

BAA Radio Astronomy Group.

2012 FEBRUARY

DAY	Xray class	Observers	John Cook (23.4kHz/22.1kHz) Tuned radio frequency receiver, 0.58m frame aerial.	Roberto Battaiola (18.3kHz) Modified AAVSO receiver.	Andrew Lutley (23.4kHz) Tuned radios frequency receiver, 0.5m frame aerial.	Bob Middlefell (22.1kHz) Tuned radio frequency receiver, 0.5m frame aerial.	Mark Edwards (22.1/24.0/18.3kHz) 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)
7	C5.1	8	11:00 11:05 11:31 1+	10:57 11:07 11:39 2			10:59 11:06 11:36 2
9	C1.1	1					
10	C1.0	1					
10	C1.1	1					
11	C1.4	1					
11	C7.9	11	09:58 10:03 10:41 2	09:57 10:06 10:29 1+		10:06 10:09 10:44 2	09:58 10:03 10:18 1
11	C1.5	3					10:44 10:47 11:18 2
11	C2.7	8		16:01 16:06 16:12 1-			16:02 16:06 16:26 1
11	C7.7	1					18:51 18:57 19:11 1
12	C3.9	7	14:39 14:44 14:55 1-	14:37 14:43 14:53 1-			14:41 14:45 15:03 1
19	C1.0	1					
20	C1.1	4		11:13 11:21 11:30 1-			11:25 11:28 12:12 2+
21	C1.0	7	11:44 11:49 12:04 1	11:40 11:49 12:07 1+			11:45 11:49 12:00 1-
26	C1.3	4	11:23 11:30 11:37 1-	11:12 11:27 11:40 1+			11:22 11:31 11:45 1

DAY	Xray class	Observers	Colin Clements (23.4kHz) AAVSO receiver, 0.76m screened loop aerial.	Peter Meadows (23.4kHz) Tuned radio frequency receiver, 0.58m frame aerial.	Mike King (20.9kHz) AAVSO receiver. Tuned loop aerial.	John Wardle (19.6/23.4kHz) PC soundcard, long wire aerial.	Peter King (18.3kHz) 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)
7	C5.1						
9	C1.1						
10	C1.0						
10	C1.1						
11	C1.4						
11	C7.9		09:58 10:05 10:35 2				10:55 11:05 11:10 1-
11	C1.5						09:20 09:35 09:50 1+
11	C2.7						12:05 12:10 12:20 1-
11	C7.7						15:20 15:35 16:00 2
12	C3.9		14:39 14:45 14:54 1-				08:50 08:55 09:00 1-
19	C1.0						09:55 10:05 10:10 1-
20	C1.1						10:40 10:45 10:50 1-
21	C1.0		11:43 11:53 11:59 1-				15:55 16:05 16:10 1-
26	C1.3						08:40 08:50 09:00 1
							11:20 11:25 11:35 1-
							11:45 11:50 11:55 1-
							11:20 11:25 11:35 1-

