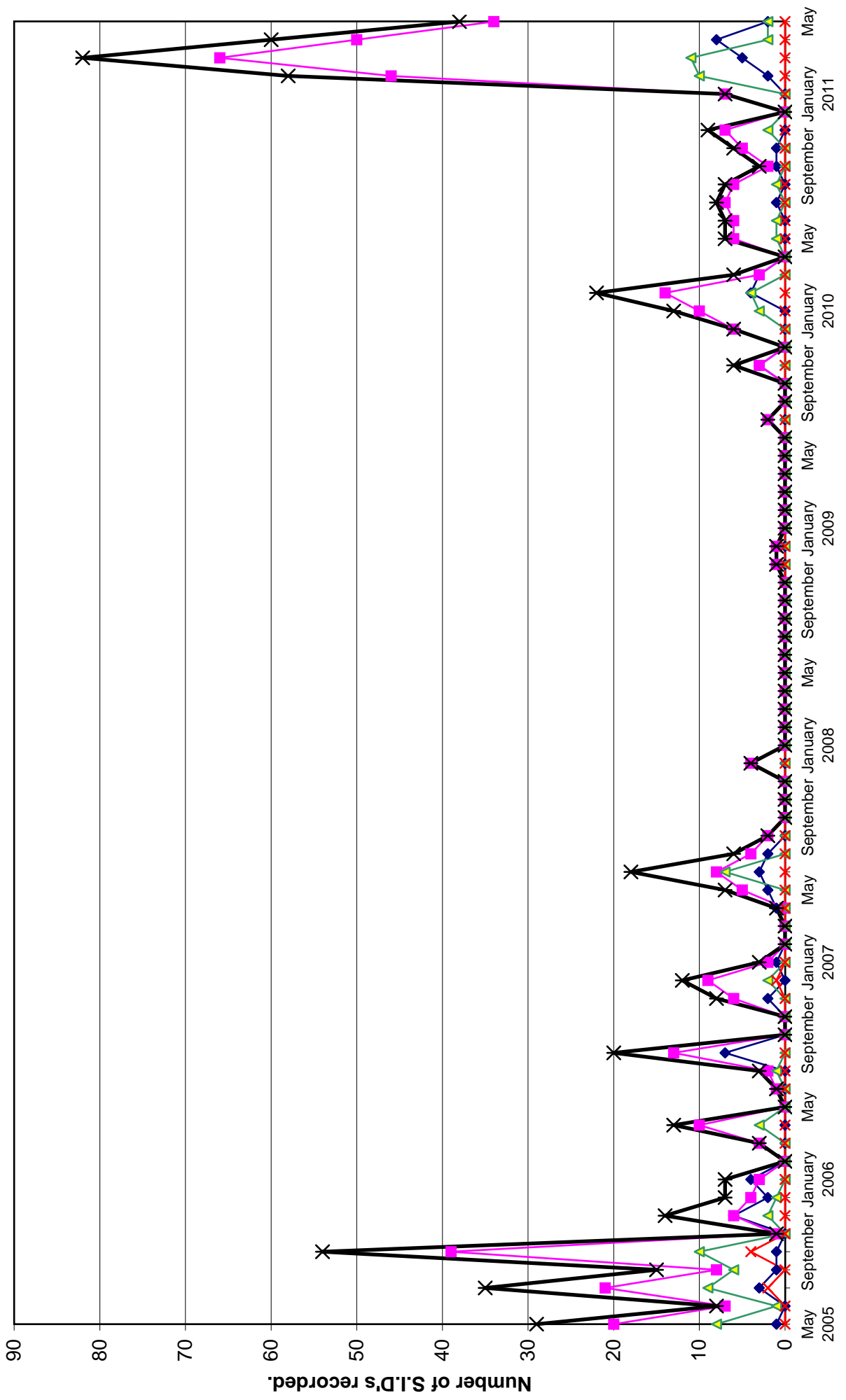


DAY	Xray class	Observers	John Cook (23.4kHz/22.1kHz)	Roberto Battaiola (18.3kHz)	Andrew Lutley (23.4kHz)	Bob Middlefell (22.1kHz)	Mark Edwards (18.3/24.0/37.5kHz)
			Tuned radio frequency receiver, 0.58m frame aerial.	Modified AAVSO receiver.	Tuned radios frequency receiver, 0.5m frame aerial.	Tuned radio frequency receiver, 0.5m frame aerial.	Spectrum Lab / PC 2m loop aerial.
