BAA Radio Astronomy Group. **2011 OCTOBER**

			John Cook (23.4kHz/*22.1kHz*)				Roberto Battaiola (20.27kHz)				Andrew Lutley (23.4kHz)				Bob Middlefell (22.1kHz)				Mark Edwards (**22.1**/24.0/*37.5kHz*)			
	Xray class	Observers	Tuned radio frequency receiver, 0.58m frame aerial.				Modified AAVSO receiver.				Tuned radios frequency receiver, 0.5m frame aerial.				Tuned radio frequency receiver, 0.5m frame aerial.				Spectrum Lab / PC 2m loop aerial.			
DAY			START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)	
1	?	1																	*09:11*	*09:40*	*?*	-
1	**M1.2**	7	09:22	10:10	11:38	3+													09:20	10:03	12:00	3+
1	*	1																	*10:54*	*11:11*	*12:05*	*2+*
1	C1.0	2																	12:35	12:56	14:11	3
2	C1.0	1																				
2	C2.6	6	15:09	15:13	15:23	1-													15:11	15:14	15:45	2
2	*	1																	15:46	15:47	16:15	1+
2	C1.3	1																				
2	**M1.3**	5																	17:22	17:26	18:06	2
2	C7.6	1																				
4	C7.3	6	09:13	09:21	10:30	2+													***09:01***	***09:40***	***11:20***	***3+***
5	C2.3	2																				
5	?	2																	10:47	10:58	?	-
5	C6.1	8	10:47	10:59	?	-													11:13	11:24	12:25	2+
5	C9.2	9	12:40	13:04	14:00	2+													12:39	12:53	15:28	3+
5	B8.7	1																				
6	C1.9	1																				
9	C1.7	4																	13:27	13:33	14:35	2+
10	C1.0	1																				
10	C1.4	3																	11:39	11:40	12:20	2
10	C4.5	5	*14:33*	*14:36*	*15:05*	*1+*													14:34	14:37	15:22	2+
11	*	1																				
12	C1.7	3																				
12	C1.7	4																	10:39	10:40	10:51	1-
12	C5.3	7	11:34	11:41	12:12	2													11:34	11:42	12:21	2+
12	C4.3	7	*14:18*	*14:24*	*14:50*	*1+*													14:17	14:25	15:17	2+
12	C1.1	1																				
12	C1.3	2																				
12	C2.7	1																	16:42	16:45	?	-
13	C1.0	1																				
13	C2.2	1																				
13	C1.6	1																	15:17	15:19	15:29	1-
14	C1.1	1																				
14	C1.1	4																	15:12	15:13	15:27	1-
14	C1.3	1																				
15	C1.1	1																				
15	C1.6	4																	12:39	12:42	12:45	1-
15	C2.0	6																	13:21	13:28	13:40	1
15	?	1																	14:00	14:05	?	-
15	C5.0	6																	14:08	14:15	14:48	2
15	C2.3	3																	16:16	16:23	16:39	1
15	C1.3	1																				
16	C2.0	3																	*09:38*	*09:43*	*09:53*	*1-*
16	C1.8	2																	12:17	12:20	12:30	1-
16	?	1																	*12:40*	*12:43*	*12:53*	*1-*
16	C1.4	1																				
16	C3.7	6																	14:33	14:36	14:57	1
16	C6.3	6																	15:01	15:14	15:53	2+
16	C4.4	5																	15:56	15:58	16:17	1
16	C1.9	1																				
17	C2.1	6	08:27	08:28	08:35	1-													*08:26*	*08:29*	*08:33*	*1-*
17	?	1																	*09:03*	*09:06*	*09:13*	*1-*
17	C1.8	3																	*09:31*	*09:34*	*09:39*	*1-*
17	?	1																	*11:38*	*11:44*	*11:55*	*1-*
19	?	1																	13:07	13:11	13:27	1
19	?	1																	13:33	13:38	13:56	1
19	C2.4	2																	16:33	16:35	16:42	1-
20	?	1																	**11:35**	**11:42**	**11:47**	**1-**
20	C5.4	6	15:37	15:41	15:52	1-													15:37	15:40	16:21	2
21	C2.4	4																	*08:56*	*09:03*	*09:06*	*1-*
21	**M1.3**	8	12:56	13:05	13:41	2													12:56	13:02	13:41	2
21	C1.5	4																	13:42	13:46	13:59	1-
21	?	1																	*14:19*	*14:29*	*?*	-
22	**M1.3**	5	10:12	11:00	14:20	3+													10:10	10:51	?	-
22	C4.1	4	*15:51*	*15:54*	*16:03*	*1-*													15:17	15:22	15:45	1+
23	?	1																	11:01	11:03	11:16	1-
23	C2.5	7	11:46	11:50	12:04	1-													11:46	11:49	11:59	1-
26	C1.2	1																				
28	C1.7	3	11:59	12:05	12:24	1																
29	C1.9	6	09:20	09:22	09:29	1-													09:20	09:22	09:27	1-
29	C1.0	1																	14:28	14:33	14:34	1-
29	C3.0	3																	14:49	14:54	15:10	1
29	C1.2	1																				
30	C2.4	4	09:34	09:39	09:48	1-																
30	C2.1	4	10:07	10:10	10:17	1-																
30	C1.5	4					14:51	14:54	14:58	1-												
31	?	4	13:43	13:46	14:03	1													**13:43**	**13:49**	**13:59**	**1-**
31	**M1.1**	7	14:58	15:05	15:35	2	14:59	15:07	15:31	1+									**14:57**	**15:05**	**15:31**	**2**

