

## BAA Radio Astronomy Group.

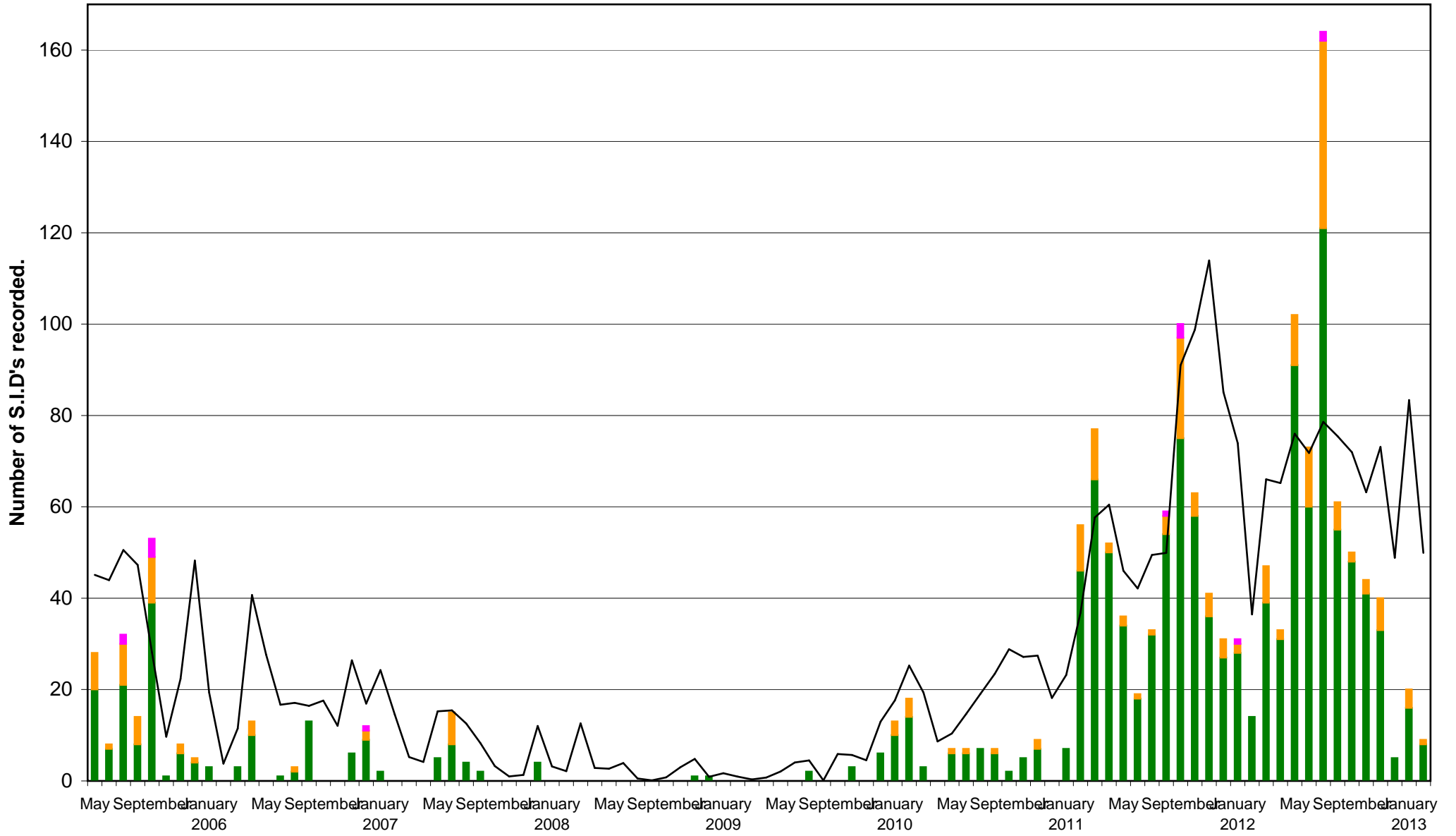
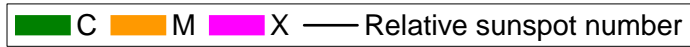
2013 FEBRUARY

