+	+	+	+	+	+	+	+	+	+	?	?	+	+
12-15	+	?	+	+	+	+	+	+	+	+	+	+	?	+	?	+		+	+	+	+	+		+	+	+	+	?	+	+
15-18	+	?		+	+	+	+	+	+	+	+	+	?	+	?	+	+	+	+		+	+	+	+	+	+	?	+	+	+
18-21	+	?	+	+	+	+	+	+	+	+	+	+	+	?	?	+	+	+	+	+	+	+	+	+			+	+	+	+
21-24		+	+	+	+	+	+	+		+	+	+	+	+	?	?	+	+	+							+	?	?		+

Known 50MHz Propagation Between the UK and Europe June 2009

The tables below show known openings by country or call area, as appropriate. In a few cases results are merged (eg I+HV, CN+EA9 and the various components of the former Yugoslavia) for obvious reasons. Virtually the entire continent, apart from Russia, was workable at one time or other, though some countries figure only modestly, whether because they have few active 6m operators (eg JW, OH0,LX), or because they are so close to the UK that, for most of us, they are workable only when MUFs are particularly high – EI, ON and PA being obvious cases in point for parts of the UK. These countries and France are included only for occasions when the fuller context of the event suggests Es propagation.

	CN+7X+EA9	CT
UTC	1 3 6 7 9 10 11 12 16 18 19 20 21 22 23 24 30	1 2 3 4 5 6 7 9 10 11 12 16 18 19 20 21
03-06		
06-09	5 + +	9 5 2 + +
09-12	9 9 + + +	9 5 7 + 7
12-15	+ + + 3	8 9 9 + 9 5 + 3
15-18	+ 7 7	+ 7 3 9 + 9 7 9 +
18-21	9 + + + 4 +	8 9 7 4 7
21-24	+ 4	+ + 9 + 9 9

	CT cont.	CT2	CT3
UTC	22 24 26 29	1 8 9 12 17 20 21 22	1 4 5 6 7 9 10 12 18 19 20 21 22 24 25 26
03-06			
06-09	6		7 9 + 9 +
09-12		3 + +	+4 + + + + 9 5
12-15	5 +	8 +	7+ 7 + + + 9
15-18		+	+ +7 + 9 + +
18-21	7 9	9 8	+7 9 5 + + 9
21-24			4

	DL	EA1-5,7 + ZB
UTC	1 2 5 6 7 10 11 12 13 14 16 19 20 21 22 24 27 29 30	1 2 3 4 5 6 7 8 9 10 11 12 16 17
03-06	9 2	
06-09	+ 9 5 9 + 9	+ 9 9 9 +
09-12	9 9 + + + 9 9 9 8	+ 9 9 7 + 9 9 +
12-15	+ + 5 9 9	8 9 9 9 + 9 +
15-18	9 9 7 9 9 + 9 9 +	+ 7 3 9 7 + + 9 +
18-21	9 + 9 9 + 9 5 + + + 9	7 9 9 7 9 8 9 + + +
21-24		9 7 + 7 +

	EA	EA6
UTC	18 19 20 21 22 23 24 25 26 29 30	2 5 6 7 8 10 11 12 14 16 17 19 20 21 22 24 25 26 29
03-06		
06-09	3 9 9 4	+ 9 + + + + +
09-12	7 9 9 5 9 + 9	+ 9 + + + +
12-15	9 5 + 9 9 +	5 + + 6 + 9 + 9 + + +
15-18	+ 9 + +	9 + + 9 + + + + + + 9
18-21	8 9 9 3	+ + 9 + 1 + 5
21-24		8 +

It comes as no surprise that EA was the most workable country; lying south of the UK and across a substantial span of the optimum 1Es range, it was worked on at least 25 days. CT (20 days) and EA6 (19) also scored high for doubtless similar reasons. Other countries that were workable on 15 or more days were Morocco (with EA9 and 7X), Madeira, Balearic Islands, Germany, Hungary, Italy, Finland and the countries of the former Yugoslavia.

	EA8	EI	ER	ES	F
UTC	1 3 4 5 9 11 12 17 19 25 26 29	3 5 21	7 18	5 21 22	5 6 11 12 13 14 20 21 22 24
03-06					
06-09	9				5 5 + 9 6
09-12	9 9 9 3 +	8 5		9	9 9 9 9 9 + 8
12-15	+ 9 + 9	+ 8	+		9 + + 9 + 9
15-18	+ + 9 8	+		+	9 + + 5 9 +
18-21	3 9 9 9 7		+	9	+ 9
21-24	5 + +				+

	F cont	HA	HB+HB0
UTC	25 26 27 29	1 5 6 7 8 10 11 12 19 20 21 22 24 25 29 30	1 5 10 11 18 19 20 21 22 24
03-06		5 5 9	9
06-09		9 3 2 + + 1 7	9 + +
09-12		6 9 3 + + + 9	9 5 + 9 9 9
12-15	+ +	1 7	+ 9 9 +
15-18	+ 7	+ 9 + 9 5 + 9 9 7 9	9 + + + 9
18-21	9	9 + 9 + + 9 + 1 7	+ 7 3 9 +
21-24		5	

	I0-I8 + T7	I9
UTC	1 3 4 5 6 7 8 10 11 12 17 19 20 21 22 24 25 29 30	3 4 5 6 7 8 10 11 13 17 19 21 23 29
03-06	+ +	2 9
06-09	9 9 + 7 1 9 9	9 + + 7
09-12	9 + 9 9 2 + 7 9 9 +	+ 9 + 9 5 9
12-15	9 + 5 9 + 9 + 7 9 9 9	5 + 9 9 9
15-18	9 + + 2 2 9 5 9 9 9 5	+ + +
18-21	+ 9 9 9 + + 9 +	+ 5 +
21-24	8 9 9 + 9 9	7 9 9 9

	IS0	JY	LA	LX
UTC	1 6 7 8 9 10 11 12 13 17 21 22 26	6 9 9	4 6 11 20 21 22	5 11 12 19 21 22 24
03-06				
06-09	+ +		9	
09-12	9 + + +		9 + + + +	1 5 + 5
12-15	+ + + + +		9	+ 9 9
15-18	+ + + + 9	+ 8 8		1 +
18-21	9 + +			
21-24	+		9	

+ LA also 00 UTC on 18th

With complete data we could possibly add F, I9, IS0, SM, SP, SV and UR. The last two require a double hop for operators in some parts of Britain – as would TA, OD, JY, 4X, OD, YO. Countries featuring less than one might expect were LA, OE, OK and OM, all of which have a respectable number of 6m operators. Why this was so is unclear. There were at least six days when Es contacts could be made within the UK, usually GM or GI to southern G or GU. There could possibly have been more if the relevant locators had been available.

	LY	LZ	OD	OE
UTC	6 11 20 21	3 4 5 7 9 17 19 20 21 23 24 26 29 30	8 23 24 30	1 5 6 10 11 12 13 19
03-06	9 9			5
06-09	7	9 +	7	9 9
09-12	+ +	+ + +	9 +	7
12-15		+ + +	+	9
15-18		+ + + +	2 +	+ + 5 9 + 9
18-21		9 + 9 9 +		9 + + +
21-24				3

	OE cont	OH	OK
UTC	20 21 24 29 30	2 4 5 8 11 12 13 14 18 19 20 21 22 23 30	5 6 10 11 12 19 20 21
03-06		9	9
06-09	+	+ 9 9 5 +	9 + +
09-12	+ 6	9 9 + 2 9 8 9 7	+ 5 +
12-15	7	5	+
15-18	9	9 9 3	+ +
18-21	9 5	+ 5 + 9 +	7 + 9
21-24		+ +	

	OK cont.	OM	ON	OY
UTC	24 27 29 30	4 5 7 18 20 21 24 29 30	5 6 7 11 21 23 24	5 6 11 12 19 20 21 22
03-06				
06-09		9 9 +	5 +	+ 9
09-12	+	+ 9	+ 9	+
12-15	+	5 +	3 + + +	3 + + 9
15-18	+ +	+ 7 +	+	+ +
18-21	+ + 7	2 9	5 + +	+
21-24				7

	OZ	PA	SM
UTC	5 6 11 20 21 22 24 30	5 6 10 11 23 24	4 5 6 11 13 14 18 20 21 22 23 24 26
03-06			+
06-09	+ +		+ + + +
09-12	9 + + 5	9 9	+ + 5 + 9
12-15	+ 9	+	5 3
15-18	9 +	+	9 9 +
18-21	9 + +	+ + 9 +	7 9 + + +
21-24			2 7