BAA Radio Astronomy Group. **2011 OCTOBER**

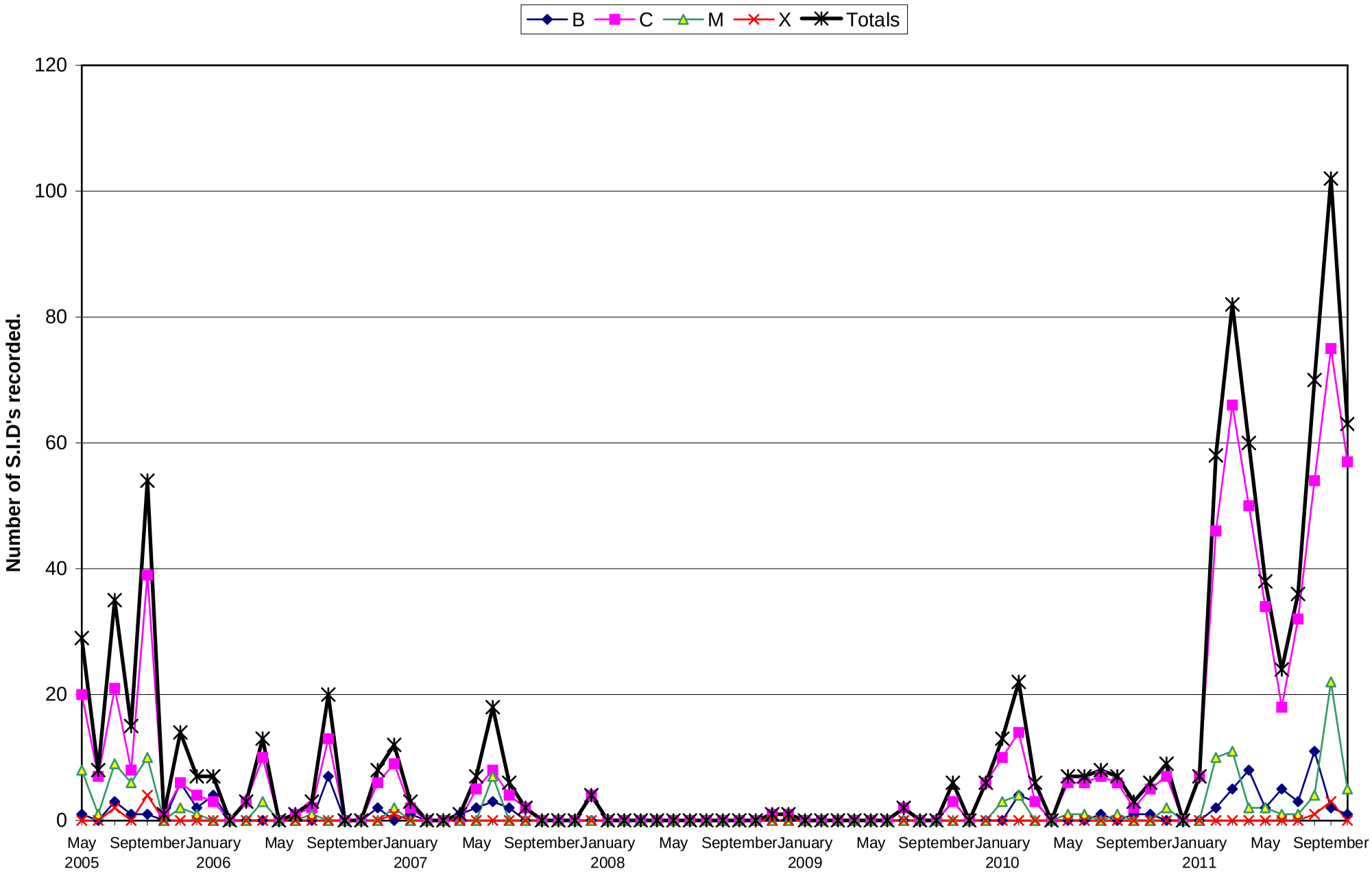
			Colin Clements (23.4kHz)				Peter Meadows (23.4kHz)				Mike King (20.9kHz)				John Wardle (19.6/23.4kHz)				Peter King (18.3kHz)			
			AAVSO receiver, 0.76m screened loop aerial.				Tuned radio frequency receiver, 0.58m frame aerial.				AAVSO receiver. Tuned loop aerial.				PC soundcard, long wire aerial.				Own designed receiver, 1.4m loop aerial.			
DAY			START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)	
1	?																					
1	**M1.2**		09:33	10:04	10:47	2+									09:48	10:02	10:40	2+	08:55	10:00	10:15	2+
1	*																					
1	C1.0																		12:35	12:40	12:45	1-
2	C1.0																		08:15	08:25	08:30	1-
2	C2.6														15:09	15:12	15:18	1-	15:05	15:10	15:15	1-
2	*																					
2	C1.3																		16:50	16:55	17:00	1-
2	**M1.3**																		17:20	17:24	17:27	1-
2	C7.6																					
4	C7.3														09:12	09:38	10:06	2+	08:55	09:25	10:00	2+
5	C2.3																					
5	?																					
5	C6.1		10:51	11:26	12:43	3									11:13	11:26	11:47	2	10:45	11:22	11:38	2+
5	C9.2		12:43	12:53	13:47	2+									12:38	12:50	13:25	2+	12:35	12:43	12:57	1
5	B8.7																					
6	C1.9																		09:15	09:45	10:10	2+
9	C1.7																		13:24	13:30	13:35	1-
10	C1.0																		09:10	09:20	09:30	1
10	C1.4																					
10	C4.5		14:35	14:39	14:54	1																
11	*																		14:30	14:35	14:38	1-
12	C1.7																		09:45	09:50	09:55	1-
12	C1.7																		10:35	10:40	10:50	1-
12	C5.3														11:33	11:41	12:31	2+	11:30	11:40	11:45	1-
12	C4.3		14:17	14:23	14:57	2									14:16	14:28	14:55	2				
12	C1.1																		15:20	15:23	15:25	1-
12	C1.3																		16:27	16:30	16:35	1-
12	C2.7																					
13	C1.0																		09:38	09:45	10:00	1
13	C2.2																		11:30	12:25	12:55	2+
13	C1.6																					
14	C1.1																		08:50	08:55	09:00	1-
