

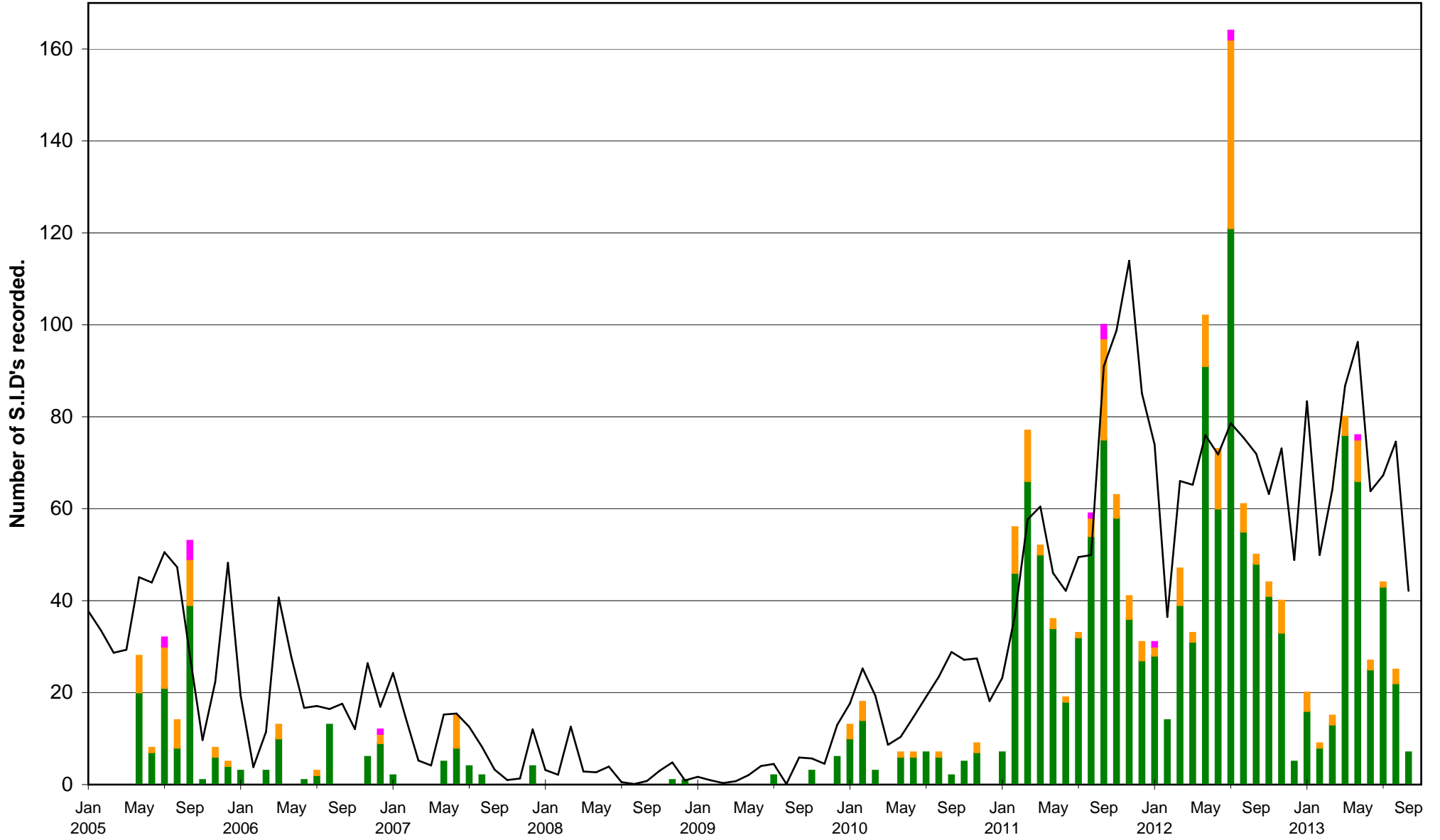
BAA Radio Astronomy Group.

