

DAY	Xray class	Observers	John Cook (23.4kHz/22.1kHz)				Roberto Battaiola (20.2kHz)				Andrew Lutley (23.4kHz)				Bob Middlefell (22.1kHz)				Mark Edwards (22.1/24.0/37.5kHz)			
			Tuned radio frequency receiver, 0.58m frame aerial.				Modified AAVSO receiver.				Tuned radio frequency receiver, 0.5m frame aerial.				Tuned radio frequency receiver, 0.5m frame aerial.				Spectrum Lab / PC 2m loop aerial.			
			START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)	
1	*	2	10:08	10:12	10:20	1-																
1	C4.3	5	10:25	10:30	10:46	1																
1	*	2	11:09	11:13	11:18	1-																
1	*	1																				
2	C2.2	1					06:45	06:49	06:53	1-												
2	C3.4	3	08:34	08:44	08:53	1	08:34	08:46	08:54	1												
2	C3.2	5	10:41	10:46	10:54	1-	10:44	10:48	10:57	1-												
2	C1.6	2																				
3	C2.1	2																				
3	C3.4	4	10:05	10:12	10:23	1-	10:04	10:15	10:28	1												
3	*	2	10:42	10:45	?	-																
3	M2.5	7	11:00	11:13	12:12	2+	11:03	11:08	11:13	1-												
4	C1.8	3																				
5	C1.5	2					10:01	10:07	10:15	1-												
5	M1.1	6	11:08	11:21	12:05	2+	11:11	11:15	11:19	1-												
5	C4.2	1																				
6	C2.3	2												08:26	08:27	09:51	2+					
6	C8.8	6	09:54	09:58	10:17	1	09:52	09:56	10:05	1-												
6	C5.3	4	14:44	14:49	15:02	1-																
9	M1.1	7	13:08	13:27	14:06	2+	13:04	13:26	14:06	2+												
11	C1.6	2																	13:09	13:34	15:46	3+
12	C2.5	1					07:41	07:50	07:59	1-									12:27	12:33	12:48	1
13	C2.6	2					09:19	09:23	09:31	1-												
13	C1.9	1																	15:02	15:07	15:22	1
14	C1.2	1					06:08	06:15	06:19	1-												
14	C5.2	4	09:17	09:28	?	-																
14	C2.1	2																	09:21	09:35	09:44	1
15	M1.2	8	09:04	09:18	09:40	2	09:04	09:10	09:23	1				09:38	09:41	10:18	2		11:20	11:23	11:34	1-
15	M1.9	6	12:37	12:46	14:25	3	12:32	12:47	12:52	1									09:05	09:20	09:47	2
15	C3.3	3																	12:36	12:45	13:36	2+
16	C2.8	4	13:32	13:35	13:46	1-																
16	C7.9	5	14:53	15:03	15:25	1+													13:33	13:38	13:52	1
17	C2.1	1																	14:53	15:06	15:46	2+
17	*	1																				
17	C2.4	1																	12:54	13:00	13:17	1
17	C3.1	3																	13:24	13:31	13:51	1+
17	*	1																	13:55	14:01	14:16	1
19	*	1																	14:19	14:22	14:30	1-
20	C4.8	1					07:17	07:29	07:53	2									14:30	14:36	14:48	1-
20	C3.0	4					11:46	11:53	12:03	1-												
20	C1.8	3																	11:51	11:55	12:10	1
20	C1.2	1																	13:30	13:34	13:40	1-
22	C1.9	1					07:24	07:28	07:33	1-												
22	C3.2	5	09:52	09:55	10:08	1-	09:51	09:54	10:02	1-												
22	*	1																	09:53	09:55	09:59	1-
23	C2.6	5	13:27	13:29	13:40	1-													12:39	12:45	12:52	1-
27	C1.1	1																	13:27	13:29	13:50	1
28	C2.2	1																	12:02	12:04	12:08	1-
29	C2.5	2																	13:24	13:29	13:36	1-