	SP	SV	SV5
UTC	1 5 6 8 10 11 18 19 20 21 22 24 29 30	1 3 5 7 8 9 10 11 13 19 24 29 30	13 14 17 24
03-06	9		
06-09	9 9 9	9 9	
09-12	9 + + +	+ 5	
12-15	+ 9 9 +	9 1 9	+
15-18	+ 9 9 9 8 9 7 3	+ +	
18-21	9 + 9 9 + 9	7 7 3 9 9 1	+ + 5
21-24	9 9	9	

	SV9	TA	TF	UR
UTC	3 11 17 19 24 29	11 20 21 22 24 29 30	5 11 20 22	1 5 6 10 11 14 19 20 21 23 24
03-06				+ +
06-09	9 9	+ 9	5	++ + 9 9 9
09-12	9 9	9 +	6 +	+ 8
12-15	9 9			7 +
15-18	+ 9 9	+		9 9 + 9 + 5
18-21	9	7 5 9	9	9 9 9 9
21-24			7	

	UR	YL	YO	YU S5 Z3 4O 4N 9A E7
UTC	29 30	5 6 11 18 29 30	5 11 13 17 19 20 21 23 24 29 30	1 3 4 5 6 7 8 9 10 11 12 13
03-06		+	9 5	9
06-09		9 + +	9 9 + + + + 9	9 7
09-12			+ +	9 6 + + 9
12-15				+ + 9 +
15-18	+ +	9 +	9 +	9 9 + 9 9 9
18-21	+ 9	+ 9 + +	+ 9 9 +	9 9 + + 9 8 +
21-24				9 3

	YU cont	4X	5B
UTC	14 17 19 20 21 22 23 24 25 29 30	3 5 6 9 10 11 24 29 30	4 6 10 11 24 30
03-06	9		
06-09	+ 9 +	5 8	+ 9 5 9
09-12	+ + + + + 5 7	9 5	+
12-15	9 + 9 + 9	5	+
15-18	+ 1 9 9 9	5 + 6 +	+
18-21	9 + + 9 + 9	+ 5	9
21-24	+		

	9H	G-G
UTC	4 6 7 8 13 21 24	6 8 9 11 13 19
03-06	+	
06-09		+
09-12	+ 5	++ +
12-15	+ +	9
15-18	6	+
18-21	9 6 9	+
21-24		

UK<>Asia

	A7	EY	JA	UK	4J
	19	6	11 20 21	1	29
03-06					
06-09			7 5 +	+	
09-12					
12-15					
15-18	5	+			9
18-21					
21-24					

One might not guess from and initial glance at the table above what an excellent month this was for contacts between Europe and Asia. The modest UK display mostly reflects the fact that we lie on the

western periphery of our continent, at best two hops from the nearest part of Asia, with Japan at great-circle ranges approaching 9000km, which translates into five hops if Es is the relevant medium. Much of the intervening ground is extremely thinly populated with 6m ops. A huge amount of Es must inescapably be wasted.

Apart from the continent's northern fringe most workable areas of Africa lie at ranges of more than 4000km, even for operators in southern Britain and the results for the most part reflect the availability of a single individual at the southern end as well as the necessary ionisation. One or two countries that were worked in earlier years, notably 3C and TR, did not feature in this year's reports – though TR was reported from elsewhere in Europe. On the other hand, TN and 6W were more prominent this season. Overall, there are known to have been contacts between Europe and Central or West Africa on at least 23 days but UK reports relate to only 13 of them. By way of doubtless irrelevant comparison SV1DH, who misses very little and who we always think of as being particularly favoured in his location, worked the same areas on only seven days. Reported contacts were mainly reported during the afternoon and early evening. The presumed mode for all these signals was multihop Es. None of the African stations was located in the tep zone.

UK<>Central/West Africa

	D4	TN	TZ	5N	6W
	2 9 10 11 12	1 14 30	26	7	10 13 14 19
03-06					
06-09				+	
09-12				+	
12-15		+		+	
15-18	9 + 7	+ + 5	6		7 + +
18-21	7 + +				9
21-24					

UK<>Caribbean

	FG	FJ	FM	FS	HI	J3	KP2	KP4
	12	12	13 16 26	10	12 13 20 21 26 27 29	11 13	12 20 26	10 12 14 17 20 21
03-06								
06-09								
09-12					9 5 + +		+	+
12-15			+		9 5 + 9	+		+ 9
15-18		9			+		+	+ 9 +
18-21	9		5 +	5	+ +	+	+ +	8 7 +
21-24					5			

	KP4cont	PJ	V2	XE	YN	9Y
	26	11 12 13	26	22 26	22	10 11 12 13 14 16 17 19 26
03-06						
06-09						
09-12						
12-15		+ 7	7			+
15-18				5 +		7
18-21	+	9	+		4	9 4 9 + + 5 +
21-24			1	5 +		

Recent years have seen a marked increase in 6m activity in and around the Caribbean. Many individual countries, such as HI and 9Y, may have only a handful of resident 6m operators or are activated sporadically by holidaymakers or dxpeditiioners. Yet, collectively, the region presents a substantial body of activity – more than either Africa or Central Asia. What is not clear is how far this season's results are a product of greater activity and how far reflect improved underlying conditions.

Although South America openings have been placed in a separate table most really belong with the Caribbean openings reported above, with 8R8DB particularly active with a clued-up operator. The "PY" contacts listed were with PU8, which is the prefix for the state of Roraima, the most northerly state of Brazil, lying right up against the Venezuelan border. They can reasonably be considered part of the openings to FY-YV-8R, though whether they required an extra hop is uncertain. CX is a different matter. It relates to a report from GI6ATZ of hearing CX3LY 2137 on the 22nd. This was certainly an excellent evening, extending to South America but CX is a lot further than the other stations reported around then and this was the only time CX3LY was spotted on 6m in 2009 – indeed he was spotted only three times on any band during the twelve months. So this is best treated as unconfirmed. Pity. And, almost omitted by oversight was G7CNF's report of the OA4B beacon at the exceptional hour of 0104 on the 18th. How could we have (almost) missed that?

UK<>South America

	CX	FY	PY	YV	8R	OA
UTC	22	22 24	20 22	26	19 21 22 24	18
03-06						
06-09						
09-12			+			
12-15					5	
15-18					9 +	
18-21		7 5	+		9 + 9 5	
21-24	+	+		+	9	+

Paths to North America from the UK opened on nine days, all but one in the second half of the month. No surprise there. We have no trans-Atlantic reports on the 23rd, 24th or 25th, but those are among the days for which we have very little information. The 26th, for which a full record is available was superb, with signals into the UK from before 1100 UTC until the final fade-out after midnight, when MM0AMW and GI6ATZ worked K4QI and WC2N. Between those times literally hundreds of contacts were made, including many by quite

UK<>United States+Canada

	W1	W2	W3	W4	W5
UTC	16 17 19 20 21 22 26 27	21 22 26 27	22 26	12 16 20 21 22 26 27	16 19 26
03-06					
06-09					
09-12	+ 7 7 +			2 + +	
12-15	+ + + +	+ + +	+	+ + + +	
15-18	+ + +	+ +	6	+ + + +	+ 5 +
18-21	+ + +	+	+ +	+ + + +	+
21-24	+ + +	+	9	+ 7	5

W2,W4 27 0000-0100

	W8	W9	W0	VE1	VE3	VE9	VO1
	17 22 26 27	22 26 27	16 27	26 27	26 27	16 26	20 26
03-06							
06-09							
09-12	+			+	+		9
12-15		+	+			+	
15-18			+				+
18-21	+ 5 +	+ +		+			+
21-24	+	+			9	+	+

modestly equipped stations. Incidentally, these were the only after-midnight UK reports for the entire month. If memory serves correctly, back in the days of the "50 MHz experiment" openings that late were not exceptional; we were not allowed to transmit on 50MHz until after BBC closedown at 2330LMT(though crossband QSOs on 28885 could be made at any time.) In the present month there were a number of contacts before 1000UTC, but evenings were the most fruitful times.

All W districts except W6 and W7 are known to have been worked. (As usual there were numerous out-of-area west-coasters whose calls raised hopes but turned out to be in Florida.) As in most years the W1s and W4s were the most favoured districts, while W2 and W3 were fairly frequently hopped over. W8s and W9s were neither especially difficult or particularly numerous. Colorado was about as far west as signals appeared to reach. It is interesting to note that, as far as the UK was concerned, the Canadian maritime provinces were logged much less frequently than their neighbouring W1s.