2013 SEPTEMBER

DAY	Xray class	Observers	John Cook (23.4kHz/22.1kHz)	Roberto Battaiola (20.3kHz)	Paul Hyde (22.1kHz/23.4kHz)	Bob Middlefell (22.1kHz)	Mark Edwards (18.3/24.0/19.6kHz)
			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)
1	C1.7	5			14:19 14:23 15:09 2+		14:19 14:22 15:00 2
3	B8.8	1					14:17 14:21 14:38 1
3	C1.3	1					17:36 17:38 18:13 2
4	C2.6	4	08:39 08:43 09:26 2+		08:38 08:45 09:25 2+		08:38 08:46 09:23 2
20	C2.1	5	10:00 10:06 10:15 1-				10:01 10:02 10:21 1
20	C3.8	6	11:44 11:55 12:42 2+		11:44 11:56 12:48 2+		11:44 11:57 12:42 2+
20	C2.3	5	12:49 12:52 13:12 1				12:49 12:56 13:30 2
20	C1.3	1					16:55 17:02 17:12 1-

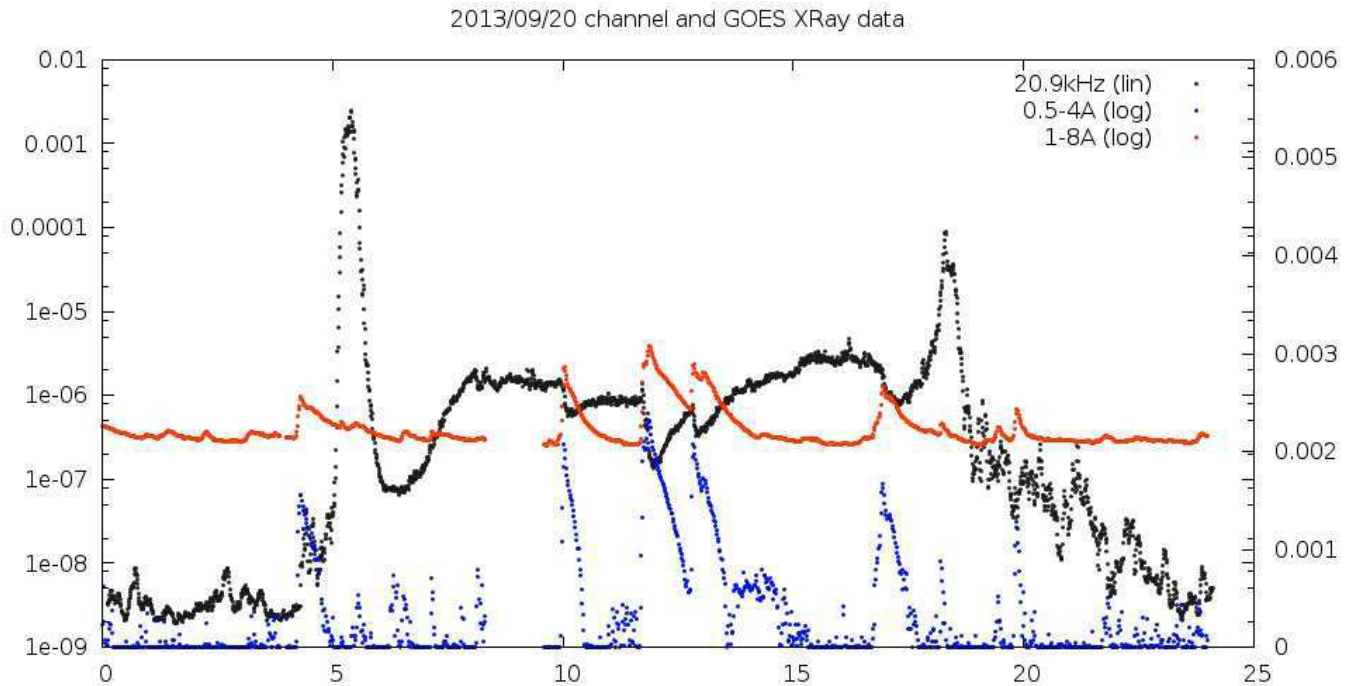
DAY	Xray class	Observers	Colin Clements (23.4kHz)	Peter King (18.3kHz)	Richard Kaye (19.6/23.4/20.9kHz)	John Wardle (19.6/23.4kHz)	Steve Parkinson (Various)
			AAVSO receiver, 0.76m screened loop aerial.	Own designed receiver, 1.4m loop aerial.	Pre-amplifier + PC software receiver.	PC soundcard, long 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)
1	C1.7		14:16 14:27 16:41 3+		14:19 14:22 14:48 1+		14:19 14:23 14:35 1-
3	B8.8						
3	C1.3						
4	C2.6						08:39 08:44 09:20 2
20	C2.1		09:59 10:07 10:41 2		09:57 10:07 10:37 2		10:00 10:05 10:34 2
20	C3.8		11:43 11:56 12:48 2+		11:45 11:57 12:44 2+		11:44 11:56 ? -
20	C2.3		12:48 12:57 14:34 3		12:48 12:56 13:30 2		12:49 12:54 13:20 1+
20	C1.3						