DAY		Colin Clements (23.4kHz/37.5kHz)	Peter Meadows (23.4kHz)	Mike King (20.9kHz)	John Wardle (19.6/23.4kHz)	Peter King (18.3kHz)
		AAVSO receiver, 0.76m screened loop aerial.	Tuned radio frequency receiver, 0.58m frame aerial.	AAVSO receiver. Tuned loop aerial.	PC soundcard, long wire aerial.	Own designed receiver, 1.4m loop aerial.
		START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)
1	*					
1	C4.3	10:25 10:33 10:52 1+			10:21 10:32 10:57 2	
1	*					
1	*					
2	C2.2					
2	C3.4				10:37 10:48 11:01 1	
2	C3.2					
2	C1.6					
3	C2.1					
3	C3.4				10:05 10:12 10:15 1-	
3	*					
3	M2.5	11:03 11:13 11:45 2			11:01 11:12 11:40 2	
4	C1.8				10:52 10:58 11:00 1-	
5	C1.5					
5	M1.1	11:09 11:25 12:03 2+			11:13 11:23 11:55 2	
5	C4.2				15:08 15:17 15:26 1-	
6	C2.3					
6	C8.8	09:58 10:00 10:29 1+			09:54 09:58 10:31 2	
6	C5.3					
9	M1.1	13:14 13:32 13:56 2			13:06 13:30 14:29 2+	
11	C1.6					
12	C2.5					
13	C2.6				09:19 09:23 09:37 1-	
13	C1.9					
14	C1.2					
14	C5.2				09:26 09:33 09:43 1-	
14	C2.1				11:21 11:25 11:31 1-	
15	M1.2				09:05 09:15 09:34 1+	
15	M1.9				12:35 12:50 13:05 1+	
15	C3.3					
16	C2.8				13:32 13:37 13:47 1-	
16	C7.9				14:51 15:05 15:12 1	
17	C2.1					
17	*					
17	C2.4					
17	C3.1				13:56 14:00 14:07 1-	
17	*					
19	*					
20	C4.8					
20	C3.0				11:48 11:55 12:14 1+	
20	C1.8				13:32 13:36 13:40 1-	
20	C1.2					
22	C1.9					
22	C3.2					
22	*					
23	C2.6				13:26 13:29 13:40 1-	
27	C1.1					
28	C2.2					
29	C2.5				08:56 09:01 09:10 1-	

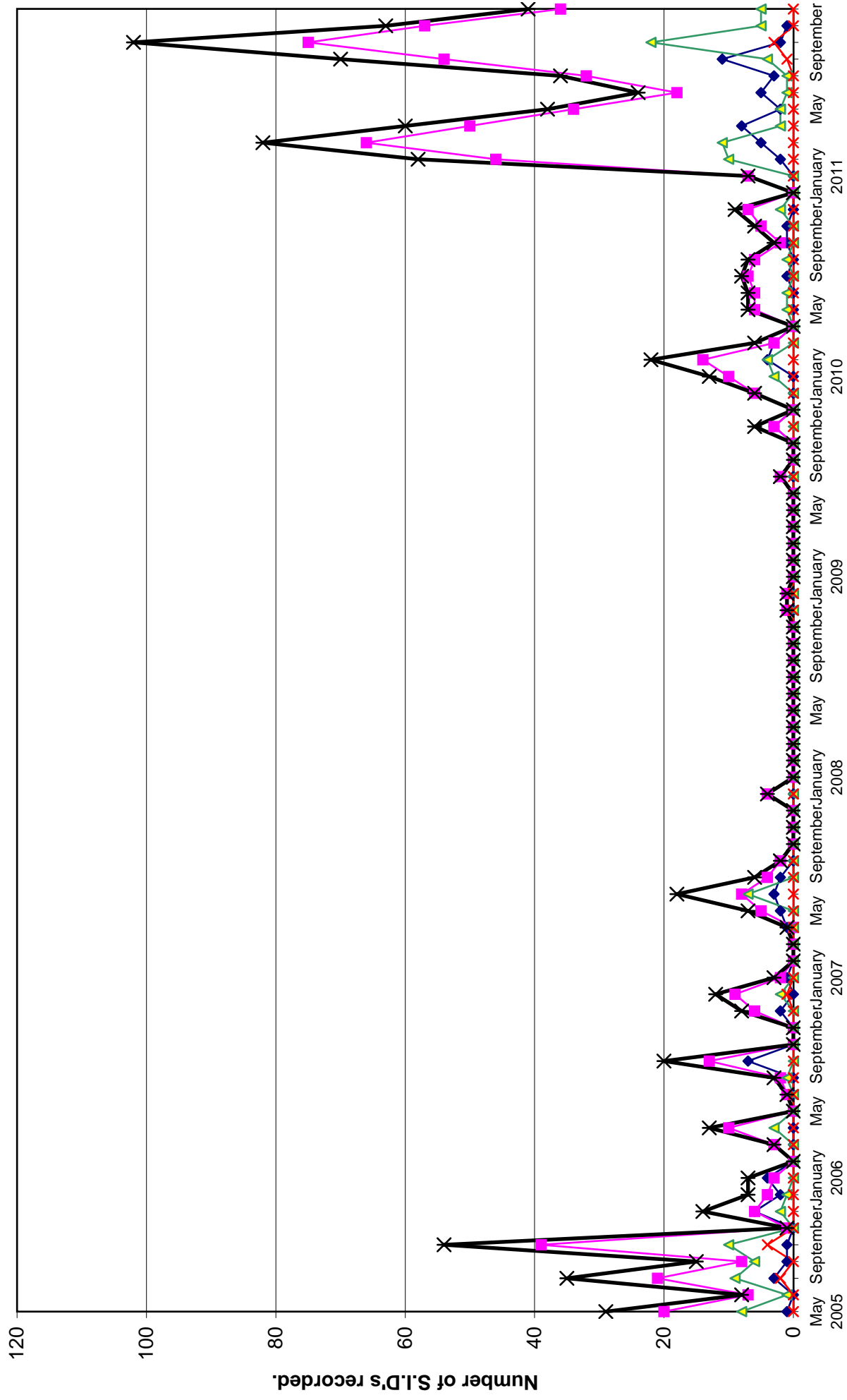
BAA Radio Astronomy Group.

