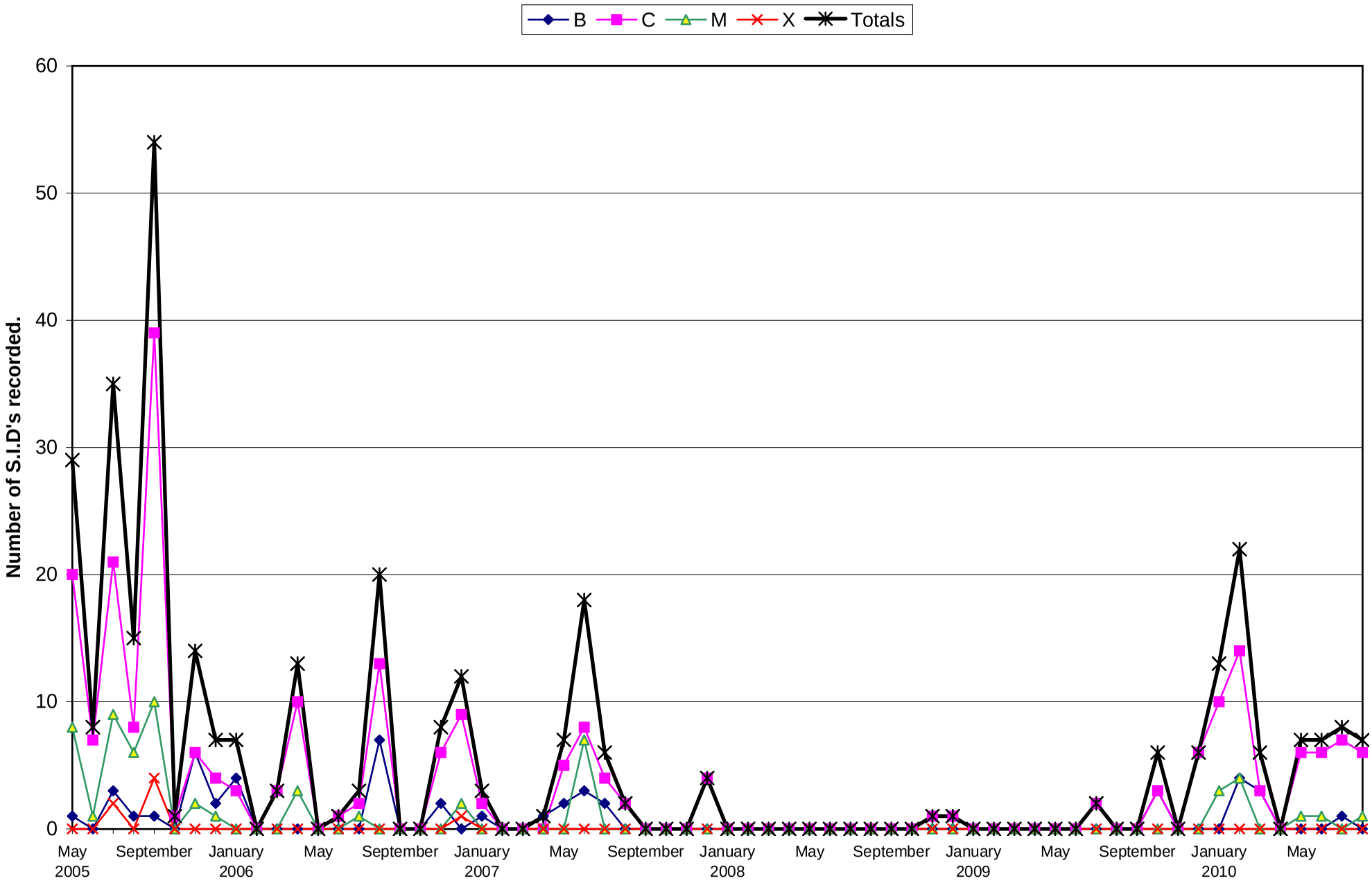
2010 AUGUST

DAY	Xray class	Observers	John Cook (23.4/*22.1* kHz) Tuned radio frequency receiver, 0.58m frame aerial. START	PEAK	END (UT)		Roberto Battaiola (21.75kHz) Modified AAVSO receiver. START	PEAK	END (UT)	Nigel Curtis (23.4kHz) Gyrator receiver, shielded loop aerial. START	PEAK	END (UT)	Bob Middlefell (22.1kHz) Tuned radio frequency receiver, 0.5m frame aerial. START	PEAK	END (UT)	Mark Edwards (22.1kHz) Spectrum Lab / PC 2m loop aerial. START	PEAK	END (UT)	
1	C3.2	4	*07:50*	*08:35*	*?*	-										07:55	09:01	09:58	3
7	**M1.0**	4	18:07	18:20	18:44	2										18:10	18:23	18:45	2
14	C4.4	6	09:45	10:07	10:30	2										09:45	10:07	11:39	3
14	C1.6	1														18:06	18:11	18:18	1-
15	C5.4	5														18:25	18:£1	18:46	1
16	C1.4	4	16:37	16:41	16:50	1-													
18	C4.5	1																	

DAY			Colin Clements (23.4kHz) AAVSO receiver, 0.76m screened loop aerial. START	PEAK	END (UT)		Karen Holland (19.5kHz) Tuned radio frequency receiver, 0.58m frame aerial. START	PEAK	END (UT)	Mike King (20.9kHz) AAVSO receiver. Tuned loop aerial. START	PEAK	END (UT)	John Wardle (23.4kHz) Gyrator MKII receiver, 1m loop aerial. START	PEAK	END (UT)	Peter King (18.3kHz) Own designed receiver, 1.4m loop aerial. START	PEAK	END (UT)	