VLF flare activity 2005/13.



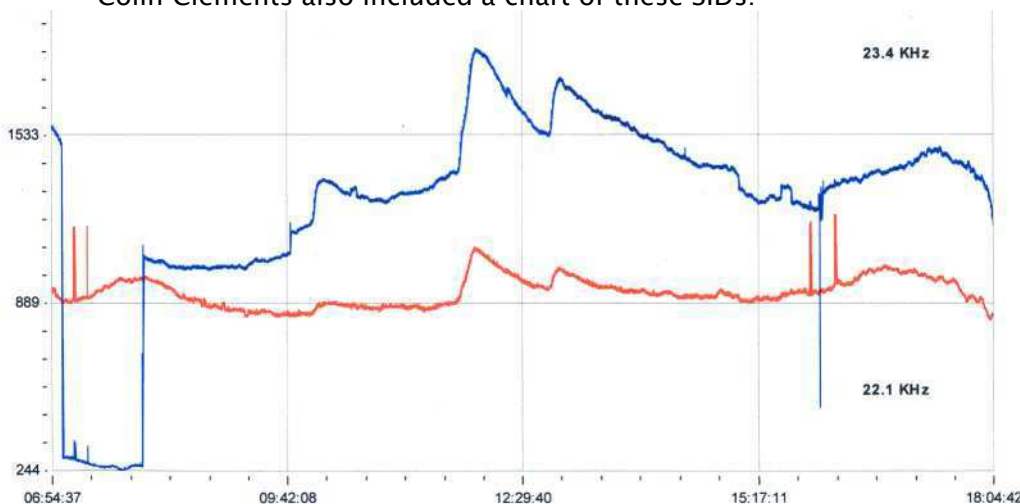
With just 7 flares recorded as SIDs, activity in September was back to levels last seen 7 months ago. There were no M or X-class flares in the GOES record, and during the week of the 9th to 15th just 3 minor B-class flares are shown. The most energetic event of the month was a C3.9 flare at 03:15UT on the 18th, far too early for us to record. We did manage to catch a SID from the C3.8 flare on the 20th, by far the busiest day of the month.

Richard Kaye, who observes from Birmingham, sent his recording from the 20th:



Richard has written his own PC software to record and chart his observations, using a frame aerial and modified Velleman pre-amplifier to drive the sound card. The red and blue traces show the GOES X-ray flux, while black is his recording at 20.9kHz.