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DAY		Paul Hyde (22.1kHz)				Gordon Fiander (23.4kHz)			John Elliott (21.7kHz)			Martyn Kinder (19.6kHz/22.1kHz)				Mark Horn (23.4kHz)				
		Tuned radio frequency receiver, 0.96m frame aerial.				PC sound card.			Tuned radio frequency receiver, 0.5m frame aerial.			Tuned radio frequency receiver, 0.58m frame aerial.				Tuned radio frequency receiver, 0.58m frame aerial.				
		START	PEAK	END (UT)		START	PEAK	END (UT)	START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)	
1	*	10:08	10:12	10:15																
1	C4.3	10:23	10:32	11:01									10:22	10:33	10:52					1+
1	*	11:08	11:13	11:22																
1	*	13:48	13:53	14:02																
2	C2.2																			
2	C3.4												08:46	08:52	08:59					1-
2	C3.2	10:38	10:47	11:06									10:40	10:47	10:56					1-
2	C1.6	12:22	12:24	12:31									12:21	12:24	12:28					1-
3	C2.1	09:40	09:43	09:48									09:39	09:46	09:54					1-
3	C3.4	10:04	10:11	10:24																
3	*	10:39	10:45	10:59																
3	M2.5	11:00	11:11	11:54									11:01	11:11	11:25					1
4	C1.8	10:52	10:56	11:02									10:49	10:56	11:03					1-
5	C1.5												10:04	10:08	10:17					1-
5	M1.1	11:11	11:21	11:56									11:11	11:23	12:00					2+
5	C4.2																			
6	C2.3												08:05	08:08	08:11					1-
6	C8.8	09:54	09:58	10:20									09:54	09:58	10:12					1-
6	C5.3	14:43	14:50	?									14:35	14:50	14:59					1
9	M1.1	13:07	13:33	14:33									13:02	13:26	13:59					2+
11	C1.6	12:26	12:36	12:47																
12	C2.5																			
13	C2.6																			
13	C1.9																			
14	C1.2																			
14	C5.2	09:18	09:28	09:57																
14	C2.1																			
15	M1.2	09:05	09:19	09:48									09:11	09:18	09:28					1-
15	M1.9	12:32	12:47	13:54									12:31	12:43	13:24					2+
15	C3.3																			
16	C2.8	13:31	13:35	13:45																
16	C7.9												14:51	15:04	15:15					1
17	C2.1												09:43	09:46	09:51					1-
17	*																			
17	C2.4																			
17	C3.1	13:56	14:01	14:16																
17	*																			
19	*																			
20	C4.8																			
20	C3.0	11:49	11:55	12:07																
20	C1.8	13:31	13:34	13:38																
20	C1.2												15:21	15:26	15:33					1-
22	C1.9																			
22	C3.2	09:52	09:55	10:21									09:50	09:55	10:01					1-
22	*																			
23	C2.6	13:27	13:29	13:33									13:25	13:30	13:34					1-
27	C1.1																			
28	C2.2																			
29	C2.5												08:57	09:00	09:04					1-