14	C1.1																		15:10	15:15	15:19	1-
14	C1.3																					
15	C1.1																		11:08	11:25	11:50	2
15	C1.6																		12:35	12:40	12:43	1-
15	C2.0		13:20	13:31	13:58	2									13:21	13:30	13:52	1+	13:20	13:25	13:34	1-
15	?																					
15	C5.0														14:00	14:17	14:45	2	13:35	14:15	14:20	2
15	C2.3																		16:10	16:20	16:25	1-
15	C1.3																		17:25	17:30	17:45	1
16	C2.0																		09:30	09:44	09:55	1
16	C1.8																		11:55	12:20	12:35	2
16	?																					
16	C1.4																		13:50	13:55	13:59	1-
16	C3.7														14:31	14:40	14:52	1	14:30	14:35	14:50	1
16	C6.3														15:01	15:14	15:34	2	15:05	15:15	15:24	1
16	C4.4														15:55	16:00	16:06	1-	15:55	15:56	16:00	1-
16	C1.9																		17:30	17:35	17:40	1-
17	C2.1														08:26	08:30	08:34	1-	08:25	08:29	08:31	1-
17	?																					
17	C1.8																		09:30	09:32	09:35	1-
17	?																					
19	?																					
19	?																					
19	C2.4																					
20	?																					
20	C5.4														15:37	15:42	15:54	1-	15:35	15:40	15:45	1-
21	C2.4																		08:55	09:00	09:05	1-
21	**M1.3**		12:58	13:00	13:18	1									12:55	13:00	13:46	2+	12:55	13:00	13:10	1-
21	C1.5																		13:40	13:45	13:50	1-
21	?																					
22	**M1.3**																		10:00	11:10	13:10	3+
22	C4.1																		15:15	15:20	15:30	1-
23	?																					
23	C2.5		11:46	11:55	12:11	1													11:40	11:50	11:55	1-
26	C1.2																		09:10	10:00	10:25	2+
28	C1.7																		11:50	12:20	12:45	2+
29	C1.9														09:20	09:23	09:34	1-	09:20	09:22	09:25	1-
29	C1.0																					
29	C3.0														14:50	14:52	14:54	1-				
29	C1.2																					
30	C2.4																		09:25	09:40	09:55	1+
30	C2.1														10:07	10:11	10:14	1-	10:05	10:10	10:15	1-
30	C1.5																		14:45	14:50	14:59	1-
31	?																					
31	**M1.1**																		14:55	15:10	15:30	2