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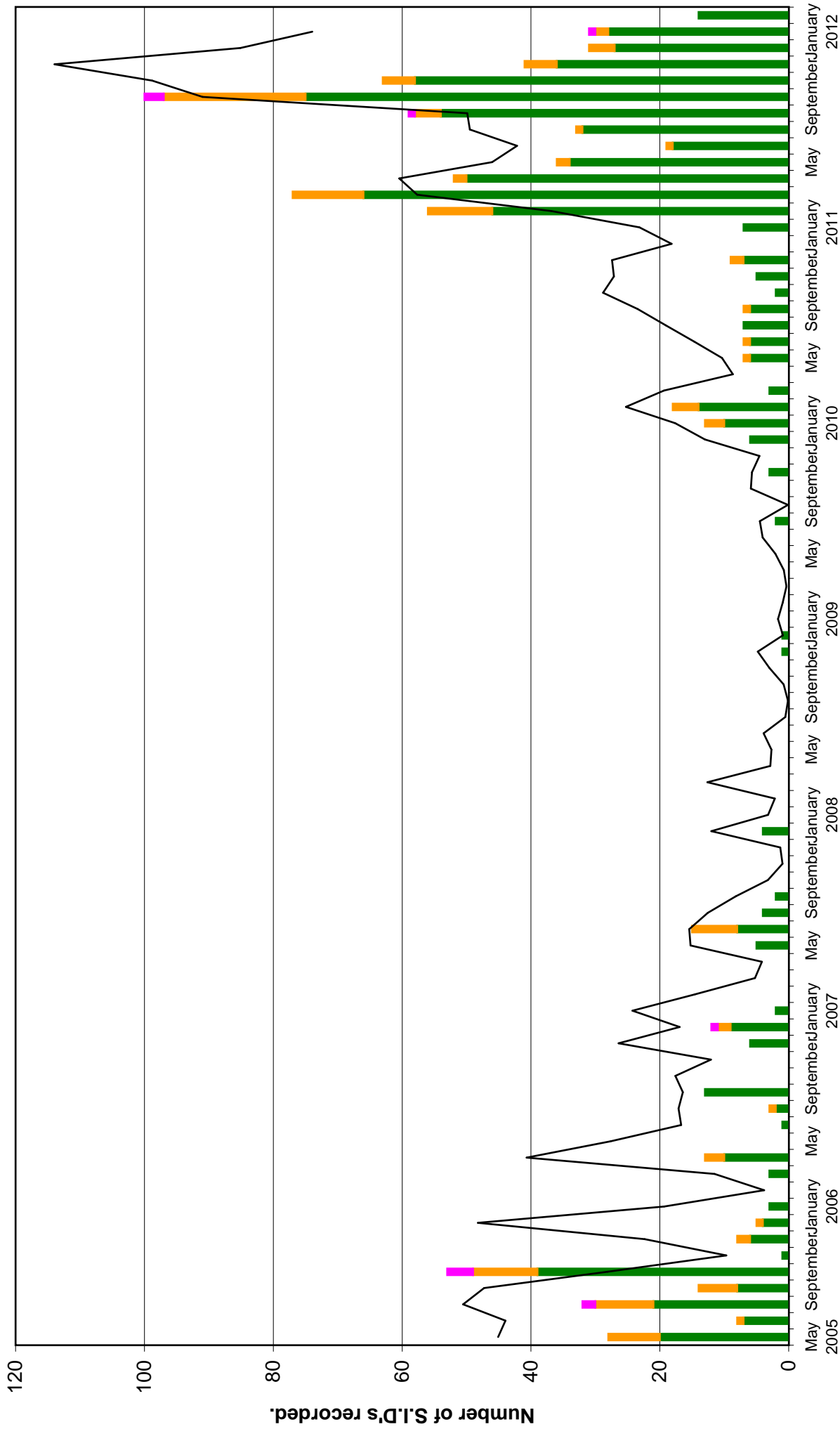
2012 FEBRUARY

		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)
7	C5.1	10:59 11:06 11:25 1+			10:59 11:07 11:25 1+	
9	C1.1					
10	C1.0					
10	C1.1					
11	C1.4					
11	C7.9	09:58 10:05 10:38 2	09:58 10:05 10:20 1		09:57 10:04 10:32 2	
11	C1.5				10:41 10:45 10:52 1-	
11	C2.7	16:02 16:06 16:12 1-	15:58 16:05 16:15 1-		15:54 15:59 16:09 1-	
11	C7.7					
12	C3.9				14:40 14:45 14:51 1-	
19	C1.0					
20	C1.1	11:24 11:28 11:35 1-				
21	C1.0	11:44 11:50 12:15 1+				
26	C1.3					