DAY	Xray class	Observers	John Cook (23.4kHz/22.1kHz)	Roberto Battaiola (20.3kHz)	Paul Hyde (22.1kHz)	Bob Middlefell (22.1kHz)	Mark Edwards (24.0/20.27kHz)
			Tuned radio frequency receiver, 0.58m frame aerial.	Modified AAVSO receiver.	Tuned radio frequency receiver, 0.96m 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)
5	C6.3	4	08:15 08:19 08:28 1-	08:13 08:21 08:33 1			08:15 08:20 08:30 1-
17	C2.5	3	15:37 15:41 ? -	15:39 15:42 15:48 1-			
17	<b>M1.9</b>	5	15:46 15:53 16:08 1	15:49 15:52 16:00 1-	15:47 15:52 16:20 2		
19	C2.1	1					
20	C8.2	6	11:10 11:12 11:47 2	11:09 11:13 11:37 1+	11:10 11:13 11:54 2		
20	C3.0	5	14:53 14:56 14:59 1-	14:53 14:58 15:09 1-	14:55 14:57 15:10 1-		
21	B9.9	1			08:55 09:00 09:05 1-		
22	C1.0	1			12:20 12:23 12:51 1+		
23	C4.7	4	16:00 16:06 16:20 1	16:01 16:08 16:19 1-	16:00 16:06 16:25 1		
24	C2.6	5	14:22 14:32 14:48 1+		14:17 14:31 15:09 2+		14:21 14:32 15:03 2

DAY	Xray class	Observers	Colin Clements (23.4kHz)	Peter King (18.3kHz)	Tarif Rashid Santo (19.8kHz)	John Wardle (19.6/23.4kHz)	Steve Parkinson (23.4kHz)
			AAVSO receiver, 0.76m screened loop aerial.	Own designed receiver, 1.4m loop aerial.	Spectrum Lab, Half-wave dipole. 15m	PC soundcard, long wire 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)
5	C6.3					08:13 08:19 08:25 1-	
17	C2.5					15:40 15:46 15:48 1-	
17	<b>M1.9</b>					15:45 15:53 16:16 1+	15:47 15:51 16:10 1
19	C2.1						10:35 10:47 11:05 1+
20	C8.2		11:08 11:09 12:08 2+			11:08 11:11 11:39 1+	11:10 11:13 11:45 2
20	C3.0					14:53 14:58 15:05 1-	14:55 14:57 15:10 1-
21	B9.9						
22	C1.0						
23	C4.7					15:57 16:08 16:18 1	
24	C2.6					14:16 14:35 14:55 2	14:19 14:32 14:50 1+

DAY	Xray class	Observers	Simon Dawes (various)	Gordon Fiander (19.6/22.1kHz)	John Elliott (21.7kHz)	Martyn Kinder (19.6kHz/22.1kHz)	Mark Horn (23.4kHz)
			PC soundcard and TRF receiver with 1m loop 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)
5	C6.3						
17	C2.5						
17	<b>M1.9</b>						
19	C2.1						
20	C8.2						
20	C3.0						
21	B9.9						
22	C1.0						
23	C4.7						
24	C2.6						

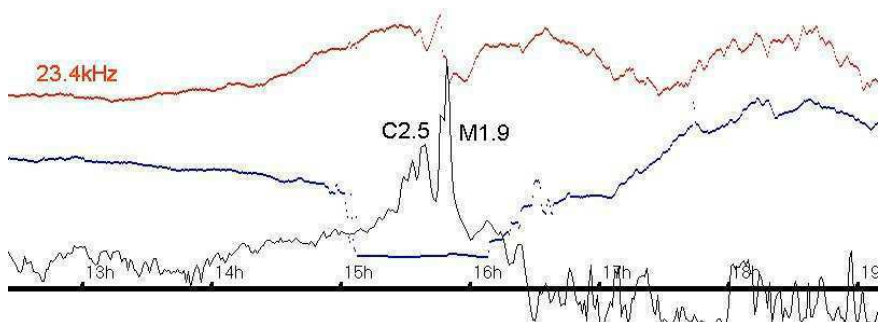
### VLF flare activity 2005/12.