1	C3.2															07:55	08:25	09:35	3
7	**M1.0**															17:55	18:25	18:45	2+
14	C4.4		09:39	10:14	11:14	3										09:40	10:00	10:30	2+
14	C1.6																		
15	C5.4		18:22	18:32	18:47	1										18:25	18:30	18:40	1-
16	C1.4															16:35	16:40	16:50	1-
18	C4.5																		

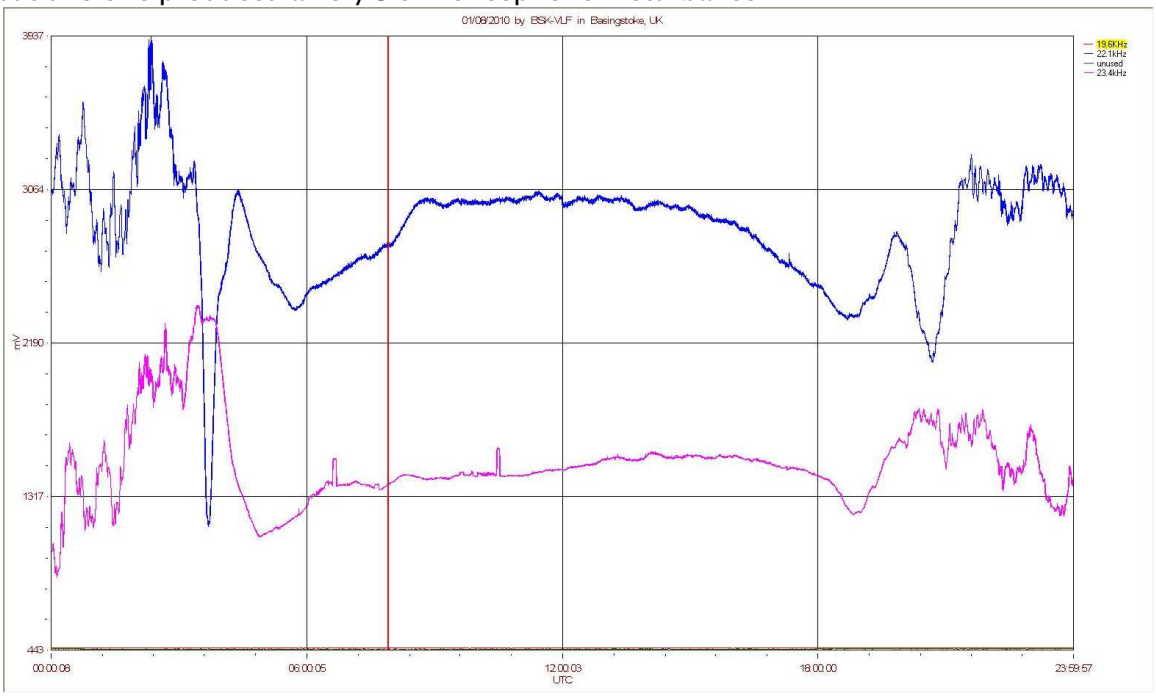
DAY			Paul Hyde (22.1kHz) Tuned radio frequency receiver, 0.96m frame aerial. START	PEAK	END (UT)		Gordon Fiander (18.3kHz) PC sound card. START	PEAK	END (UT)	John Elliott (18.3kHz) Tuned radio frequency receiver, 0.5m frame aerial. START	PEAK	END (UT)	Martyn Kinder (18.2kHz) Tuned radio frequency receiver, 0.58m frame aerial. START	PEAK	END (UT)		Mark Horn (23.4kHz) Tuned radio frequency receiver, 0.58m frame aerial. START	PEAK	END (UT)
1	C3.2		07:41	08:22	08:44	2+													
7	**M1.0**		18:09	18:25	18:48	2													
14	C4.4		09:45	10:06	11:00	2+							09:37	10:04	?	-			
14	C1.6																		
15	C5.4		18:25	18:31	18:42	1-							18:25	18:32	18:47	1			
16	C1.4		16:38	16:45	17:02	1							16:35	16:46	17:05	1+			
18	C4.5												04:45	?	?	-			