BAA Radio Astronomy Group. **2011 OCTOBER**

			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.			
DAY			START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)		START	PEAK	END (UT)	
1	?																					
1	**M1.2**		08:58	10:02	11:26	3+									*09:00*	*09:23*	*10:02*	*2+*				
1	*																					
1	C1.0																					
2	C1.0																					
2	C2.6		15:10	15:14	15:39	1+									15:09	15:13	15:25	1-				
2	*																					
2	C1.3																					
2	**M1.3**		17:21	17:25	?	-									*17:20*	*17:24*	*17:27*	*1-*				
2	C7.6																					
4	C7.3		09:01	09:27	11:02	3									08:56	09:24	?	-				
5	C2.3		07:42	07:47	07:57	1-									*07:41*	*07:46*	*07:49*	*1-*				
5	?																					
5	C6.1		10:46	11:25	12:35	3									10:46	10:53	11:34	2+				
5	C9.2		12:39	12:49	14:00	2+									12:38	12:41	12:54	1-				
5	B8.7																					
6	C1.9																					
9	C1.7		13:26	13:30	13:57	1+																
10	C1.0																					
10	C1.4		11:35	11:42	12:04	1+																
10	C4.5		14:33	14:37	15:04	1+																
11	*																					
12	C1.7		09:48	09:52	10:10	1									09:49	09:52	09:59	1-				
12	C1.7		10:37	10:43	11:07	1+									10:35	10:44	11:00	1				
12	C5.3		11:33	11:39	12:20	2+									11:32	11:40	11:59	1+				
12	C4.3		14:17	14:24	14:52	2									14:17	14:24	14:55	2				
12	C1.1																					
12	C1.3																					
12	C2.7																					
13	C1.0																					
13	C2.2																					
13	C1.6																					
14	C1.1																					
14	C1.1														*15:11*	*15:15*	*15:20*	*1-*				
14	C1.3																					
15	C1.1																					
15	C1.6		12:39	12:41	12:48	1-									12:38	12:41	?	-				
15	C2.0		13:22	13:29	13:43	1									13:21	13:28	13:50	1+				
15	?																					
15	C5.0		14:00	14:17	14:45	2									13:59	14:15	14:25	1+				
15	C2.3														*16:15*	*16:19*	*16:22*	*1-*				
15	C1.3																					
16	C2.0		09:35	09:45	?	-																
16	C1.8																					
16	?																					
16	C1.4																					
16	C3.7		14:30	14:38	14:58	1+									14:31	14:36	14:44	1-				
16	C6.3		15:05	15:14	15:28	1									15:05	15:13	15:25	1				
16	C4.4		15:55	15:59	16:23	1+									*15:54*	*15:58*	*16:03*	*1-*				
16	C1.9																					
17	C2.1		08:26	08:29	08:34	1-									*08:26*	*08:28*	*08:33*	*1-*				
17	?																					
17	C1.8		09:31	09:33	09:37	1-																
17	?																					
19	?																					
19	?																					
19	C2.4																					
20	?																					
20	C5.4		15:37	15:40	15:50	1-									*15:36*	*15:41*	*15:56*	*1*				
21	C2.4		08:55	09:00	09:25	1+									*08:53*	*08:58*	*09:06*	*1-*				
21	**M1.3**		12:55	13:03	?	-									12:55	13:03	13:34	2				
21	C1.5		13:42	13:45	14:00	1-									13:41	13:45	13:50	1-				
21	?																					
22	**M1.3**		10:12	10:57	14:36	3+									10:01	11:00	13:43	3+				
22	C4.1		15:17	15:22	15:34	1-																
23	?																					
23	C2.5		11:45	11:51	12:12	1+									11:43	11:49	12:01	1-				
26	C1.2																					
28	C1.7		11:54	12:13	12:49	2+																
29	C1.9		09:20	09:23	09:34	1-									*09:17*	*09:19*	*09:22*	*1-*				
29	C1.0																					
29	C3.0																					
29	C1.2																					
30	C2.4		09:26	09:40	10:03	2									09:31	09:39	09:50	1				
30	C2.1		10:08	10:11	10:25	1-																
30	C1.5		14:47	14:49	?	-									*14:45*	*14:49*	*14:56*	*1-*				
31	?		13:42	13:48	14:09	1+									13:43	13:47	13:58	1-				
31	**M1.1**		14:56	15:06	15:34	2									14:58	15:06	15:22	1				