## 2013 FEBRUARY

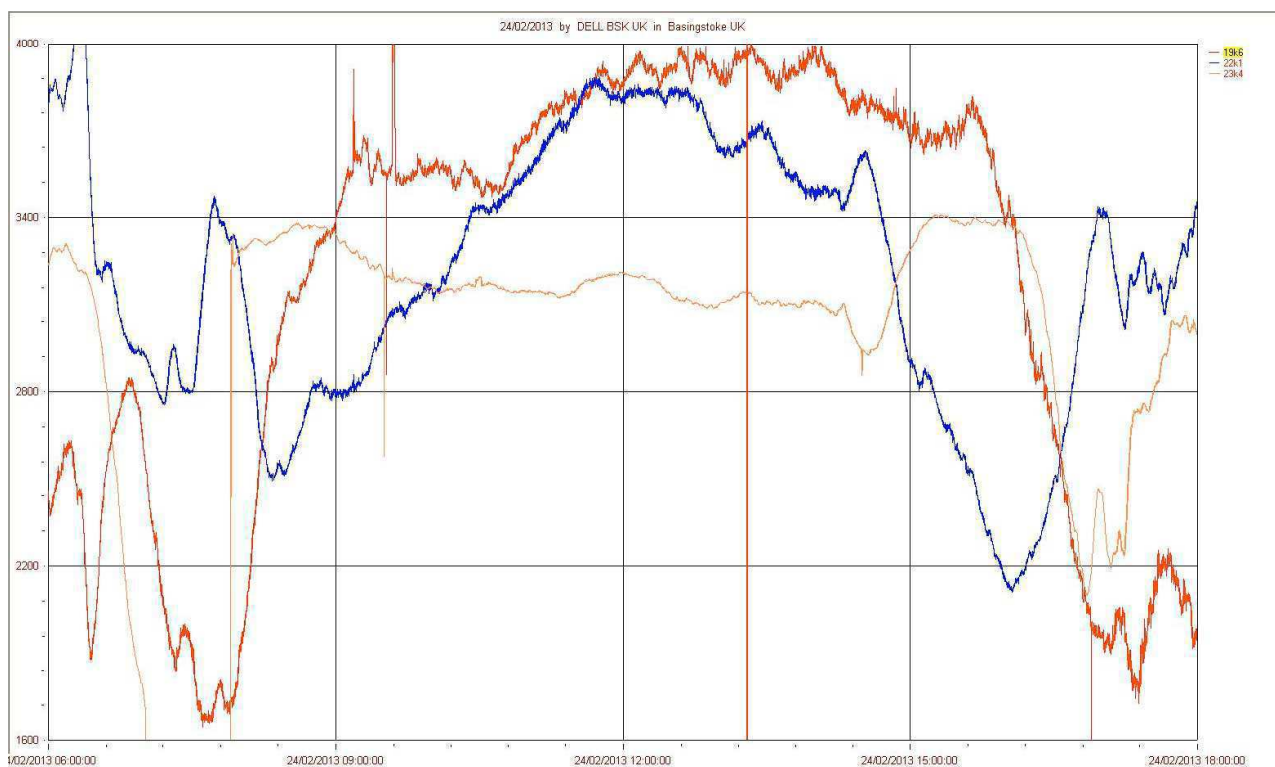
February has been another very quiet month, with SID counts down to a level last seen in 2011 January. Looking through the X-ray data from GOES, we have recorded a good sample of the flares, including the only M-class flare of the month. There were no X-class flares, and many days saw only B-class activity.

The M1.9 flare on the 17<sup>th</sup> was well recorded, although rather late in the afternoon at this time of year. The GOES data shows several peaks in X-ray flux prior to the main event:

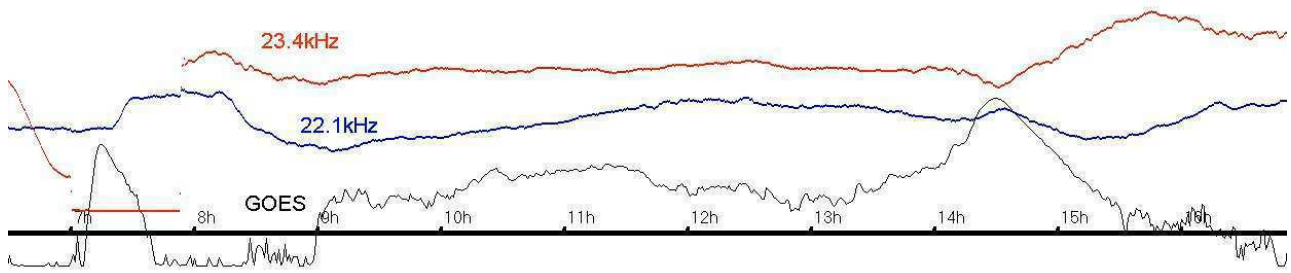


The C2.5 flare has three peaks, dropping away again before the main M1.9 peak. The SID at 23.4kHz is clear, but difficult to measure without the added GOES detail. The C8.2 flare on the 20<sup>th</sup> was much better timed near midday, and gave a clearer SID.