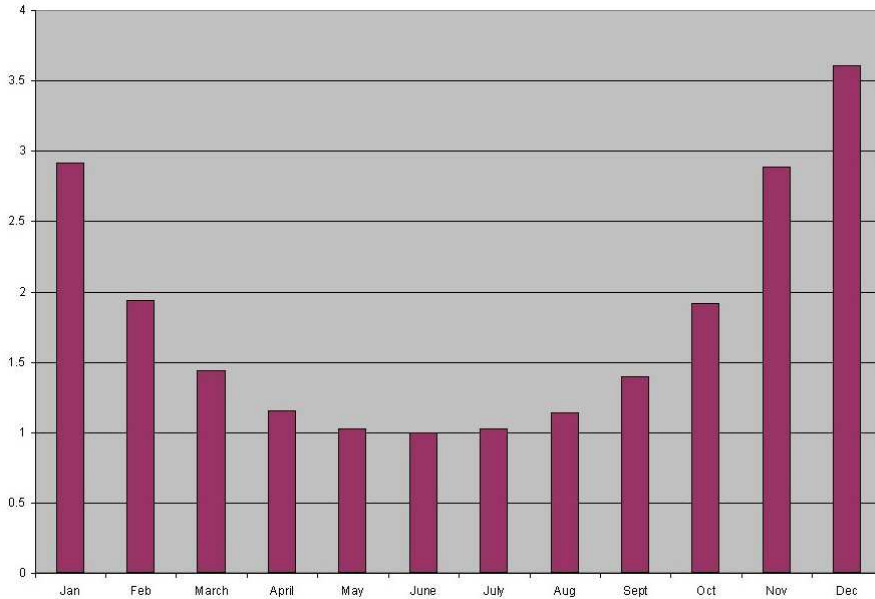
DAY		Steve Parkinson (20.27kHz)	Simon Dawes (various)	Gonzalo Vargas (Various)		
		Tuned radio frequency receiver, 0.8x0.5m frame aerial.	PC soundcard and TRF receiver with 1m loop aerial.	Spectrum Lab.		
		START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)
1	*					
1	C4.3					
1	*					
1	*					
2	C2.2					
2	C3.4					
2	C3.2					
2	C1.6					
3	C2.1					
3	C3.4					
3	*					
3	M2.5	11:03 11:12 12:12 2+				
4	C1.8					
5	C1.5					
5	M1.1					
5	C4.2					
6	C2.3					
6	C8.8					
6	C5.3	14:48 14:51 15:09 1				
9	M1.1					
11	C1.6					
12	C2.5					
13	C2.6					
13	C1.9					
14	C1.2					
14	C5.2					
14	C2.1					
15	M1.2	09:09 09:12 09:51 2				
15	M1.9					
15	C3.3			16:34 16:35 16:40 1-		
16	C2.8					
16	C7.9	14:57 15:06 15:30 2				
17	C2.1					
17	*					
17	C2.4					
17	C3.1					
17	*					
19	*					
20	C4.8					
20	C3.0					
20	C1.8					
20	C1.2					
22	C1.9					
22	C3.2					
22	*					
23	C2.6					
27	C1.1					
28	C2.2					
29	C2.5					

VLF flare activity 2005/11.



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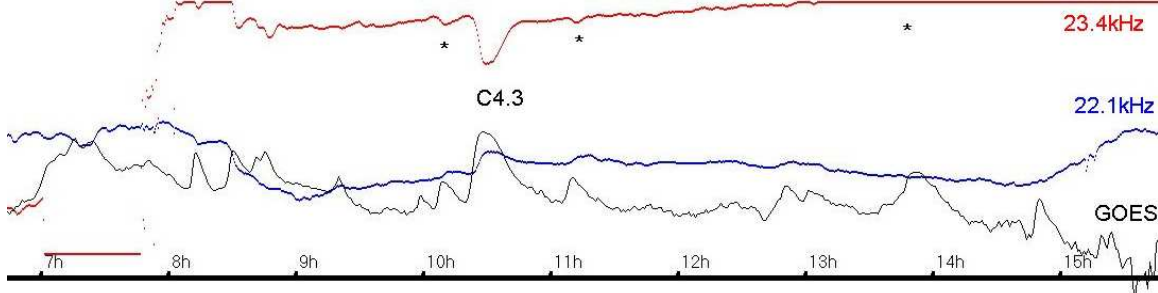
For observers in the UK, daylength and thus observing time is much reduced at this time of year. I find that only about 6 hours are useable for recording SIDs. Added to this reduction, the low altitude of the sun in the sky reduces the ionospheric effect of flares. The result is that flares nearer to midday give rise to good SIDs, while those earlier or later in the day produce much weaker SIDs. With this in mind, Mark Edwards has produced a chart showing just how much stronger a midday-flare needs to be each month, compared to one on June 21st. His calculations are based on a latitude in the English Midlands. The effect is more pronounced the further north the observer.