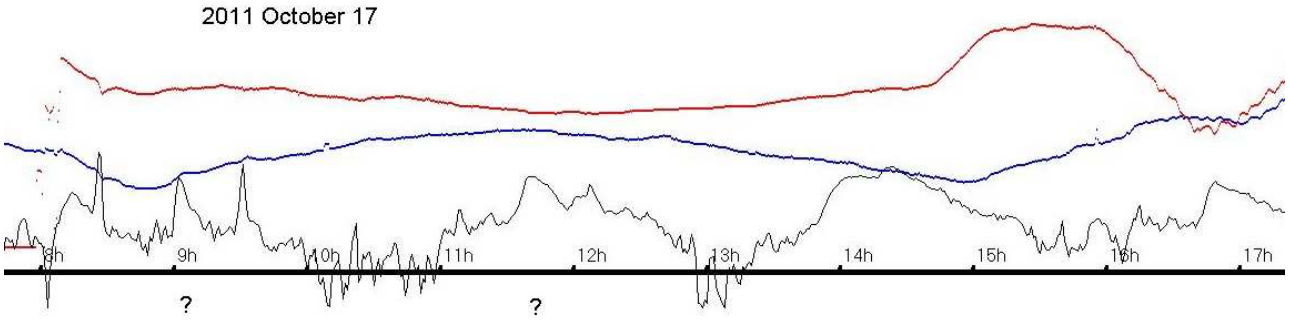
BAA Radio Astronomy Group. **2011 OCTOBER**