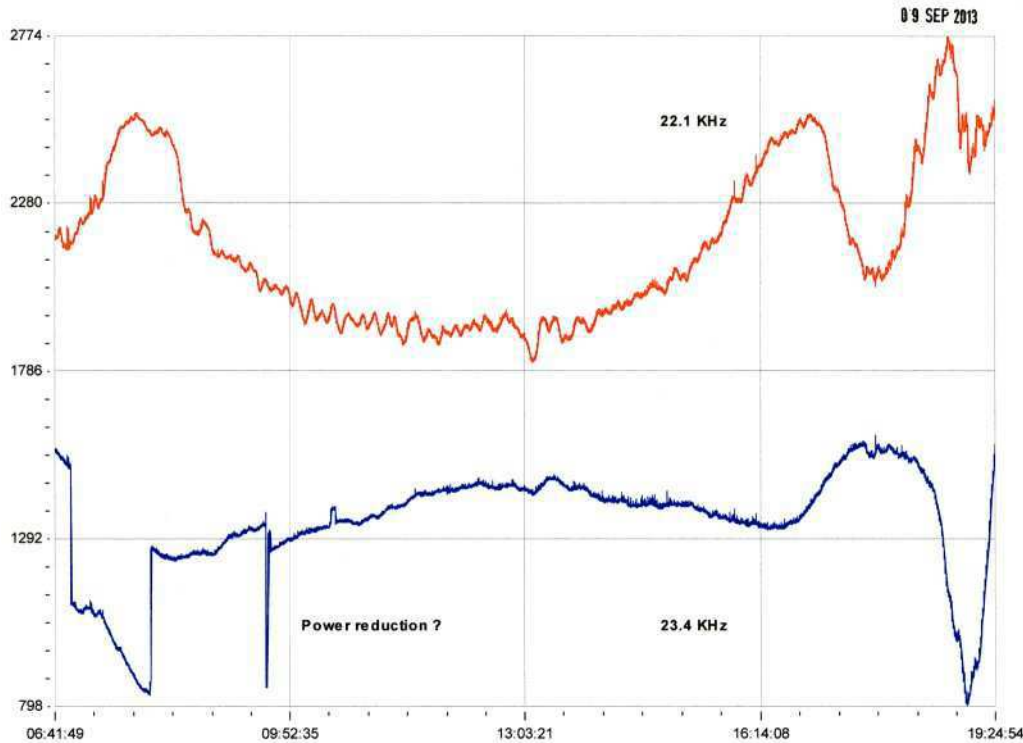
Colin Clements also included a chart of these SIDs:



Blue is 23.4kHz, and red is 22.1kHz.

The final SID on the 20th peaked at 17:01UT, rather late for most of the European signals to record. Mark Edwards caught this one on the 24kHz trans-Atlantic path. This longer path also recorded a B8.8 flare on the 3rd.

Periods of oscillation were also noted during the first half of September. This chart from Colin shows a very strong oscillation on the 9th, starting around sunrise and lasting into the late afternoon at 22.1kHz:



The 23.4kHz signal shows more of its signal level shifts.

MAGNETIC OBSERVATIONS.

Magnetic activity was also very subdued through September. The BGS bulletin does not list any sudden storm commencements, and no CMEs are listed by the SWPC in September. The weak disturbances on the 2nd were due to a CME from a C8 flare at 02:46UT on the 30th August. The disturbance was at a very low level. A more distinct disturbance was reported by Roger Blackwell on the Isle of Mull, starting at 23:00UT on the 3rd. This event had a very sharp rise, followed by a slow decay over the next hour and a half. Roger recorded a peak disturbance of 60nT, while my magnetometer recorded about 3nT. For those without a magnetometer, I suggest that you keep an eye on Roger's web page at www.marsport.org.uk/observatory/index.php for a live display of his magnetic observations. His chart for the 3rd is at the top of the next page.