There were some unusual recordings this month, details shown further on. In addition to those listed above, there were numerous B-class flares in the first half of August, with further C-class events over night. Nothing is reported in the GOES record for the 19th to 25th, and the 29th. The most energetic event of the month was the M1 flare on the 7th.

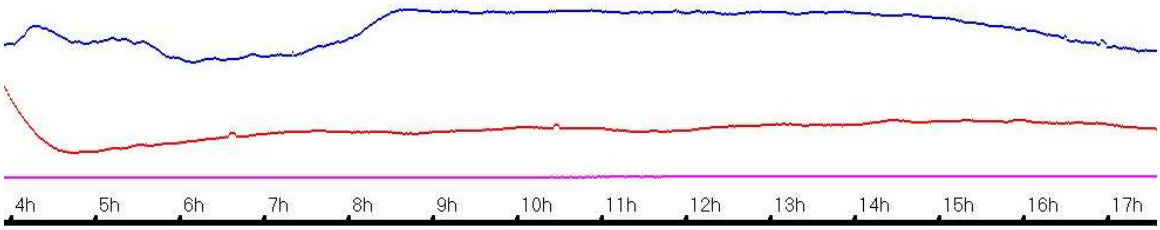

VLF flare activity 2005/10.
B
C
M
X
Totals
Number of S.I.D's recorded.
60
50
40
30
20
10
0
May
2005
September
January
2006
May
September
January
2007
May
September
January
2008
May
September
January
2009
May
September
January
2010
May

August events.

The sun produced several rather unusual flares during August, the first being a C3.2 flare on the 1st. The GOES data records it as a slow flare. We are used to seeing sudden changes in ionisation from flares, giving rise to our Sudden Ionospheric Disturbances but this one produced a very Slow Ionospheric Disturbance.