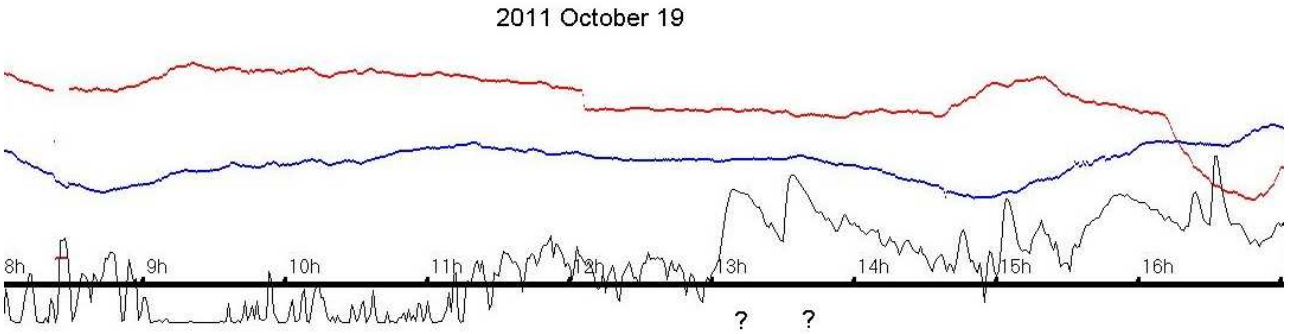
			Steve Parkinson (23.4kHz)	Simon Dawes (various)	Gonzalo Vargas (Various)		
			Tuned radio frequency receiver, 0.58m frame aerial.	PC soundcard and TRF receiver with 1m loop aerial.	Spectrum Lab.		
DAY			START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)
1	?						
1	**M1.2**						
1	*						
1	C1.0						
2	C1.0						
2	C2.6						
2	*						
2	C1.3						
2	**M1.3**				17:24 17:25 17:36 1-		
2	C7.6				21:31 21:32 21:39 1-		
4	C7.3						
5	C2.3						
5	?			10:43 11:02 ? -			
5	C6.1			11:13 11:20 12:37 2+			
5	C9.2			12:40 12:50 13:39 2+	12:48 12:49 13:04 1-		
5	B8.7				22:32 22:33 22:44 1-		
6	C1.9						
9	C1.7				13:22 13:24 13:29 1-		
10	C1.0						
10	C1.4				11:38 11:39 11:42 1-		
10	C4.5			14:33 14:35 14:56 1			
11	*						
12	C1.7						
12	C1.7						
12	C5.3			11:35 11:41 11:57 1			
12	C4.3			14:16 14:22 14:55 2			
12	C1.1						
12	C1.3				16:26 16:27 16:32 1-		
12	C2.7						
13	C1.0						
13	C2.2						
13	C1.6						
14	C1.1						
14	C1.1				15:14 15:15 15:22 1-		
14	C1.3				21:32 21:33 21:40 1-		
15	C1.1						
15	C1.6						
15	C2.0						
15	?						
15	C5.0				14:20 14:21 14:27 1-		
15	C2.3						
15	C1.3						
16	C2.0						
16	C1.8						
16	?						
16	C1.4						
16	C3.7			14:29 14:35 14:48 1			
16	C6.3			15:05 15:14 15:41 2			
16	C4.4						
16	C1.9						
17	C2.1						
17	?						
17	C1.8						
17	?						
19	?						
19	?						
19	C2.4				16:34 16:35 17:41 2+		
20	?						
20	C5.4						
21	C2.4						
21	**M1.3**			12:56 12:59 13:41 2			
21	C1.5						
21	?						
22	**M1.3**						
22	C4.1						
23	?						
23	C2.5			11:43 11:49 12:12 1+			
26	C1.2						
28	C1.7						
29	C1.9						
29	C1.0						
29	C3.0				14:48 14:49 14:53 1-		
29	C1.2				20:45 20:46 20:52 1-		
30	C2.4						
30	C2.1						
30	C1.5						
31	?						
31	**M1.1**			14:55 15:02 15:22 1+			


VLF flare activity 2005/11.
B
C
M
X
Totals
Number of S.I.D's recorded.
120
100
80
60
40
20
0
May 2005
September
January 2006
May
September
January 2007
May
September
January 2008
May
September
January 2009
May
September
January 2010
May
September
January 2011
May
September

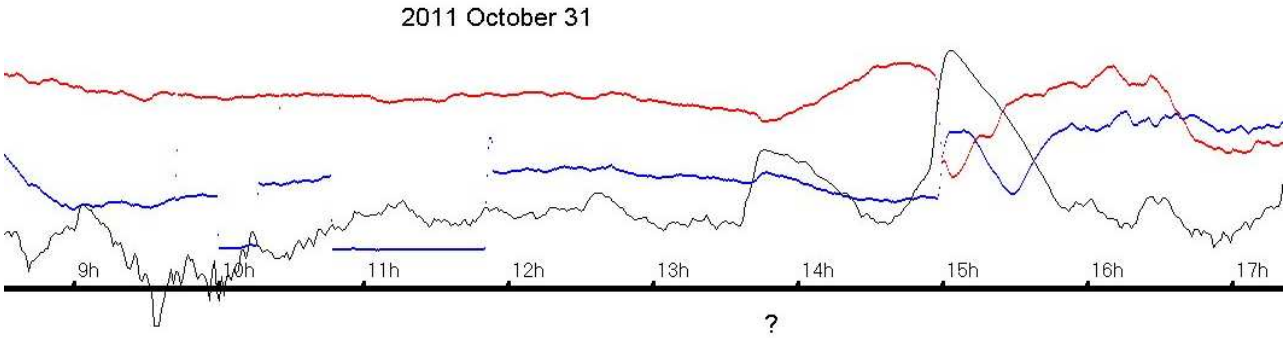
2011 October.