50 MHz in Continental Europe

A reminder that little information is to hand about on several days in the month, making it truer than ever to say that propagation is in all probability understated. Apart from those days for which the data are incomplete we know that Es occurred somewhere in continental Europe in every 3-hour period between 0600 and 2100 during the entire month; openings before 0600 were more frequent in eastern Europe (though rare before 0400) and they were more frequent after 2100UTC (rarely after midnight) in western areas. As was only to be expected.

Europe<>Asia

A6 1 day 18(F)

A7 12 days 2(SV) 3 (IT9,SV) 5(SV) 6(SV) 8(SV) 11(SV) 14(EA,F,OK,SV) 16(SV) 19(DL,EA6,G,IS0,ON,OZ,PA,SV,UR,4X,9A,9H) 20 (SV) 21(SV) 29(SV)

BY 9 days 10(UR) 14(SV) 15(LY) 17(4X,5B) 19(4X) 20(F,LY,OZ,UR) 21(9H) 22(UR) 30(HA,I,OE,SV,UR,9H)

DU 5 days 7(4O) 8(SV heard) 9(UR) 11(LY) 14(UR,YO)

EX 1 day 9(LZ,PA,UA9)

EY 3 days 5(SV) 6(DL,F,G,I,T9,OE,OK,SV,SV9,YO,YU,9H) 7(DL,EA,HA,I,IS0,LZ,OE,OK,PA,SP,UR,YO,YU,9A)

JA 22 days 1(HA,SV,S5,UA,UR) 2(UR) 3(CT,EA6,OH) 6(SV(hrd) UR) 7(I,IS0,SV,TA,UR,9A) 8(SV,UR) 9(4X) 11(F,G,I,IT9,LA,PA,SP,SV,S5,UR,9A) 13(HA,SV) 14(SV) 15(EA6,TA) 16(NE Eu) 17(UR) 18(EA,HA,IT9,LZ,OH,OZ,SM,SP,SV,UR,YO,YU) 19(4X,5B) 20(CT3,F,G,I,LY,OH,ON,OZ) 21(DL,EA,EA6,F,G,ON,OZ,PA,SV,9A) 22(EA,OH,UR) 26(SV,UR) 28(DL,F) 29(CT,DL,F,I,SM,UR) 30(CT,F,SM,SV,UR,9H)

UA9 1 day 8(UR)

UK 10 days 1(F,G,HA,OH,SP,UA,UR,YU) 4(HA,4O) 7(UR,YO) 9(DL,F,I,LZ,PA,S5,TA,UA,UR,YO,YU) 10(LZ,PA,UA,UR,YU) 11(OZ,SP,UA9,UR) 18(HA,UR,YO) 24(EA) 27(CT,DL,F,I,OH,PA,SM) 30(SV,S5)

UN 14 days 1(UR) 2(UR) 6(DL) 7(HA,I,OE,SV,S5,TA,UR,9A) 8(C3) 9(SP,SV,UR) 10(UA,UR) 11(CT,DL,IT9,UA9,UR,9H) 12(UR,YO) 13(DL,F,UA,UR) 15(DL,UR,YU) 17(DL,PA,SP) 18(I,UA,UR,YU) 29(I,9A) 30(SV)

VR2 1 day 14(UR)

VU 1 day 30(EA6)

YI 1 day 10(I)

YK 1 day 6(ON)

4J 8 days 7(UR) 8(9A) 9(HB,IT9,UR,YO,(H) 12(DL,ER,IT9,LA,SP,UR) 18(UR) 22(ER) 23(UR) 29(DL,G,HB,I,OE,OK,UR)

4L 1 day 7(UR)

9M 2 days 8(SV,UR,9A) 11(5B) 14(G,I,UR,YO,9H)

Surely this was the best ever month to date for contacts between Europe and Asia. This partly reflected increased activity, whether in countries from which little or nothing had been heard in earlier years, or in countries, such as Ukraine, where the number of operators reporting has increased substantially over the last few years and which were well-placed to work deep Central and East Asia.. UN and UK saw Central Asia more substantially represented than in previous years and also capable of making contacts both eastwards and westwards.

Japan, was worked from Europe on no fewer than 22 days, reaching every cover of Europe at one time or another, from TA/SV (11 days) to CT/CT3 (4 days) (not strictly Europe, of course) to the UK (3days) and SM/OH 5 days). While some openings appeared narrowly focused, those on the 18th and 21st were noticeably broad. Sadly, none of the reports mentioned beam headings, so one can draw no firm conclusions on the much discussed question of signal paths involved - whether great circle (Indian Ocean) or transpolar. At a guess, no single route accounts for all reports – but that is indeed no more than a guess. There is a potential here for some very interesting amateur investigation. Will anyone take up the challenge?

The earliest time SV1DH reports JA is 0530, with the majority of reports before 0730 - but one with JA8 as late as 1600 – midnight JA time.

By contrast with JA, signals from Taiwan, the Philippines and Hong Kong were much less likely to reach western Europe, while there were no reports of HL contacts, though Taiwan and South Korea at least have quite a number of active operators and DU7/PA0HIP may be almost solo in the Philippines but was certainly actively looking to work back into Europe. Japanese beacons were apparently not heard in Europe, though UN0SIX was reported several times into both Europe and East Asia.

The month also brought many openings to the Caribbean and, to a lesser degree, South America. As the following table shows openings began in the Iberian area (CT,EA,EA6), favoured by distance and latitude, which had propagation on at least 20 days. Countries bordering on the Mediterranean did almost as well with 19 days, while countries lying further north had no propagation until the 10th and managed “only” fifteen days of propagation. LA+SM+OH, constrained by both distance and latitude, made reported contacts on only four days, from the 20th onwards.

Europe<>Caribbean/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
North										+	+	+	+	+	?	+	+		+	+	+	+		+		+	+		+	
Iberia	+	+	+	+	+	+	+		+	+	+	+			?		+		+			+	+	+	+			+	+	+
Med		+		+		+	+			+	+	+			?	+	+		+	+	+	+	+	+		+		+	+	+

It is assumed that all contacts in the following table were by way of multihop Es. As is to be expected, a high proportion of contacts at the European end were from the western side of the continent, but a number penetrated further east to Greece, the countries that once made up Yugoslavia, or even Ukraine. In some cases we are looking at ranges of over 8000km, comparable to those involved in (say) JA<>UK working. All seem to have stopped short of the equatorial zone. It seems that Es involving excess of 2 hops is rather more frequent than we would have thought until quite recently. Note, however, that while the tabulation below covers a rich range of countries there were few with the Central American mainland: no TG or V31 and only one with XE, TI or YN, though TI at least was quite active. A hop too far? The earliest reported contact was K1TOL<>EA8FQ at 0842 on the 18th.

Europe<>Caribbean & South America

FY 4 days 4(I) 22(CT) 23(F,ON) 24(EI,G,PA,SV)

HK 1 day 21(DL)

HP 1 day 7(EA)

PY 3 days 11(OZ,PA) 20(G) 22(G)

YV 3 days 5(CT) 24(EA6,ON) 29(SV,S5)

8R 4 days 19(DL,EA,EI,ON,SM,SP) 20(G,CEu) 21(DL,EI,LA,OZ,PA,SM,SP)
22(CT,DL,LA,OH,PA) 24(G,PA,SV) 26(EI,ON,PA) 28(DL,PA,SV)

CO 1 day 10(CT,EA,EA6,IT9,9A,9H)

C6 3 days 9(EA) 12(I,ON) 29(CT)

FG 3 days 7(I) 12(G,ON,YU) 23(EA)

FJ 4 days 7(CT,EA,9A) 10(9A) 12(G,PA) 20(G,IT9,SV)

FM 9 days 1(EA,EA6,F) 7(CT,EA,I,S5) 10(S5) 11 (PA) 13(G) 16 (DL,F,G,OZ, PA,S5)
19(CT,DL,OM,ON) 23(CT,EA) 26(EI,F,ON) 29(SV)

FS 2 days 7(CT) 10(G)

HI 15 days 2(EA,EA6,I,IT9,SV,SV9) 4(EA) 5(CT,ZB,Z3) 6(I) 7(CT,C3,EA,E7,I, IS0,S5,4X,9A)
10(EA,EA6,F,HA,I,S5,YU,9A) 11 (F,S5) 12(DL,F,G,I,IT9,ON,PA,SV,UR) 13(DL) 16(EI)
17(DL,EA6) 20(DL,F,G,IS0,LA,ON,OZ) 21(G,SV) 26(DL,F,G,OK,ON,OZ,PA) 27(G)
29(CT,EA,EA6,G,I,UR) 30(CT)