As already noted, magnetic activity was at a very low level through the rest of the month, the only extended disturbance being on the afternoon of the 24th. I recorded a peak disturbance of about 45nT around 14:00UT. This appears to be due to CHSS effects.

Magnetic observations received from Colin Clements, Roger Blackwell, John Cook.

2425	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
F	B	BBC	CCC	CCMCC	CC		B			CCCC	CCCC	CCCC	CB	C	C						C						C		
2426	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		
F			CCC								BCCC	CCCM	CBM	CCC															
2427	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8		
F																											CCCC		
2428	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		
F			C	C															CCCM	CCBCC	CCCB	CCCC	CBCC						
2429	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		
F	CCCB	CCCC	CCC	CMC	CMXC	CCCC	CC							CB	CC	BC	19	BB	BC	C		BC	C						
2430	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		
F	CCC	C	CCCC	CMCC	M		X	CMC	C	MC	CCB	C	C	CCCC	CCC	CCCC	CC	CCC	CC	CCC	CC	CCCC	CMCC	CMXC	CCCC	CXMM	MMCM	CCMC	CCCC
2431	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
F	CCM	CC	M	MC	CCMC	C				CCCB	C	CCC			CCCC	CCC	CCC	CCCC	CCCC	CC		CC	C		CMC	MC	C		
2432	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		
F	C		C	CCCC	CCC	M		C	CCCC	CCM				C	CMCC	CC					C	CC	CC	MM	C	CCC	CCCC		
2433	21	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		
F			C	C			C	C	C															B	C				
2434	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		
F	B		C	CCCC	C		CCM	CC	C	CCC	M	CCC	MBM							C		CC	C		CC	CC			
2435	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		
F	CMC	C	CC	CC	CM		C	CC	C					CCX	C														
2436	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	1	2	3	4	5	6	7		
F	CC	CCCC	C																										
2437	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		
F	C	CC	CCM	C	M	M	MC	CC								BCCC	CCC	C											
2438	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	29	30		
F	C	BC	C			C	B							M															
2439	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		
F		CBCC	CC	CC	CCMCC	CMCM	CCMC	CCMC	CBMM	MCCC	CCCC	CCCC	CC	CCCC	CBC	CC	M	CCCC	C										
2440	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		
F	BB	C	CCCC	C																									
2441	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	19	20		
F		C	CCCC	CMC	CCMC	CCMCM	CCCC	MMMM	MMMM	MMMM	MMMM	MMMM	MMMM	MMMM	CCCC	MMCC	CCCC	CX	CCCC	MCCC	C	CCC	M	C					
2442	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		
F			CB	CCCC		C	CCCM	CCM	MCC	CCCM	CCCC	CCCC	C	CCC	C														
2443	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	12		
F	CMCM	MCCM																											
2444	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9		
F	CCC				CCC	CC	CC											CCCC	CCC	CCCC	C								
2445	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	5		
F	CMBC	CCC	CB	B			C	CCCC			CM	CC	C	CCC	CCCC														
2446	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	1	2		
F							CC	CMCM	CMC	CCCC	C			CC	19	CCMC	MCM												
2447	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	29		
F																													
2448	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	25		
F							MC	CC	C	CC	CC	MM	MCCC	C	C														
2449	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	21		
F																								CM					
2450	22	23	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		
F	C	C	C																						MC	C			
2451	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		
F	C	CB											B	CB	C	M	CCC	CC	C	CCCC	CCC	MCCC	CM	C					
2452	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13		
F		C	C	CC	CCCC	M	CCCC	CCCC	CCCC	CCCC	CCCC	CCCC	CCCC	CCCC	CCCC	MC	CCMM	CCCC	CCCC	CCCC									
2453	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		
F	C		CC	M	C	CCCC	CCCM																						
2454	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6		
F	BC																												
2455	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	1	2		
F	CB		C	C	CC	C	C	C	CC	C																			
2456	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23								