The overall effect is that the activity chart is skewed with less seen during the winter and more seen during the summer months. It is not clear how to correct for this, as the small numbers involved are not suited to simple statistics.

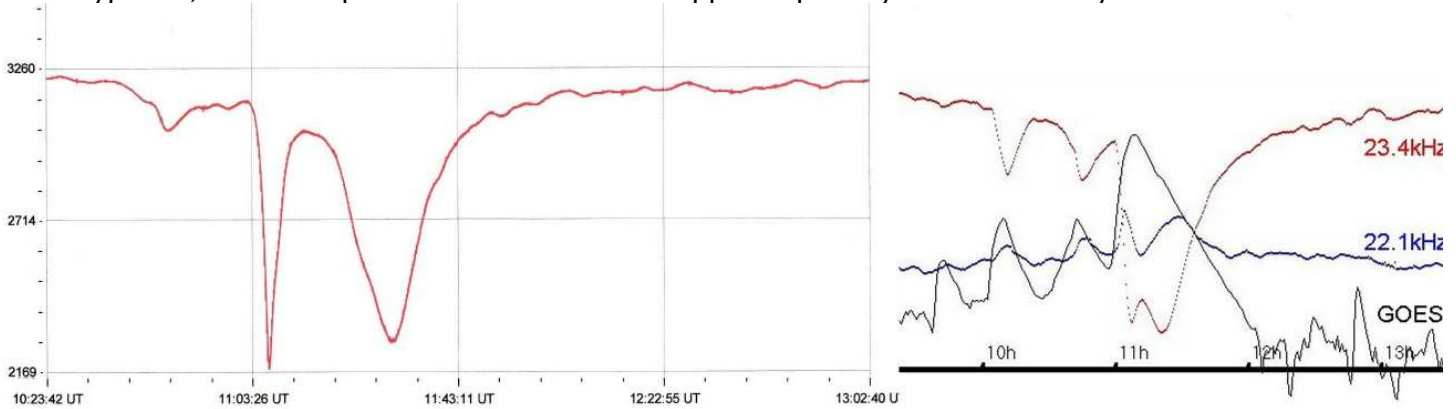
Looking at the Space Weather Prediction Centre flare lists, we have missed several smaller C-class flares this month that we might have recorded during the summer. However, there are no X-class flares shown, and activity is genuinely down on previous months. Any suggestions for improving the statistics would be most welcome.

There are however still X-ray events in the GOES data that do not appear as flares in the SWPC lists, and that we detect as SIDs. Notable was November 1st, when three such events have been recorded.