J3 2 days 11(G,PA) 13(G)

KP2 10 days 4(CT,I) 7(CT) 10(EA,F,I,9A) 11(PA,S5) 12(EA,F,G,I,PA) 20(G,PA) 23(S5)
26(G) 29(F,9H) 30(9H)

KP4 19 days 2(SV) 3(CT) 4(CT,EA,I,IS0) 5(CT) 6(EA,F,HB,I,IS0,SV) 7(CT,DL,EA,E7,HA,I,
IS0,9A) 10(CT,DL,EA,EA6,EI,E7,F,G,HB,I, IT9,LX,OE,OK, ON,PA,SP,S5,9A,9H) 11(CT,DL)
12(CT,DL,EA,EI,G,HA,HB,I,LZ,OE, OK,OZ,ON,PA,SV,UR,9A) 14(DL,G,PA)
17(EA,EA6,G,SV) 19(EA6,F,IT9,ON) 20(G,ON,OZ,PA,SV) 21(DL,F,G,OH,OZ,PA, SM,SP,SV)
22(CT,IT9) 23(CT,EA,EA6,I,IS0,IT9) 26(EI,F,G) 28(I,IT,9H) 29(CT,HA,I,OK) 30(EA,S5)

PJ 7 days 2(EA6,I,SO,S5) 11(EA,G,I,PA,S5,UR) 12(G,LX,ON,PA) 13(EI,G) 20(G,CEu)
22(IS0) 28(CT,EA)

TI 1 day 26(F)

YN 1 day 22(ON)

VP2M 1 day 12(PA)

V2 4 days 25(CT,DL,EA,EI,I,IS0,LA,OK,OY,PA,SV,S5,UR,9A) 26(G,IS0) 28(EA,SV)
29(DL,EA,F,HA,IS0,OK,SP,9A) 30(EI,I,S5,9A)

XE 22(IS0)

5J 1 day 23(CT,EA,I,9H)

9Y 12 days 1(CT,EA) 2(SV) 10(G,OM) 11(DL,EA,EI,G,I,PA) 12(EI,F,G,HA,I,LX,PA, SV,9A)
13(G,ON,PA) 14(G) 16(DL,EI,F,G,ON,PA) 17(F,G,ON,PA,SP)
19(DL,EA,EA6,G,IT9,ON,SP,SV) 23(EA,F,I,ON,PA,SP) 24(SV) 26(G,ON) 28(F) 29(EA,F)

Europe to North America

North America paths opened sparsely in the first half of the month, after which they were a daily occurrence for most areas.) (50MHz was in good shape on the 13th, 14th and 15th but the skip favoured other areas. There is hardly any data for the 25th but SV1DH's brief note for the day suggests that this was not a particularly good day.) Contacts were reported on 18 days by operators in Mediterranean Europe and in Iberia but on only 13 days from countries further north. Inevitably western Europe had most of the openings but LZ was worked on the 9th and 20th, HA on the 11th, TA on the 12th, UR on the 18th, 20th, 21st and 22nd, and 4X on the 26th, plus of course contacts with Greece listed below by SV1DH.

	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
North											+	+				+	+		+	+	+	+		+	?	+	+		+	+
Iberia				+		+			+			+				+	+	+	+	+	+	+	+	?	+	+	+	+	+	+
Med						+			+		+	+				+	+	+	+	+	+	+	+	?	+	+	+	+	+	+

Europe<>North America June 2009

W1 16 days 6(CT,I) 9(EA) 11(DL,IT9,LA,S5) 12(IS0,SM,SV) 14(F) 16(EA,EA6,G,SV)

17(CT,EA,EA6,F,G,I,IS0,IT9,SV,9A) 18(DL,EA,F,G,I,OE,OK,PA,S5) 19(9H)

20(DL,EA,EA6,E7,F,G,HB,I,IS0,IT9,OE,ON,OZ,PA,SP,YO,YU,9A,9H)

21(DL,EA,EA6,F,G,HB,I,IS0,IT9,OE,OZ,PA,UR,9A) 22(CT,F,I,IS0) 26(CT,EA,EA6,F,G,IT9,ON,SV,ZB,4X)

27(EI,G,S5) 28(CT) 29(CT) 30(CT)

W2 11 days 16(EA6) 17(CT,EA,EA6,F,I,IT9,SV,ZB,9H) 19(CT,EA,EA6,F,IS0,IT9)

20(DL,IS0,IT9,EA,EA6,F,OE,PA,S5,UR,9A) 21(DL,EA,EA6,F,G,PA,9A) 22(F)

26(CT,DL,EA,EA6,F,G,HB,I,IS0,ON,PA,SV,ZB,9A) 27(G,SV) 28(CT) 29(CT,EA,EA6) 30(CT)

W3 9 days 8(CT) 9(9H) 17(EA,EA6,F,I,SV) 19(CT,EA,EA6,E7,F,IT9,PA) 20(EA,EA6,E7,9A) 21(EA,EA6,ON,UR)

22(DL,G,I) 26(EA,EA6,F,G,IS0,SV) 27(EI,SV) 29(CT,EA6,IS0) 30(CT,IT)

W4 18 days 4(CT) 9(CT,C3,EA,EA6,F,I,IS0,IT9,LZ,SV,S5,9H) 12(CT,EA,F,G,IS0,IT9,ON,TA,5B,9A) 14(F)

16(DL,EA,EA6,G) 17(EA,EA6,F,I,IS0,IT9,SV,ZB) 18(CT,EA) 19(EA,EA6,E7,F,I,IS0,PA,9A)

20(DL,EA,E7,F,G,I,LZ,OH,ON,YU,9A) 21(EA,F,G) 22(CT,EA,F,G,I,IS0,IT9) 23(CT,I,S5) 24(OK,SV,S5)

26(CT,DL,EA,EA6,EI,F,I,IT9,ON,PA,SV,YU,ZB,9A) 27(G,SV) 28(CT,EA,IT) 29(CT,EA,IS0,IT9,OM) 30(CT,IT9)

W5 8 days 9(EA6) 12(C3,EA,F,I,IS0,IT9,9A) 16(EA,EA6,G) 17(CT,PA,SV) 19(CT,DL,EA,EA6,F,G,I,S5) 20(EA,F)

22(CT,IS0,S5,UR) 26(CT,DL,EA,EI,F,G,I,PA)

W6 1 days 19(EA)

W7 2 days 12(EA6,I) 27(CT)

W8 7 days 17(CT,EA,EA6,G,SV,ZB) 19(DL,EA,I,IS0) 22(CT,G) 26(CT,EA,EI,F,G,PA) 27(G,SV) 29(CT) 30(CT)

W9 7 days 12(C3,EA) 17(EA,EA6,SV) 22(G) 26(CT,EA,EA6,G,I) 27(CT,EI,G,SV) 28(CT) 29(IT9)

W0 10 days 11(HA) 14(F) 16(EA,G) 17(SV) 19(EA) 26(CT,EA) 17(EA) 19(EA,EA6) 20(EA,IS0) 22(CT) 27(G)

VE1 8 days 9(EA,EA6,F,I) 17(CT,F,IT9,SV) 20(DL,EA,EA6,E7,I,IS0,IT9,LZ, OE,ON,PA,S5,UR, YU,9A,9H) 21 IT9,ON,PA) 24(CT) 26(EA,G,I,PA) 27(EA,G) 29(CT)

VE2 4 days 17(CT,EA) 20(EA,9H) 23(CT) 27(CT)

VE3 5 days 16(EA6,SV) 17(CT,EA,EA6,F,I,ZB) 20(CT,EA,I,UR) 26(CT,EA,G,ZB) 27(G,SV)

VE9 6 days 9(CT,EA) 17(EA,SV) 19(F,I) 20(CT,IT9) 26(G) 27(G)

VO 7 days 17(CT,EA,F,ZB) 18(CT) 19(EA,I) 20(EA,G,IT9,9H) 24(EA,F,9A) 26(CT,EA,F,G,ON,PA) 27(CT)

As seen earlier for Britain W4 was the most readily worked US district, followed by W1 and then W2. But there were also contacts with W6 and W7, which appear to have eluded British operators. VY2 is missing from the list, though known to have been active. VE8BY was also an absentee, though that beacon is usually heard a few times during the summer season. As is often the case signals appear to have stopped short at the VE4 border. The latest trans-Atlantic report was K6EID/4 with CT1ILT at 0138 on the 18th.