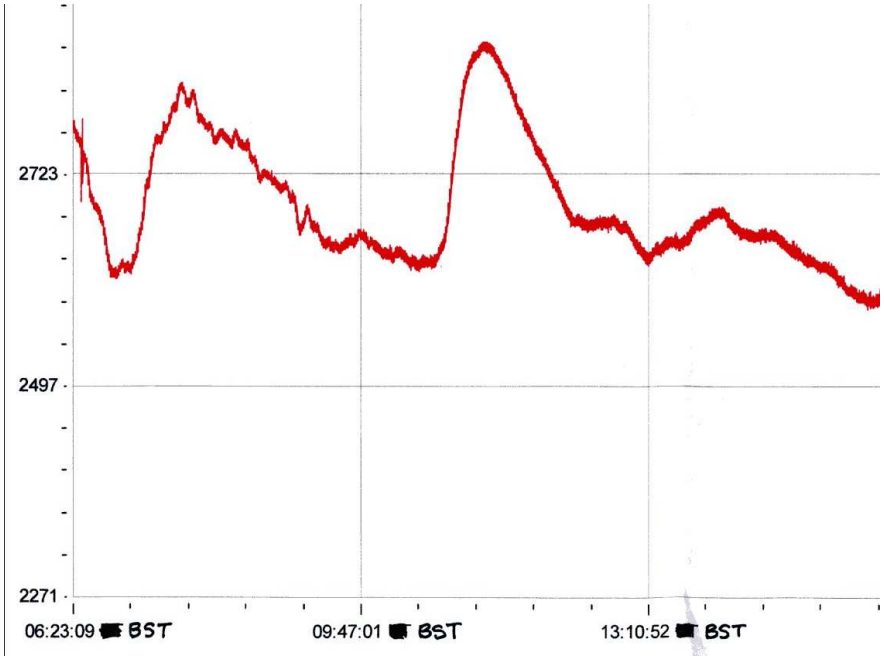


This chart by Paul Hyde shows its untypical recording. The blue trace at 22.1kHz shows a gentle rise and decay starting at 07:41UT. The red trace at 23.4kHz shows much less effect.

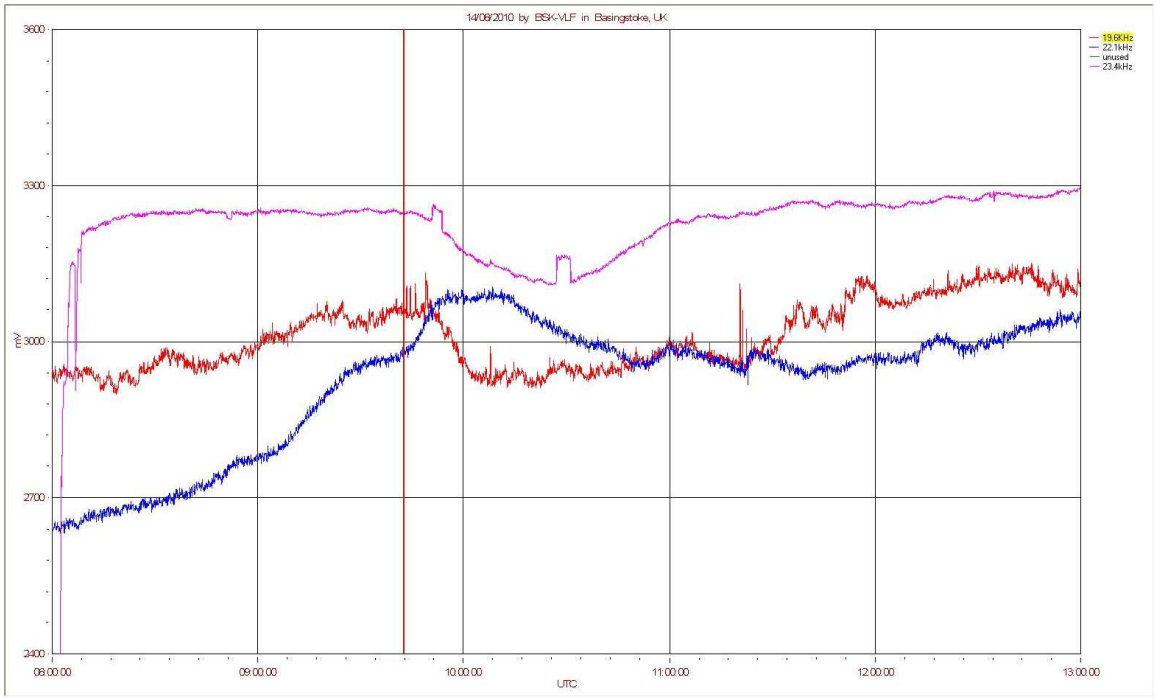


My recording shows similar results. Blue is again 22.1kHz, showing a gentle rise followed by a nearly flat signal for the next 5 hours. 23.4kHz (red) is not recorded at all. The space weather centre indicates that region 1092 was responsible for this long duration slow flare, which also produced a type IV radio sweep, an 890sfu Tenflare, and a full halo CME. A disappearing solar filament shortly before this event adds to the general confusion!

The C4.4 flare on the 14th. caused a similarly unusual SID.