Both of these were fast flares. In contrast, the C2.6 flare on the 24<sup>th</sup> was very slow, and almost symmetrical in its X-ray appearance. The SID was nearly lost in the late afternoon.



This chart by Paul Hyde shows 19.6kHz in red, 22.1kHz in blue, and 23.4kHz in yellow. My own recording on the next page has the GOES data added, to highlight the flare's timing:

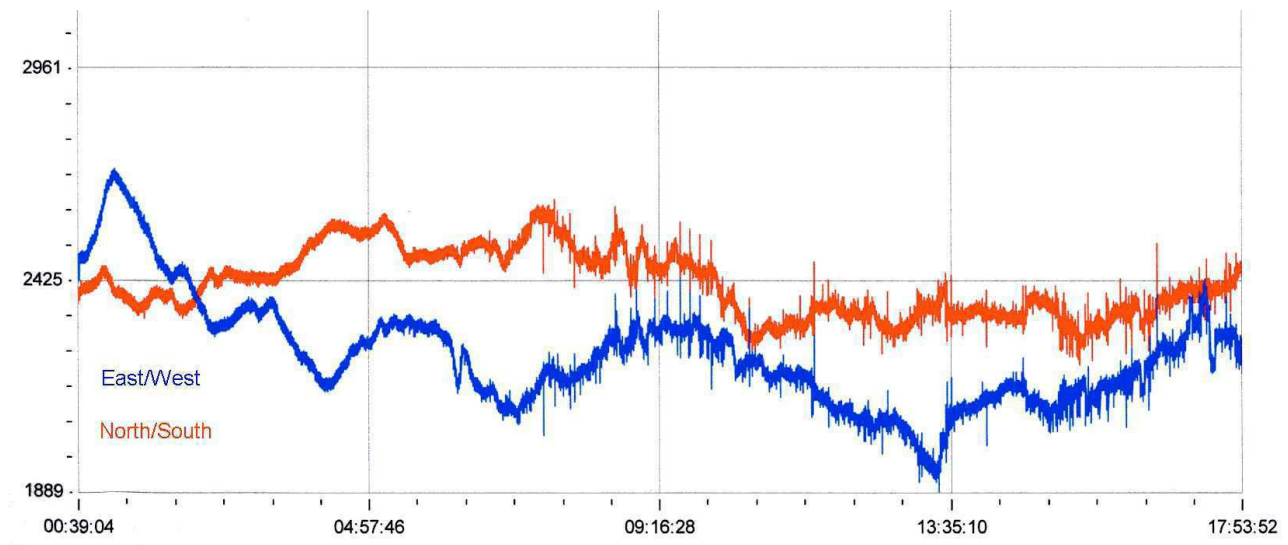


The SID is visible just before the sunset takes over.

## MAGNETIC OBSERVATIONS

Most of the magnetic activity seems to have been caused by very weak filament eruptions and minor CMEs. Just one SSC is listed in the BGS bulletin, at 12:09 on the 16<sup>th</sup>. This is barely visible in the reports received. Very low level disturbance lasted until about 19:00 on the 16<sup>th</sup>. SWPC does not list a particular flare as being responsible for the CME, as there were a number of minor events present at the time.

The most disturbed period started late on the 13<sup>th</sup> and continued through the night into the 14<sup>th</sup>. Colin Clements has sent his recording:



This shows activity on the 14<sup>th</sup>. The SWPC indicates that this was due to a prolonged period of sustained negative Bz, although the reason for this is not given. My own recording shows a peak disturbance of about 70nT.

Magnetic reports received from Colin Clements, Gonzalo Vargas and John Cook.

Please note that my E-mail address has now changed. Reports should be sent to [jacook@jacook.plus.com](mailto:jacook@jacook.plus.com)

BAA ROTATION	Radio Astron KEY:	OJD	DISTURBED.	ACTIVE	SFE	BARTHEL DIAGRAM																Synodic rotation start (carrington's).																																														
						B, C, M, X = FLARE MAGNITUDE.																																																														
2407	F	18	19	20	21	22	23	24	25	26	27	28	29	30	31	2092	1	2	3	2093	4	5	6	7	8	9	10	11	12	13																																						
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