There really is nothing one can add to the report from Costas, SV1DH, below. Despite focusing on working over 2000km for reasons one readily understands, it is voluminous and Costas' record of working 66 countries and contacting all contacts is not only impressive, but underlines the amount of multihop propagation that was available this year (or every year?). His detailed commentary that follows his personal report of what he worked is rich in fascinating detail, including the occasions when JA had propagation to Europe and North America simultaneously.

50MHz PROPAGATION REPORT FOR JUNE 2009 BY SV1DH

1. Data for all days (30), reported openings >2000Km only.
2. Relatively good days on: 8,17,20+,24,27,30
3. 48 MHz AF video (3C+TN+5Z) on: NIL
4. 55 MHz AF video (5N) on: NIL
5. Opening to CT3 on: 5,6,8,20,24,26,28,30 (2E) (R=27%)
6. " CN on: 5,6,8,12,16,17,19,20,21,24,28,29,30 (2E) (R=43%)
7. " EA8 on: 5,8,12,15,19,20,24,27,28 (2E)
8. " EA9 on: 28 (2E)
9. " D4 on: 12 (3E)
10. " 6W on: 18 (4E)
11. " TZ on: 26(1645),28(1030), 29(0815) (3E)
12. " TN on: 27(1515+1615),30(0830) (5E)
13. " TL on: 27(1615) (4E)
14. DU7/PA0HIP on: 8(1045 hrd me) (10300Km - NEs)
15. " JA on: 7(0530-0600+0630-0700+1300-1400),8(0545-0605+0945-1015+1045-1100 JR6),11(0545-0700 JA8+0830-0900),13(0545-0730),14(0645 JR6),18(0545 JA8+1600! JA0),21(0800 JA6),26(0615-0645 JA1,0),30(0745-0800 JA8 up S5!) (NEs) (R=30%)
16. " BD on: 14 (0600-0830 in-out), 30(0700+1415!) (NEs)

17. " UK on: 14 (3E)
18. " UN on: 7(0430),9(1030),30(1400-1500) (3E) (R=10%)
19. " EY on: 5,6 (3E)
20. " A7 on: 2,3,5,6,8,11,14,16,17,19,20,21,29 (2E) (R=43%)

21. " W on: 9(1145 W4),12(1200+1300 W1),16(1600 W1),17(1430-1630 W1-5,8-0 +1930-2030 W1),24(1600 W4),26(1030-1115 W1 in-out +1145-1245 W1-4),27(1200-1330 W2-4,8-9 up S5!) (NEs) (R=23%)
22. " VE on: 16(1300 VE3),17(1430 VE1+2000 VE9),27(1230 VE3)
23. " HI on: 12(1230),17,20(1800-1830),21(1900) (NEs)
24. " KP4 on: 2(1700-2015 up S5),6(1200),12(1130),17(1000 early+1115),20(1730-2115+!!), 21(1800-1900) (NEs)
25. " FJ on: 20(1800-1830) (NEs)
26. " FM on: 20(1800-1830) (NEs)
27. " V2 on: 28 (1800) (NEs)

28. " 9Y on: 12(1915), 19(1800), 24(2115 late!) (NEs)
29. " 8R on: 24(1845-2115! in-out) (NEs)
30. " FY on: 24(1915) (NEs)

31. " CU on: 7(0945),13,17,19,20(1730-2100),21(0915 early), 22,24,28,29 (3E) (R=33%)
32. " CT on: 1-4,6-8,12,14,16-24,26,29,30 (2E) (R=70%)
33. " EA on: 2,3,4,6,8,12,17-22,24,25,29,30 (2E) (R=53%)
34. " G on: 17,20,29,30 (2E)
35. " GW on: 17,20,21,29,30 (2E)
36. " GM on: 11,14,16,29 (2E)
37. " GI on: 19,24 (2E)
38. " EI on: 14,20,24 (2E)
39. " OZ on: 14,17,24,27,29 (2E)
40. " OY on: 14,17 (2E)
41. " OH on: 16 (2E)
42. " SM on: 23,30 (2E)
43. " LA on: 17 (2E)
44. " ES on: 16,23 (2E)
45. " UA on: 15,16 (2E)
46. " SV5 on: 3 (rare tropo)

47. Special events on:

- 1(0600 JA to W6+EU simult! +0615-0800 JA to SV2+UR+HA+S5+1530 9Q+TN to N.EU Es)
- 2(0615 JA to W6+UR simult! +0615-0700 JA to UR +1015-1045 8Q to 5B +1615 KP4 to SV2+EU +1830 SV14 to F +1900 9Y to SV2)
- 3(0645-1030 JA to EU incl. CT+OH +0800 9M6 to UN + 1230-1330 KP4 to CT+ 1430-1500 SV14 to DL+G +1600-1730 I+S5+HA+9A+DL+OK+OE on 4m)
- 4(1145 KP2,4 to CT+I0 +1230 HI to EA +1300 KP4 to I+1530 KP4 to CT+ TN+TR to C.EU +1700 OK on 4m)

- 5(0600 LA5YJ QTF SW hrd DK1MAX QTF N with >1sec LDE!! +1600 6W to CT+EA +1700 KP4+W4 to CT +1815 CT3 to SV2 on 4m)
- 6(0648-0652 WSPR decoded of JE1BMJ on 6m +1045 W1 to CT first 2009 +1600 EY to CU+CT+EU)
- 7(0630 DU7 to 4O +0730 5N to IS+EA +0845 JA to IS+1115 JA to UN +1300 JA to UR)
- 8(0730 SV2 to SV5 short Es+0830 DU7 to UN+ 1000-1030 9M6 to UR up S9!+1215 8Q to LZ+UR +1400 TR to IS +1500-1630 EA6+CT on 4m+ 1730 EA6 on 4m)
- 9(0545-0645 DU7 to UR+UK +0615 BY to UR + JA to 4X +0700-0800 UK to C.EU +0730 EX to LZ +1800-1900 DL+G on 4m)
- 10(0615 UK to UR+YU +0630 UN to UR +1415 KP4+CO to IT+9H +1630 CO to 9A+1730 CO to 9H +1845 9Y to G)
- 11(0415 UN to UR +0645 9M6 to 5B+ 0700 JA to F+PA+G+ 0845 DU7 to LY+ 1130 W1+KP2+PJ to S5+ 1800 9Y+PJ+KP2,4 to W.EU)
- 12(0730 UN to YO+ 1030 OX to F+1130 KP4 to I+DL+PA+ 1345 SV14 to I4+1545 G+GW on 4m+1730 W7 to EA6+1815 D4 to SV2 on 4m+1815-1900 CT3 on 4m)
- 13(0530 UN to UR+ 0615 JA to HA+I+DL+ 0715 UN to DL+1200 KP4 to GM+1230 9Y to PA+1430 9Y to G+PA+ON)
- 14(0515 9M6 to UK+ 0530 JA to SV5+ BY to UR+9M6 to UR+ 0545 9M6 to I5+ 0645 9M6 to 9H+YO+ 0730 VR2 to UR+ DU7 to UR+YO+ 0900 DU7 to UR+ 1145 OK+OM on 4m+1215 G+F+DL+LX on 4m+ 1445 KP4 to PA+DL+ 1615 A7 to OK+F+EA)
- 15(0630 UN to UR+YU+DL+ 0645-1115 JA to TA+EA6+E.EU+ 0745 BY to LY+1530-1800 +1900-1945 SV14 to OK+OM+DL+HA+F+S5+OE+ 1700 TR to SP+OK+HA+ 1700-1715 DL+ON on 2m+1730 UN to UR)
- 16(0530-0830 JA to NE.EU+ 1230-1645 ZS6JON operating SV1DH +OK+OM on 4m)
- 17(0600 UN to SP+0630 BX to 5B+0645 JA to UR+0700 BX to 4X+1415 LX+F on 4m+1430-1615 I+IS+TK+F+DL+EA6+EA3 on 2m+1700-1915 CT+G+GW+OZ+OY+I+DL+F+LX+PA+OK+OM+SP+9A+S5 on 4m!)
- 18(0545 JA to SM+OH+SV8 +1130 W4 to CT+1330+1415 SV14 to DL+1330-1430 JA to SV2+LZ+YO+5B+IT+9H +1415 UN+UK to UR+1445-1500 SV14 to OK+DL+OE +1600! JA to UR)
- 19(0700 JA to 5B+ 0700-0930 JA to 4X+0715 BY to 4X+ 1030 TR to DL+ 1200 W4 to IS+1300 8R to ON+1500 8R to N.EU+1530 W1 to 9H)
- 20(0630 JA to LY+OH+ 0700 JA to ON+BY to SM+ 0800 JA to I+N.EU+0830 JA to CT3!+ F on 4m+1430 A7 to EA3+ 1515 8R+PJ to C.EU+G +1615 KP4+FJ to G+IT +1745 SV14 to GI)
- 21(0445 EA6 early!+0730 JA to DL+EA+0715 SV14 to CT+48EU to W1 very early+1030 W1+HI to NW.EU+1100 KP4 to NW.EU+VE1 to LZ+1145 PU8 to G+ 1345 KP4 to NW.EU+1500 HI to NW.EU+1800 8R to N.EU+IT+ 1845 HK! to DL+2045 8R to NA+EU simult.+hi+kp4 to N.EU)
- 22(0700 JA to OH+EA +0930 DU7 to UN+1400 W4 to W+C.EU +1445 XE to EA+ 1545 XE to IS+1615 PJ to IS+W4 to I5+1700 SV14 to OK+OM+DL+ 1815 KP4 to CT+IT+8R to N.EU +1915 8R to NW.EU)
- 23(1300 KP4 to EA+IT+ 1330-1345 5J to I+1615 W4 to CT+1730 KP4 to IT+1900 5J to EA+CT +1930 FM to EA+8R to OH +5J to 9H, NIL SV1)