Activity has been at a lower level throughout the month, with no X-class flares recorded, and none shown in the GOES data. Several SIDs have been recorded for which no GOES classification is given. Shown below are my own charts for October 17th and 19th, with GOES X-ray flux overlaid. Each has two very clear peaks in the X-ray flux (marked '?' on the charts) for which observers have recorded SIDs. None of these are listed or classified by the Space Weather Prediction Centre.



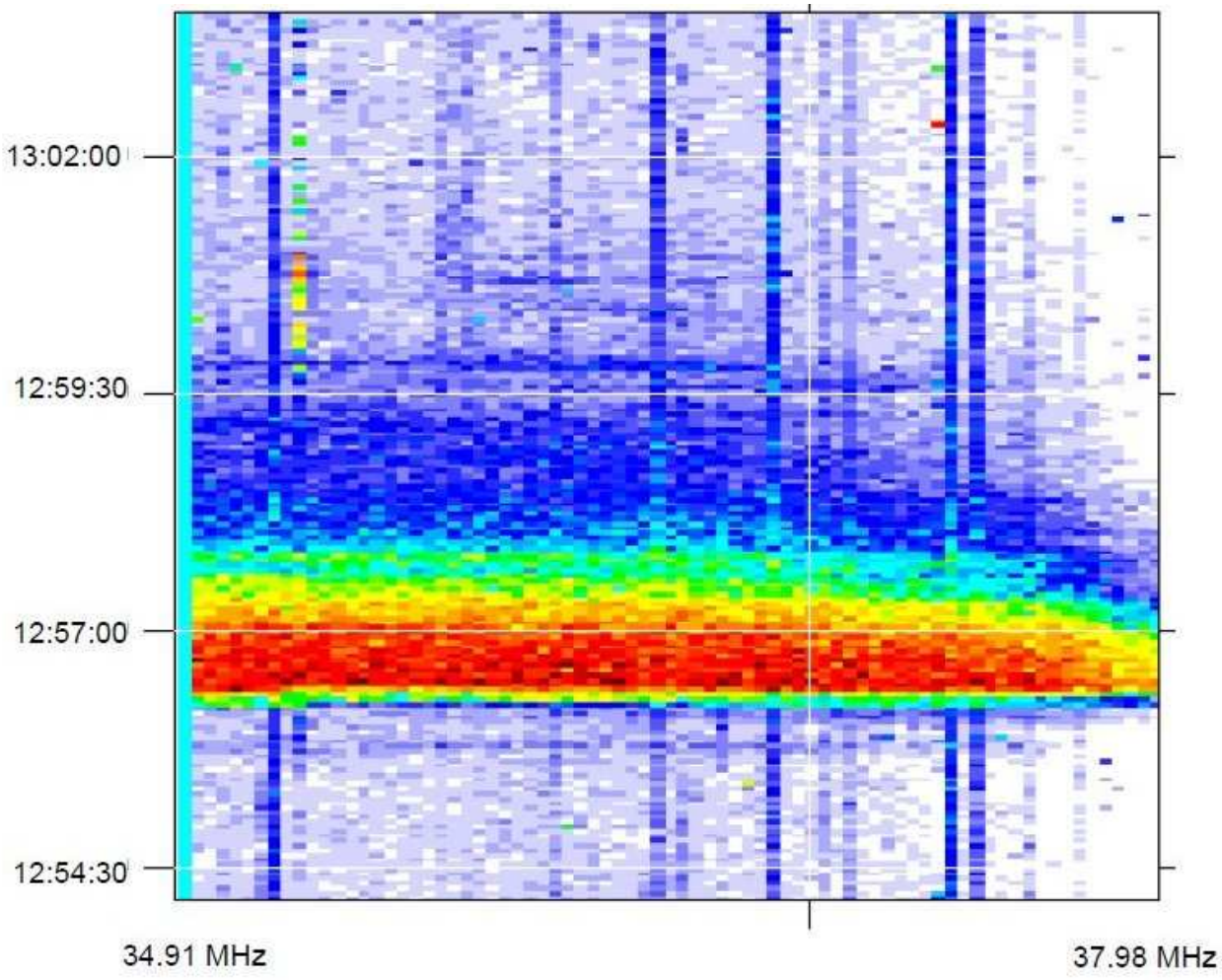


Unfortunately the SIDs do not show on my VLF recording.



On this chart, the SID is visible at 23.4kHz and 22.1kHz. I have no idea why they are not listed as real solar flares.