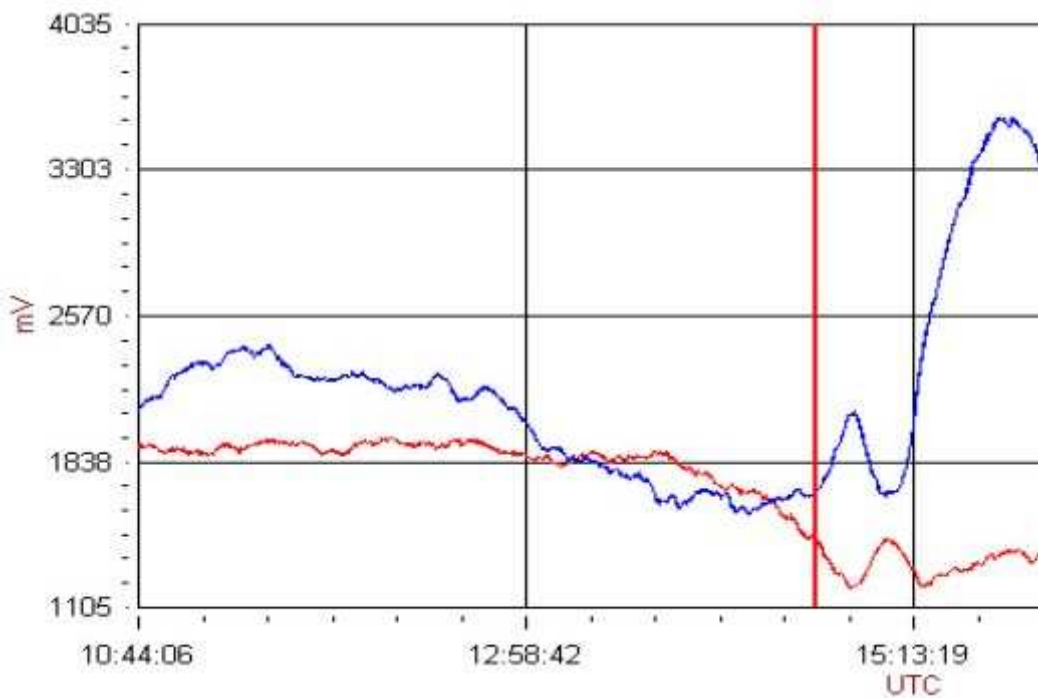
The last one is not recorded in my chart, above, as the receiver has saturated. I do not make any adjustments to the receiver, but often record high day time signal levels through the winter months.

The M2.5 flare on November 3rd caused some confusion. This was recorded by some observers as a ‘spike and wave’ type SID, where the peak disturbance has the opposite polarity to that normally seen.



I have combined my own chart (on the right) with that from Colin Clements (left). My 23.4kHz signal shows a very small rise in signal strength at the peak disturbance, timed at 11:13UT. Colin’s 23.4kHz recording shows the inverted peak rising back almost to its original level. This point is also timed at 11:13UT. The GOES trace helps to clarify where the true X-ray maximum is. Both charts also show the SID at 10:45UT marked ‘*’ in the list, but not included in the SWPC flare list. It appears to be of a similar magnitude to the C3.4 flare at 10:12UT.

Martyn Kinder obtained a very odd response from the C7.9 flare on the 16th:



This SID is badly distorted due to its timing just before sunset. The peak (15:05UT) is the dip in the blue trace, which is then followed immediately by the rise towards nighttime levels.

MAGNETIC DATA

Most of the magnetic activity in November was very gentle. There were no Solar Flare Effects from energetic flares. Although four Sudden Storm Commencements are listed in the BGS bulletin, none of these show up

clearly in our recordings. The disturbance on the 28th was from a CME seen in satellite images on the 26th. A coronal hole high speed stream from the end of October caused some disturbance through into the 1st and 2nd. Magnetic data provided by Colin Clements and John Cook.

ROTATION	KEY:	DISTURBED.	ACTIVE	SFE	B, C, M, X = FLARE MAGNITUDE.	Synodic rotation start (carrington's).																										
2407	F	18	19	20	21	22	23	24	25	26	27	28	29	30	31	2010 January	1	2	3	4	5	6	7	8	9	10	11	12	13			
2408	F	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	2093	2010 February	1	2	3	4	5	6	7	8	9		
2409	F	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	2094	2010 March	1	2	3	4	5	6	7	8			
2410	F	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	2095	2010 April	1	2	3	4		
2411	F	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	2096	May	1	
2412	F	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	2097			
2413	F	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	2010 June	2098		
2414	F	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	2010 July	2099		
2415	F	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	2010 August	2100		
2416	F	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	2010 September	2101		
2417	F	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	2010 October	2102	
2418	F	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	2010 November	2103		
2419	F	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	2010 December	2104	
2420	F	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	2105			
2421	F	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	2011 January	2106		
2422	F	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	2011 February	2107		
2423	F	24	25	26	27	28	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	2011 March	2108		
2424	F	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	2011 April	2109		
2425	F	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	2011 May	2110	
2426	F	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	2011 June	2111		
2427	F	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	2011 July	2112	
2428	F	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	2011 August	2113		
2429	F	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	2114			
2430	F	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	2011 September	2115		
2431	F	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	2011 October	2116	
2432	F	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	2011 November	2117		
2433	F	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	2011 December	2118	