24(0730 SV14 to DL+F+LX+ 0800 SV14 to I+0900 SV14 to F+1100 SV14 to F+ 1445-1530 DL+LX+G+GW+GM+GI+EI on 4m +1500 W4 to S5+1800 SV94 to EI+1845 8R to DL+I+1900 8R+FY to G+PA)
 25(1845 V2 to CT+EA)
 26(1000 W1 to EA+ 1130 V2 to G+ 1200 V2 to IS+1315 HI to NW.EU+1500 W4 to YU+IT+ 1515 TZ to I5+XE to DL+1630 TZ to I+1730 TZ to NW.EU+1845 V2+8R+9Y to NW.EU)
 27(0930 TZ to MED+1030 TZ to VE early! +1115 TZ to W+VE +W1,3 to G+1145 W1 to S5)
 28(1145 KP4 to IT+9H+1215 KP4 to I0+1430 W1,4 to EA+IT +1600 8R to EA+ 1700 8R to DL+PA+ 1730 V2 to EA+1830 8R to SV2)
 29(0545 JA to UR+DL+ 0600 DU7 to UK+0630 JA to DL+I+ 0645 JA to F+0700 JA to SM+0800 JA to CT+F+ 0830 JA to F+0930 TZ to EI+1030 8R to S5+ON+ 1115 W4 to CT+8R NW.EU+ 1145 HI to EA+G +W4 to EA+CT+1330 W43 to IT+1400 V2 to 9A+1530 V2 to IS+ 1600 TZ to YO+ 1645-1900 OK+OM+9A+I+OE+DL+LX+OZ+EA6+G+GW+GM on 4m+ 1745-1845 DL+S5+I+EA3 on 2m)
 30(0515 JA to UK+JA to W7,0 simult.+0600 JA to UR+0615 BD to I+HA+0715 SV14 to DL+0815 JA to 9H+1115 W3 to IT+1230 V2 to I+9A+LZ+1345-1530 JA to UN+ 1400 SV14 to CT+1430 EA6 on 4m +V2 to S5+ 1545 CT on 4m+TN to N.EU+ 1700 EA6+DL+F on 4m+1830 EA6 on 4m).

- First ever S. America (9Y+8R+FY) worked or heard in SV via Es!
- Many DX Es openings were VERY geo located.
- The duration and geo stability of some DX Es openings were amazing.
- The NE and SW-W axis were favourite this month.

48. DXCC entities heard/worked during June 2009 : 66 on 6 cont
 (AF=9 , AS=6 , OC=1 , NA=7 , SA=3, EU=~40)
 49. DXCC entities heard/worked on 20th June 2009 : 35 on 4 cont.

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The Americas

There were so many contacts between W/VE and the great range of “entities” in the Caribbean, or within the Caribbean, were too numerous to tabulate economically. Consequently, the preceding table is restricted to those involving countries in continental South America, all of which required multihop propagation. In all, not counting the contacts between Caribbean countries and South America listed above, North<>South America propagation was reported on at least 21 days and included two openings from W6, three from W7 and one from VE7. PY was the most frequently contacted country. As for the Europeans, almost all were with PU8/PY8, as were Caribbean contacts with Brazil. The more familiar, but more distant, PY1s and PY2s, lying within or across the (geomagnetic) equatorial zone could rarely be reached and were no doubt quite frustrated. .

North America+Caribbean>South America

FY 5 days 7(W1) 11(W1) 22(W4,W0) 23(W1) 29(W4,KP4)

HK 4 days 10(W3,W8) 22(W4,W0) 24(W8,W9) 29(W3)

HP 3 days 21(W2) 22(W3,W8) 23(W4,W7,W9) 24(W5)

PY 17 days 2(V4) 3(FY,V4,YV) 4(FY,KP4,V4) 5(FY,KP4) 6(KP4) 7(W1,FY,KP4) 10(W8,KP4) 11(W1,W2,W3,W4,W8,W9,W0,VE1,VE2,VE3,VE9,J3,KP4,PJ) 12(W1) 13(W3,W4,W8,W9,VE1) 14(FJ,PJ,YV,9Y) 17(FJ,YV) 19(W1) 22(W1,W2,W3,W4,W9,W0,VE1,VE2,VE3,KP4) 23(W1) 25(W7) 29(W1,W2,W4,W8,KP2,KP4) 30(W2,W4,W8,W9,KP4,YV)

YV 13 days 4(W4) 5(W3) 6(W4,FM,PJ,8P) 7(W1) 9(W1) 10(W0,KP4) 11(W4,W8) 12(W2,W3,W4,W5,W0) 13(W4,W8,W9,W0) 21(W1,W3,W4,W8) 22(W3,W4,W9,W0,VE1,VE2) VE3,KP4) 23(W7) 28(W1,W9) 29(W1,W2,W4,W8, KP2,KP4)

8R 9 days 6(W4) 18(W4,W5,KP4) 23(W1,W2,W3,W4,W5,W7,W8,VE2) 24(W4,W6,KP4) 25(W5) 26(W2,W5,W8,W9) 27(W3) 29(W1,W2,W3,W4,W5,W6,W7, W8,W9,W0,VE1,VE2,VE7,VE9,HI,KP4,YV) 30(W5,W8,W0,KP4

Transpacific DX working is mainly the prerogative of the west coast, and this year was no exception. This was a good year for June openings to JA and KH6, the most common destinations but other call areas featured more frequently than usual, with JA openings to W4(3 days), W5(6) and XE(2). By contrast, VE7 was reported as working into Japan on only one day – a decline on recent years. KL7, which is known to have occurred in line with JA openings in past years appears not to have worked into JA this summer and into the US on only two days.

North America<>Asia/Pacific

BA 30(W7)

JA 14 days 1(W6) 7(W6) 10(W4,W5) 11(W5) 14(W5) 15(W5) 16(W4,W5,W6,W7,W9,W0,XE1) 18(W4,W5,W6,W7,W9,W0,XE1,XE2) 20(W7,W0) 21(W6,W7) 23(W6) 25(W6) 28(W6,W7) 29(W6) 30(W7,W0,VE7)

KH6 11 days 1(W0) 4(W6) 6(W6,W7) 9(W4,W5,W6,W7) 11(W5,W6,W7) 12(W6) 21(W6) 23(W6,W7,W8,W9) 25(W6) 26(W6) 30(W4,W6,W7,W0)

KL7 2 days 23(W8) 30(W5,W6,W7)

V7 1 day 1(W6)

Openings to KH6 are also a feature of summer propagation. This year looks to have been above average, with Stateside openings on 11 days, including contacts with in-district W4s located and one with W5). The favoured time for JA and KH6 openings was from late afternoon or evening in the US to the morning or noon period in Japan or Hawaii.

Asia and the Pacific

June 2009 brought what is probably the biggest crop yet of reports featuring Asia. JA was naturally the most prominent, but activity was also noted from Taiwan, VR2, HL, JD1, 9M, DU, UN, UK, UA9, UA0, XW, VU and KG6/AH2, though several of these made only the odd QSO and the licensing status of some remains unclear. There were no reports involving Indonesia, which appears to have no committed 6m operators, while the Philippines is essentially represented only by DU7/PA0HIP and the DU1EV beacon. A number of Asian countries do not allow 6m operation.