			START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)
1	C1.6	4		07:45 08:14 08:27 2			
1	B9.9	1					
2	C1.2	5	14:03 14:06 14:20 1-	13:51 13:58 14:06 1-			
3	C1.3	4		10:43 10:53 11:04 1			
9	C1.5	1					
12	C2.0	5		12:16 12:35 12:51 2			12:23 12:37 12:58 2
15	C1.3	3		14:20 14:25 14:34 1-			14:19 14:29 15:00 2
18	C1.2	4	12:55 13:03 13:12 1-	12:51 13:01 13:17 1+			
18	C2.0	2					18:21 18:27 18:51 1+
27	B7.7	1					
27	C2.1	7	14:47 14:54 15:14 1+	14:42 14:53 15:13 1+			14:49 14:56 16:02 2+
27	C5.6	7	16:40 16:51 17:04 1	16:35 16:44 17:10 2			16:42 16:48 17:30 2+
27	C1.1	2					17:38 17:46 18:33 2+
27	C1.4	1					
28	C1.7	3					
28	C2.1	2		06:55 07:12 07:26 1+			06:19 06:25 06:29 1-
28	C4.4	6	08:04 08:11 08:36 1+	08:01 08:09 08:26 1			08:06 08:11 08:37 1+
28	C7.7	9	08:44 09:02 09:55 2+	08:41 09:02 09:24 2			08:43 09:06 10:09 3
28	C5.3	9	10:25 10:40 12:10 3	10:23 10:30 11:30 2+			10:27 10:36 12:46 3+
28	C1.9	8	12:43 12:46 13:00 1-	12:42 12:46 12:56 1-			12:46 12:48 13:11 1
28	C1.4	3		13:11 13:16 13:26 1-			
28	C1.2	4		15:20 15:27 15:39 1			15:25 15:31 16:09 2
28	C1.0	1					
28	C1.9	6		17:20 17:24 17:31 1-			17:24 17:27 17:52 1+
28	C2.2	3					18:47 18:49 19:32 2
28	M1.1	1					21:14 21:33 22:17 2+
29	C1.0	2		06:13 06:19 06:34 1			05:12 05:26 07:13 3
29	C1.8	4		07:10 07:14 07:18 1-			06:16 06:27 06:39 1
29	B9.4	2					
29	C2.6	7		07:25 07:33 07:49 1			07:28 07:35 08:09 2
29	C2.4	4		08:08 08:35 08:49 2			
29	C1.6	6		08:56 09:01 09:04 1-			09:00 09:03 ? -
29	C3.7	8	09:19 09:25 ? -	09:16 09:25 09:33 1-			09:23 09:27 09:41 1-
29	C3.0	7	09:45 09:48 10:05 1	09:43 09:48 09:56 1-			09:47 09:50 10:04 1-
29	M1.4	9	10:11 10:54 ? -	10:02 10:13 10:21 1			10:08 10:25 11:37 3
29	C7.7	9	11:38 11:42 12:15 2	11:34 11:40 11:42 1-			11:39 11:43 12:19 2
30	C3.5	2		05:42 05:46 05:50 1-			05:50 05:53 06:01 1-
30	C7.0	5		05:59 06:07 06:18 1			06:03 06:08 06:16 1-
30	C2.8	7	10:52 11:02 ?	10:39 11:04 11:25 2+			10:34 11:10 12:18 3