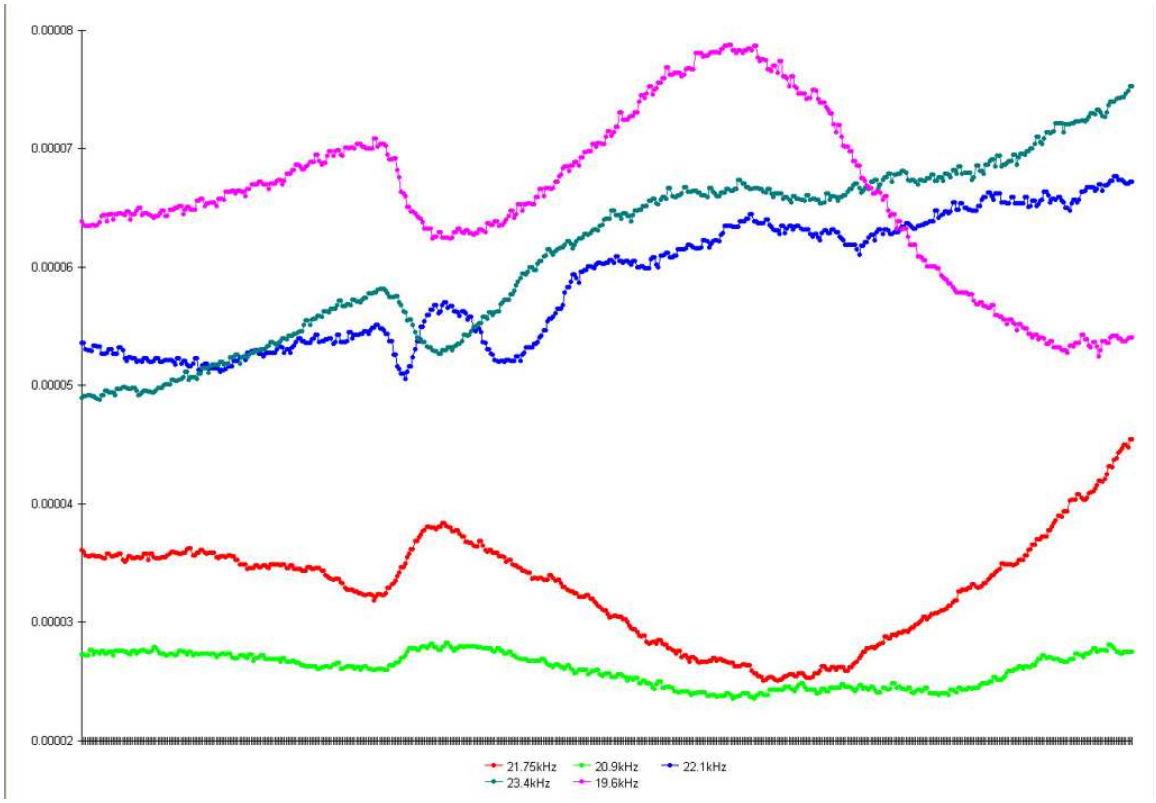


The chart from Colin Clements shows a nearly symmetrical response to this flare at 23.4kHz.



Paul Hyde recorded this chart, red is 19.6kHz, blue 22.1, and magenta is 23.4kHz. The space weather centre described this as a C4 slow flare, with a type II radio sweep, a proton event, and full halo CME.

The flare on the 15th. was also listed as a slow flare, but produced a more distinctive SID as shown in Mark Edwards recording:



Magenta is 19.6kHz, green is 20.9, Red is 21.75, blue is 22.1, and cyan is 23.4kHz.

Smoke detectors.
Not another way to detect solar flares, but rather an important way to protect us and our radio equipment. In a very near miss, one of our observers was awakened by a smoke detector to find a thick grey fog enveloping the radio room. It seems that a fault had developed in an old oscilloscope which was gently steaming away close to catching fire. The smell of burning had saturated the contents and decoration of the room, requiring re-painting and a complete clean-out. Luckily that was the extent of the damage.

I recently had a free (courtesy of the local council) fire check of the house. My old smoke detector was replaced with a new one, and my VLF receiver system was closely inspected before being given the OK. If your council offers this service, then it is well worth taking up. It is also worth fitting thermal fuses to power supplies, so that any over-heating is quickly detected. Rather lose an observation than risk a fire!