Apart from contacts between Asia and Europe, discussed previously, the reports of note were reception of the DU1EV beacon by KH7Y and QSOs between VK4TL and VK4ZFC and JA8 on the 19th and between JA and KH6 on the 11th, 20th and 25th. The JA2IGY beacon was reported by VK4ABW on the 13th but no QSO resulted.

Australia and New Zealand

Mid-winter in the southern hemisphere and also the bottom of the cycle. Activity was relatively low and the majority of reports were for routine contacts within Australia or, occasionally, with VK<ZL. ZL tv was reported into Australia on a few days. The only two-way DX known to have occurred was the JA>VK4 reception mentioned above. There were a number of reports of foreign television stations just below 50MHz, from OM44 (Mongolia) on June 8, 14, 17, 18, 21, 22 and 29; OK59 (China) on June 5; MM48 (Tajikistan) on the 13th; PN43 (China) on the 17th and EP and 9M on the 29th.

28MHz

28 MHz to and from the UK

Countries and entities heard or worked in the UK included :

A6,A7,CN,CT3,C4,DL,EA,EA6,EA9,EI,ES,E7,F,FS,HA,HB,HB0,HV,HZ,I,ISO,IT9,JY,KP1 (Navassa), KP2,LU,LY,OH,OK,OM,ON,OY,OZ,PA,PY,PY0,SM,SP,SV,SV9,S5,S9, TF,TK,TL,T7,UA,UA9,UR,VE,VO,W,YL,YO,YU,ZB,ZP,4L,4O,4X,5B,6W,9A,9H + 1B

The June haul of some 60 “entities”, depending on how the former Yugoslavia is reckoned), is more substantial than in many recent months. Although the majority of reports are for bread-and-butter contacts within 1xEs range, a respectable number were with more distant destinations that had not been heard on this band for some time, notably those in North America and the Caribbean or, stations at multihop distance eastward, such as 4X,5B,A6,A7,JY,4L and HZ. This produced a band crowded with strong signals for at least 16 hours on most days. However, the record scarcely begins to compare with 50MHz. In particular, no contacts were reported east of UA9, notably with Japan. While W and VE were worked the record is thin by comparison with 50MHz. In particular, no W/VE beacons were logged, not even VE3TEN, which is unusually heard around this time. But then, would it be unreasonable to have expected anything more substantial during this long, solar minimum?

UK monitors reported 52 beacons in the course of the month, all but four of them in Europe. In the tables below the percentage indicates the proportion of days when that beacon was reported into the

	C3OP Andorra 53%	DB0FKS 17%	DB0UM 33%
	1 2 4 5 7 8 10 11 12 16 17 18 19 20 21 24 28	11 19 20 21 24	2 11 15 16 17 19 20 24
03-06			
06-09	5 8 + + 7 + 8	+ + +	+ + 5
09-12	+ 8	+ +	+ +
12-15	3 2 5 5 +	+	+ +
15-18	+ 4	+ +	+ 2
18-21	5 4	+	+
21-24	3 1 3 +		

	DB0UM	DF0ANN	DK0TEN 57%	DLOIGI
	29 30	11 19 20 24	1 2 4 5 10 11 12 15 16 17 19 20 21 24 26 28 30	1 2 3 4 5 10
03-06				
06-09	2	+	++ + 5 8 + + 8 +	3
09-12		+	5 + + +	+
12-15	2	+ + +	+ 6 5 6	
15-18			+ 9 +	3
18-21			5	2 5
21-24			5 1	4 +

	DLOIGI cont 70%	DM0AAB 33%
	11 12 13 16 17 19 20 21 22 24 25 26 28 29 30	5 11 12 15 16 19 20 21 24 26
03-06		
06-09	+ 4 7 + 5 + + 5 +	+ +
09-12	+ + + 5 +	3 + +
12-15	5 + 5	3 + + +
15-18	7	+ 1
18-21	7	+
21-24		1

	DM0ING 33%	EA2ZRA 27%	EA3TEN 47%
	6 11 12 15 16 17 20 24 26 29	15 16 17 18 19 20 21 23	2 4 7 8 10 11 12 13 16 17 21
03-06			
06-09	1 + + +	7 4 7 6	++ 3 + 5 + 6
09-12	+ 1 + + 5	6 7	3 6
12-15	+ 1 +	+ 6	+ +
15-18			+
18-21			
21-24		+ +	+ +

UK at some time, providing a minimum figure for daily reliability. (Numbers set against any time period indicate the strongest signal report during that period, with a '+' where no strength report was given. Perhaps a little surprisingly the '59' reports often associated with Es propagation seem not to have been given all that freely.)

	EA3TEN	EA4Q 87%
	24 28 29	1 2 3 4 5 7 8 10 11 12 13 14 15 16 17 18 19 20 21 23 24 25 26 28 29 30
03-06		
06-09	+	+ 2 2 5 7 + 7 + + 6 + + 6 5 2
09-12	+	7 + + + 6 + +
12-15	+	5 + + 5 + + + + + 2
15-18	+	++ 7 +
18-21	+	+
21-24		3 2 5 + +

	F1VJT 70%	F5ZUU 47%
	1 2 4 7 8 10 11 12 13 15 16 17 19 20 21 24 25 26 28 29 30	1 2 4 10 11 12 14 16 17 19
03-06		
06-09	1 + + + + + + + 4 7 +	3 + + 2 7
09-12	+ + +	+ +
12-15	+ + +	9 9 +
15-18	+ + + + 4	++
18-21	+ +	
21-24	+ +	

	F5ZUU cont	F5ZWE 63%	ER1TEN	HA5BHA
	21 24 26 29	1 2 4 5 7 8 10 11 12 16 17 19 20 21 22 23 24 28 29	11 17	1 2 4 11
03-06				
06-09	+ 5	+ + + + 9 9 + 8 + +	+	3
09-12	+ +	+ 5 9 8 +	+	3
12-15	+ +	+ 9 +		+++
15-18		++ + +	+	
18-21	1	+	+	
21-24		1		

	HA5BHA cont 37%	I1DFS 30%	I1M 63%
	16 17 19 20 21 29 30	2 4 13 19 20 24 28 29 30	1 2 4 5 7 10 12 13 15 17 19 20 21 24
03-06			
06-09	+ +	+ +	+ 5 + + +
09-12	+ +		+ + + +
12-15	+ +	+ +	
15-18	+ +	+ + + +	3 + + +
18-21	+ +	+	
21-24			5 +

	I1M cont	IQ1SP	I3GNQ 57%
	25 26 28 29 30	1 4 7 18 19 20 24 30	1 2 4 5 13 16 17 19 20 21 23 24 25 26 28 29 30
03-06			
06-09	+ +	+ +	+ + + + + + +
09-12			++ + ++
12-15	+ +	+ 5	+ + + + 4
15-18	+ 7 6	+ + +	5 + + +
18-21	5 +	+	
21-24			1

	IW3FZQ 73%	IW3HKP 40%
	1 2 3 4 7 8 11 12 13 15 16 17 19 20 21 23 24 25 26 28 29 30	1 2 4 5 8 10 11 13 16 17
03-06		
06-09	6 7 + 8 + 6 3 4 + 5 + 5	+ + + +
09-12	++ + 8 + +	+ +
12-15	8 6 + + + +	+ 1
15-18	3 8 5 1	3 +
18-21	5	
21-24		1 +

	IW3HKP	IN3KLQ 37%	IW3SGT 43%
	19 30	1 13 19 20 21 23 25 26 28 29 30	1 2 4 11 12 17 19 20 23 24 25 29 30
03-06			
06-09		+ + + + +	+ + + + +
09-12		+	+++ +
12-15	+ 7	+ + +	+ +
15-18		1 + +	2 + +
18-21			
21-24			

	IZ3LCJ 73%	IY4M
	1 2 4 5 7 9 10 12 13 15 16 17 19 20 21 23 24 25 26 28 29 30	1 2 4 5 7 11 12 13 15 16
03-06		
06-09	5 + + 3 + + 5 + 3	6 + + + +
09-12	5 + + + +	+ + =
12-15	5 + + + 5 6	5 +
15-18	5 + + 3	4 +
18-21	+	
21-24	2 + +	2