		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)
7	C5.1	11:00 11:04 11:34 2				
9	C1.1					
10	C1.0					
10	C1.1					
11	C1.4					
11	C7.9	09:58 10:05 10:40 2				
11	C1.5					
11	C2.7	16:02 16:06 16:12 1-				
11	C7.7					
12	C3.9	14:41 14:45 14:56 1-				
19	C1.0					
20	C1.1					
21	C1.0	11:45 11:49 12:01 1-				
26	C1.3					

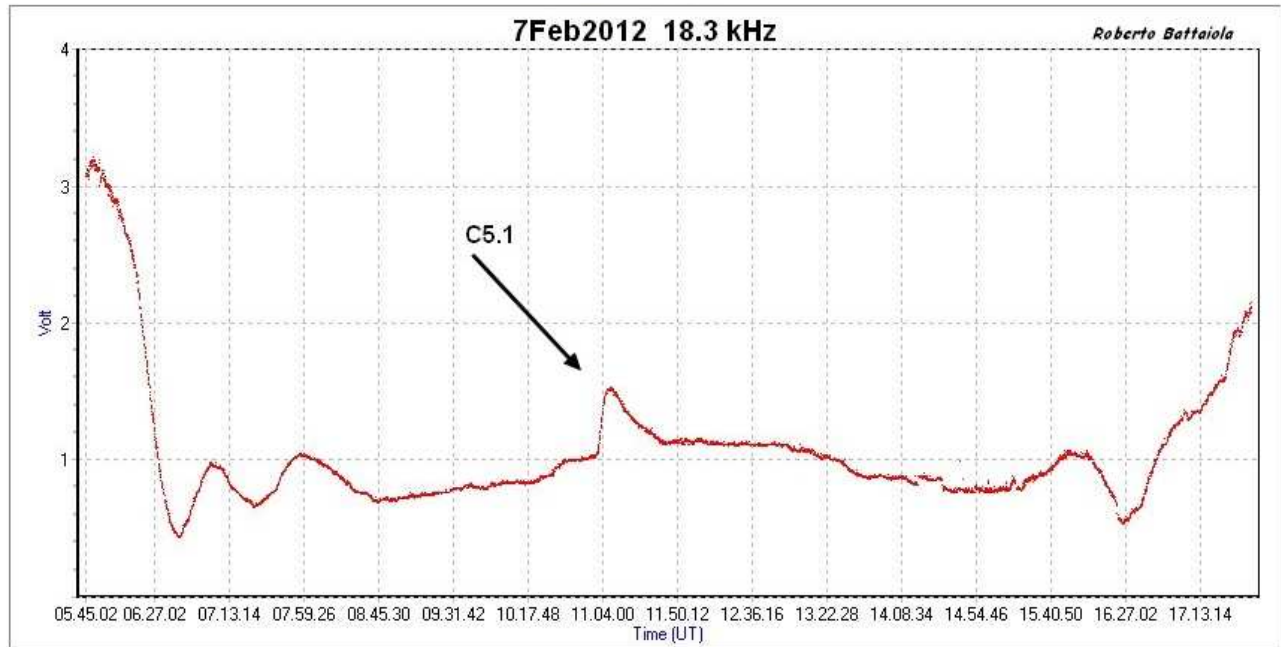
VLF flare activity 2005/12.