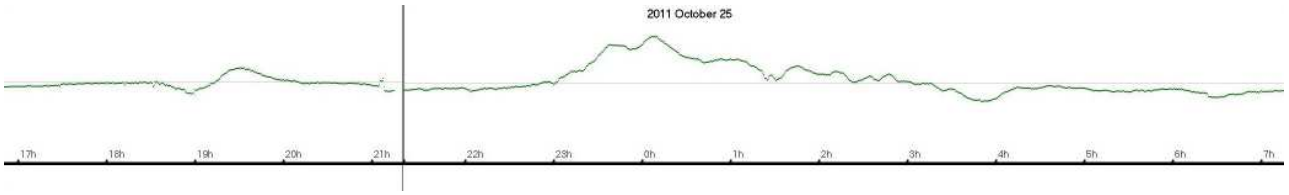
October 21st includes an M1.3 flare that was associated with a radio burst. Paul Hyde recorded the radio burst at 38MHz, peaking just 5 minutes before his timing of the SID peak. In this picture, red indicates the strongest signal, fading through blue to white.



34 – 38MHz Radio Spectrometer: 21st October 2011

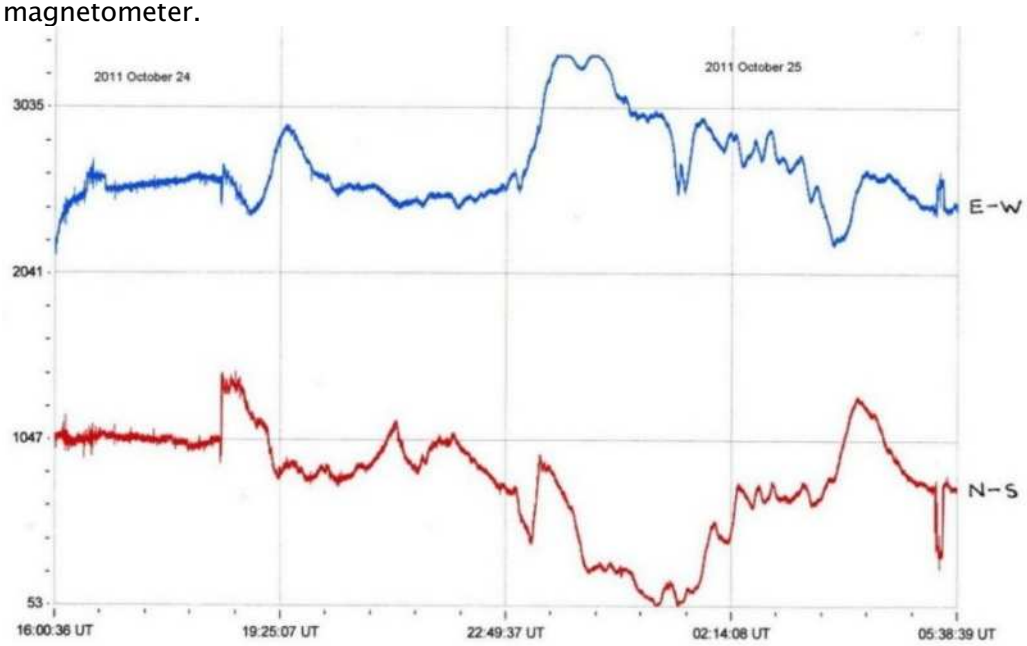
This was made using a 3 element Yagi aerial and a commercial amateur receiver.

The BGS Hartland bulletin reveals a magnetic sudden storm commencement at 18:31UT on the 24th. This was quite a large disturbance and continued through the night into the 25th.



My own recording, above, shows the storm starting with a downward turn in the east-west component. The rectangular pulse at around 21UT is local interference from my car. I measured a total disturbance of about 200nT.

These recordings by Martyn Kinder show both components of the field, made using a fluxgate magnetometer.



Colin Clements has also recorded the storm (above), using a UKRAA magnetometer.

Magnetic data provided by Colin Clements, Gonzalo vargas, Martyn Kinder and John Cook.

No SFEs (crochets) were recorded in October.

I very much enjoyed meeting those of you who attended our meeting in Northampton. There was plenty of interest in our VLF and magnetic work. An unidentified magnetic field spoiled my demonstration of magnetometer sensitivity measurement, but it did not prevent the magnetometer from working, albeit in a rather odd orientation! Many thanks to all who helped to make it a very successful day.