	IY4M 67%	IQ5MR	I0KNQ 40%	IQ0AP
	19 20 21 23 24 25 26 28 29 30	26	1 8 11 12 13 16 17 18 19 20 21 25	19
03-06				
06-09	+ 5 4 6 2 7		+ + 5 + + +	
09-12	5		+ + 4 +	
12-15	5 +		+ 1 4	4
15-18	+		+	
18-21	5	+	+ +	
21-24				

	IW0HK 64%	IZ0CWW 60%
	1 2 4 5 7 8 10 11 15 16 17 18 20 21 23 24 25 29 30	2 4 10 11 12 13 16 17 18 19 20 23
03-06		
06-09	1 + + 1 + + + + + + +	+ + + + +
09-12	++ + + + +	+ + +
12-15	1 + + +	+ + +
15-18	+ + +	+
18-21	+	
21-24	++	++

	IZ0CWW cont	IS0GSR	IT9DTU	IT9EJW	LA4TEN 23%
	24 25 26 28 29 30	19	11 12 16	2 11 12 21	11 12 17 19 20 21 26
03-06					
06-09	+ + + +	8	+	+ +	8 + 5 5 4 +
09-12	+		+	+ +	8 +
12-15			+		7
15-18	+ 4				
18-21			+	+ +	
21-24					

	LA5TEN 40%	OE3XAC 67%
	2 4 5 7 11 12 17 20 21 25 26 29	1 2 3 4 5 10 11 15 16 17 19 20 21 23 24 25 26 27
03-06		
06-09	+ + 4 5 + 7 +	1 + + + + + 3 + +
09-12	+ + + 7 +	+ + 2 + + 3
12-15	+ 7	+ + + + +
15-18		+ 3
18-21		+ 3
21-24	3	2 +

	OE3XAC	OH2B 43%	OH5RAC 23%	OH9TEN
	29 30	1 2 4 11 12 16 17 19 20 21 24 25 30	2 11 12 16 20 21 24	26
03-06				
06-09	+	+ + + + + + + +	+ + + + + +	
09-12		+ + + + +	+ + +	9
12-15	+	+ +		
15-18		+ + +	+ +	
18-21		+ +	+ +	
21-24				

	OK0EG 53%	PI7ETE	SK0CT 23%	SV3AQR
	1 2 4 5 11 12 15 16 17 19 20 21 23 24 29 30	11	2 4 7 9 11 12 26	11 12 13 15
03-06				
06-09	+ 2 + + + 6 +	+	2 + + +	+
09-12	+ 2 + + 6	+	+ + 9	+ +
12-15	+ 2		6	
15-18	2 4		+	
18-21	+ 5			+ +
21-24	+ 7			

	SV3AQR cont 47%	SV5TEN 27%	YO2X
	16 17 19 20 21 23 24 25 29 30	11 12 13 16 17 20 21 29	11
03-06			
06-09	+ + + + + + + +	+ + + + + + +	+
09-12	+ +	+ +	+
12-15	3 +		
15-18		+	
18-21			
21-24			

	5B4CY 37%
	7 8 11 12 13 16 17 19 21 23 25
03-06	
06-09	+ + + + + + + +
09-12	+ +
12-15	+ +
15-18	+ +
18-21	
21-24	

The reliability figures for most beacons offer few surprises. DL0IGI, F1VJT, EA4Q, IW3FZQ and IZ3LCJ were the most consistent, being reported on 21 days (70%) or more. Perhaps the nearest to a

	KP3FT	CS3B 67%																															
	10	1	2	4	5	7	11	12	13	15	16	17	18	19	20	21	24	25	26	28	29												
03-06																																	
06-09		5	+		+	+	+		+	+	4	+	8	+	+	+		+	+	+													
09-12		5			+	+																											
12-15			+						+						2											+							
15-18		5	+																									+					
18-21																				+						+							
21-14	+	5		1																								+					

	YV5B	4X6TU 67%																										
	4 12 13	1	2	4	6	7	8	11	12	13	15	17	19	20	23	24	25	26	28	29	30							
03-06																												
06-09			+	+	+	5	+	+		2	+		5	+		+	+		7	+								
09-12												+																
12-15												+	+															
15-18	2 +	+						+											+						+	+		
18-21	+	+																										
21-24	+																											

surprise is the modest showing of SK0CT, which has often been one of the most reliable beacons covered in these reports. This could be attributable to downtime during the second half of the month, but the reliability of other Scandinavian beacons was also below expected levels. While two IBP beacons, 4X6TU and CS3B, scored a creditable 67% OH2B was down at 43%, little was heard of OH9TEN and other SM beacons apart from SK0CT were not reported. With scores of 40% and 23% respectively the two LA beacons also put in a relatively weak showing. The most likely explanation is probably that the radio weather worked against them this month.

Italy's array of beacons is impressive. It includes two of the most consistent, plus IY4M which scores only a little less well transmits on 28MHz for only thirty minutes in the hour. The other side of this coin is that a substantial number of Italian beacons, running very low power, were not reported at all, or rarely so. It is hard to tell what they are for or what useful purpose they serve. Some rationalisation would be most welcome.

Rest of the World

This was altogether a more cheering and interesting month than many recently., with only Africa<>Oceania paths showing a nil return. (The tabulation below shows the number of days when openings were recorded, *not* percentages.). Thus, there were openings every day between some part of Europe and both Africa and Asia (usually western Asia), as well as between European countries. There were also openings every day, invariably by Es, within North America and on all but one day between North and South America. Multihop Es also delivered propagation between Europe and North America (including the Caribbean and Central America). This was a marked advance on the 10 days achieved in May, making this among the better months in recent years. Trans-Atlantic beacon reports were surprisingly few in the circumstances, though the 22nd produced signals from W1,W2,W3 and W4 on the 22nd (which was one of the best days on 6M too). It is also worth noting the 15 days when North Americans were able to work into Oceania. Other than that this was a relatively lean month for colleagues 'down under', but as this was their midwinter that was scarcely surprising. Although earlier comments noted numerous contacts between JA and North America on 50MHz the same did not hold on 28MHz, even with the stimulus offered by the AA contest .

UTC Days with Propagation Reported Between and Within Continents (n)

	OC	AS	EU	AF	NA	SA
OC	17	7	2	0	15	1
AS	7	28	30	11	8	2
EU	2	30	30	30	25	24
AF	0	11	30	12	11	5
NA	15	8	25	11	30	27
SA	1	2	25	5	27	6

As usual, the table below breaks down reports by time period, with M covering contacts before 1130 LST, N the noon period to 1430 LST, A covering 1430-1700 LST and E the hours after 1700LST. Results are in percentages.

There were also a number of reports where the interest lies mainly in the time they occurred. Some were early, some late, including EI3GYB<>DD2FK on 29600 FM at 0316 on the 21st; EI9JUIW<>W3JK at 0135 on the 27th; UT7IL copying DL0IGI,SV3AQR and OE3XAB between 0057 and 0102 on the 6th. F5TDK reported hearing CS3B at 0101 on the 6th. DL1REM copied SV3AQR at 0446 on the 28th; K5UR worked E7OP at 0029 on the 20th. On the evening of the 4th ZL1BYZ worked CT1UA at 2245, followed by a contact between ZL4AS and IK4GRO at 2339. From Japan, JA6WIF worked S51DX at 1631 on the 3rd, followed by a contact with LZ5YQ at 1730 (= 0130 LT). There were other JA contacts into Europe around 1600 on the 13th and 18th. And 7Z1SJ reported DL0IGI at 2128 on the 17th.

Reliability of Propagation Between and Within Continents By Time of Day (%)

	OC				AS				EU				AF				NA				SA			
	M	N	A	E	M	N	A	E	M	N	A	E	M	N	A	E	M	N	A	E	M	N	A	E
	%				%				%				%				%				%			
OC	13	33	33	13	00	03	17	10	03	03	00	00	00	00	00	00	23	33	17	13	00	00	00	00
AS	10	10	06	00	67	67	73	77	90	83	70	93	00	06	03	27	20	06	06	06	00	03	00	03
EU	00	00	00	06	93	67	77	87	++	93	97	++	83	50	47	90	03	20	20	80	00	00	20	80
AF	00	00	00	00	06	00	03	23	73	43	47	90	10	06	00	27	00	00	06	33	00	00	00	17
NA	17	17	13	33	03	10	20	10	36	27	47	50	03	13	17	13	97	++	97	++	03	27	50	20
SA	00	00	00	03	00	03	00	03	03	36	80	47	00	00	13	03	00	20	47	77	00	03	10	10

+++ = 100%

M = morning N = noon A = afternoon E = evening