C M X — Relative sunspot number

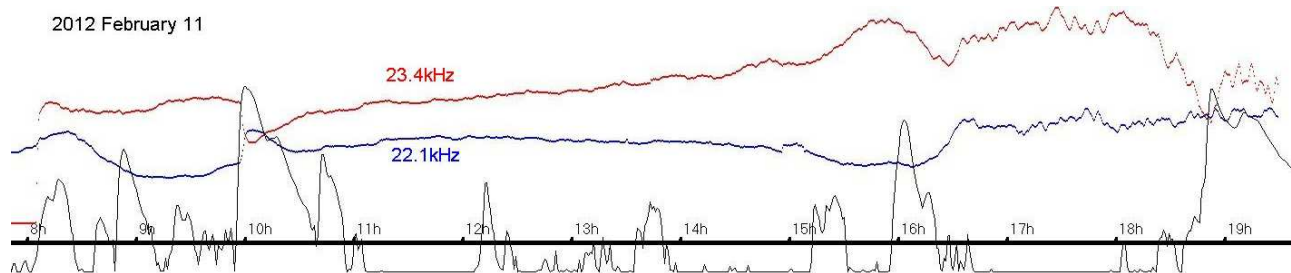


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With just 14 SIDs recorded, activity has been at its lowest for over 12 months. The C5.1 flare on the 7th was widely recorded, and is shown nicely in this chart by Roberto Battaiola.



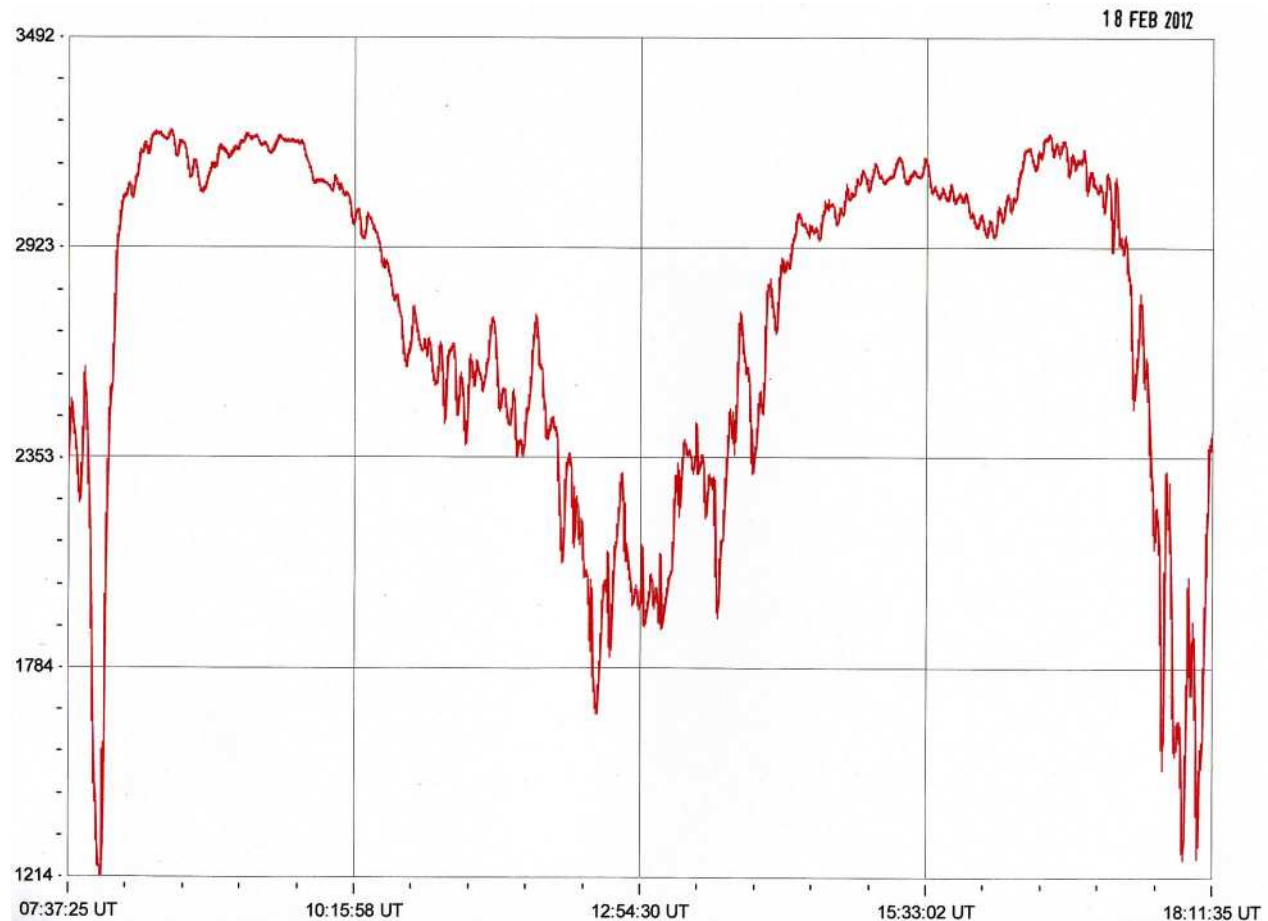
The highlight of the month was the 11th, with five events recorded in total. I have added the GOES X-ray flux to my own recording, below:



The C7.9 flare is clear enough in both signals, but the others have not recorded well with me. Mark Edwards caught the C7.7 flare after local sunset by monitoring NAA at 24kHz from the USA, thus extending the evening period by a couple of hours.

Looking through the SWPC bulletins for February, we have recorded a good sample of the activity. There was a single M1.0 flare at 20:00UT on the 6th, no X-class, the majority of the remaining events being B-class.

Colin Clements has reported a number of particularly noisy days in February. His recording for the 18th is shown below:



He also recorded high day time noise levels on the 12th, 14th, 15th, and 16th.

MAGNETIC DATA.

Most of the disturbed periods shown in the Bartels diagram are due to coronal hole high speed streams, which have been a feature throughout the month. Two CMEs are noted in the SWPC bulletins. The first reached Earth on the 15th, the earlier active period being due to the CH HSS. The CME disturbance continued into the early hours of the 16th. The second CME arrived late on the 26th. Although the arrival does not show in our recordings, the disturbance grew to K= 4 or 5 by 18:00UT on the 27th.

A sudden storm commencement does show in our recordings on the 22nd, at 02:15UT. This appears to be from another CH HSS, and caused a very small disturbance until about 04:00UT

Martyn Kinder has sent me his own Bartels diagram, including a 3-hourly K-index. I am looking at ways to include this very large item on an A4 page while still being able to read the details.

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	2092	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	28	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	2095	2010 April	27	28	29	30	31	1	2	3	4	
2411	F	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	2096	2010 May	23	24	25	26	27	28	29	30	1	
2412	F	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	2097	2010 June	20	21	22	23	24	25	26	27	28
2413	F	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	2098	2010 July	17	18	19	20	21	22	23	24	
2414	F	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	2099	2010 August	14	15	16	17	18	19	20	21	
2415	F	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	2100	2010 September	11	12	13	14	15	16	17	18	
2416	F	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	2101	2010 October	7	8	9	10	11	12	13	14	
2417	F	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	2102	2010 November	4	5	6	7	8	9	10	11
2418	F	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	2103	2010 December	31	1	2	3	4	5	6	7	
2419	F	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	2104	2011 January	27	28	29	30	1	2	3	4	
2420	F	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	2105	2011 February	25	26	27	28	29	30	31		
2421	F	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	2106	2011 March	20	21	22	23	24	25	26	27
2422	F	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	2107	2011 April	17	18	19	20	21	22	23	
2423	F	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	2108	2011 May	16	17	18	19	20	21	22	
2424	F	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	2109	2011 June	15	16	17	18	19	20	21	
2425	F	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	2110	2011 July	9	10	11	12	13	14	15	
2426	F	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	2111	2011 August	5	6	7	8	9	10	11	
2427	F	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	2112	2011 September	1	2	3	4	5	6	7	8	
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			
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			
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			
2431	F	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	2116	2011 October	18	19	20	21	22	23	24	
2432	F	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	2117	2011 November	14	15	16	17	18	19	20	
2433	F	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	2118	2011 December	11	12	13	14	15	16	17	
2434	F	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	12	13			
2435	F	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	9			
2436	F	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	2120	2012 January	1	2	3	4	5	6	7	

Magnetic data supplied by Martyn Kinder, Colin Clements, Gonzalo Vargas and John Cook.