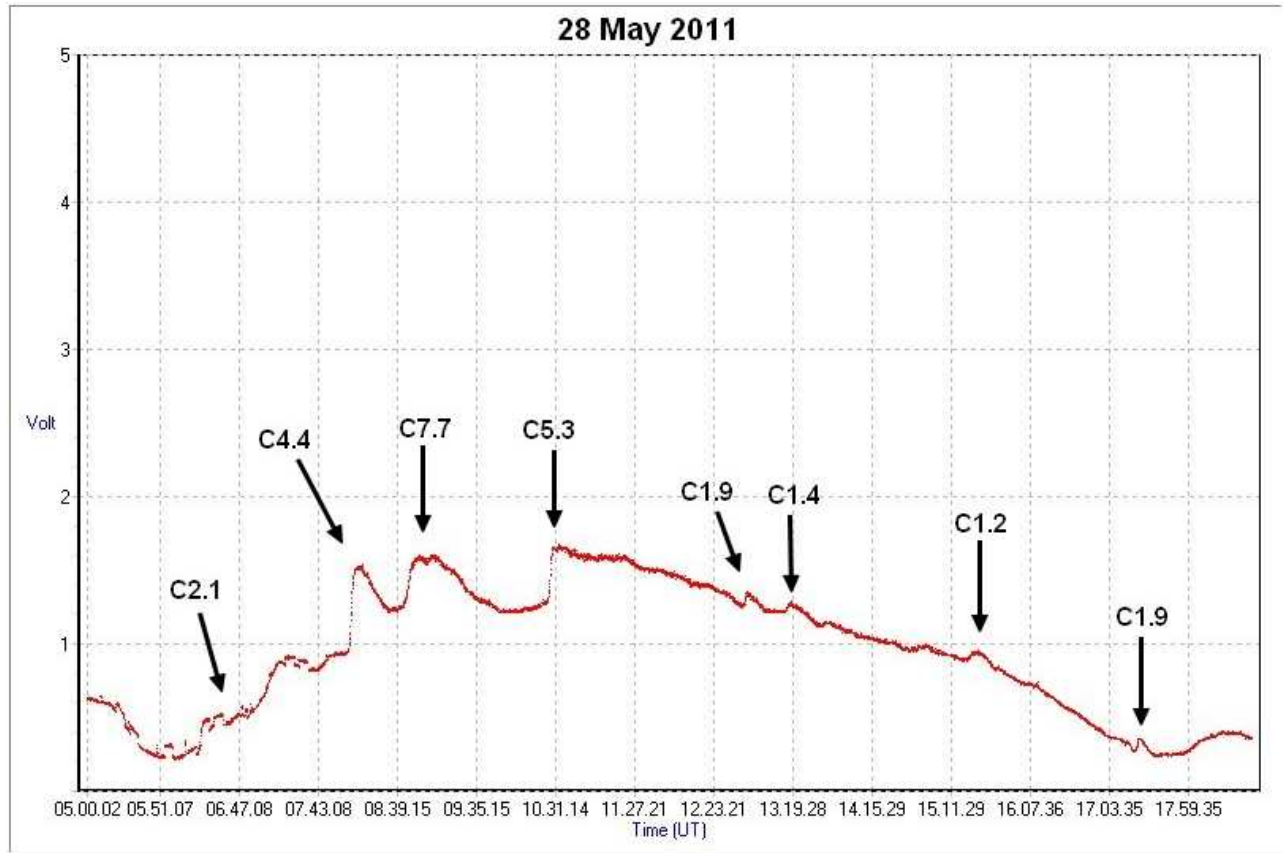
DAY	Xray class	Observers	Colin Clements (23.4kHz/37.5kHz)	Peter Meadows (23.4kHz)	Mike King (20.9kHz)	John Wardle (Various)	Peter King (18.3kHz)
			AAVSO receiver, 0.76m screened loop aerial.	Tuned radio frequency receiver, 0.58m frame aerial.	AAVSO receiver. Tuned loop aerial.	PC soundcard, long wire aerial.	Own designed receiver, 1.4m loop aerial.
			START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)
1	C1.6					08:02 08:13 08:38 2	
1	B9.9		09:53 09:54 10:42 2+				
2	C1.2					14:03 14:05 14:19 1-	14:00 14:05 14:08 1-
3	C1.3						10:45 10:50 10:55 1-
9	C1.5						17:32 17:42 17:50 1-
12	C2.0		12:42 12:43 12:53 1-				12:13 12:38 12:50 2
15	C1.3						
18	C1.2						12:50 13:00 13:09 1
18	C2.0						18:00 18:30 19:50 3
27	B7.7						
27	C2.1		14:42 14:59 15:54 2+				14:42 14:55 15:04 1
27	C5.6						16:40 16:45 16:49 1-
27	C1.1						
27	C1.4						19:35 19:45 20:00 1
28	C1.7						
28	C2.1						
28	C4.4						
28	C7.7		09:01 09:08 09:26 1			08:47 09:01 09:32 2	08:44 09:05 09:05 1
28	C5.3		10:27 10:36 11:52 2+			10:27 10:30 11:29 2+	10:22 10:30 11:20 2+
28	C1.9					12:35 12:45 12:49 1-	12:43 12:45 12:50 1-
28	C1.4						13:10 13:15 13:18 1-
28	C1.2						15:20 15:25 15:30 1-
28	C1.0						15:40 15:44 15:48 1-
28	C1.9					17:20 17:27 17:38 1-	17:20 17:22 17:26 1-
28	C2.2					18:45 18:49 18:57 1-	18:43 18:46 18:50 1-
28	M1.1						
29	C1.0						
29	C1.8						
29	B9.4						
29	C2.6					07:28 07:32 07:50 1	07:25 07:30 07:35 1-
29	C2.4					08:22 08:38 08:50 1+	08:08 08:34 08:50 2
29	C1.6					08:52 08:58 09:02 1-	08:58 09:00 09:02 1-
29	C3.7					09:19 09:27 09:39 1	09:16 09:16 09:28 1-
29	C3.0					09:44 09:50 10:02 1-	
29	M1.4		10:05 10:32 11:37 3			10:03 10:33 11:36 3	10:03 10:35 11:09 2+
29	C7.7		11:37 11:43 11:58 1			11:36 11:43 12:02 1+	11:36 11:40 11:43 1-
30	C3.5						
30	C7.0					05:59 06:07 06:30 1+	
30	C2.8					11:00 11:06 11:20 1	10:48 11:01 11:23 2

VLF flare activity 2005/11.

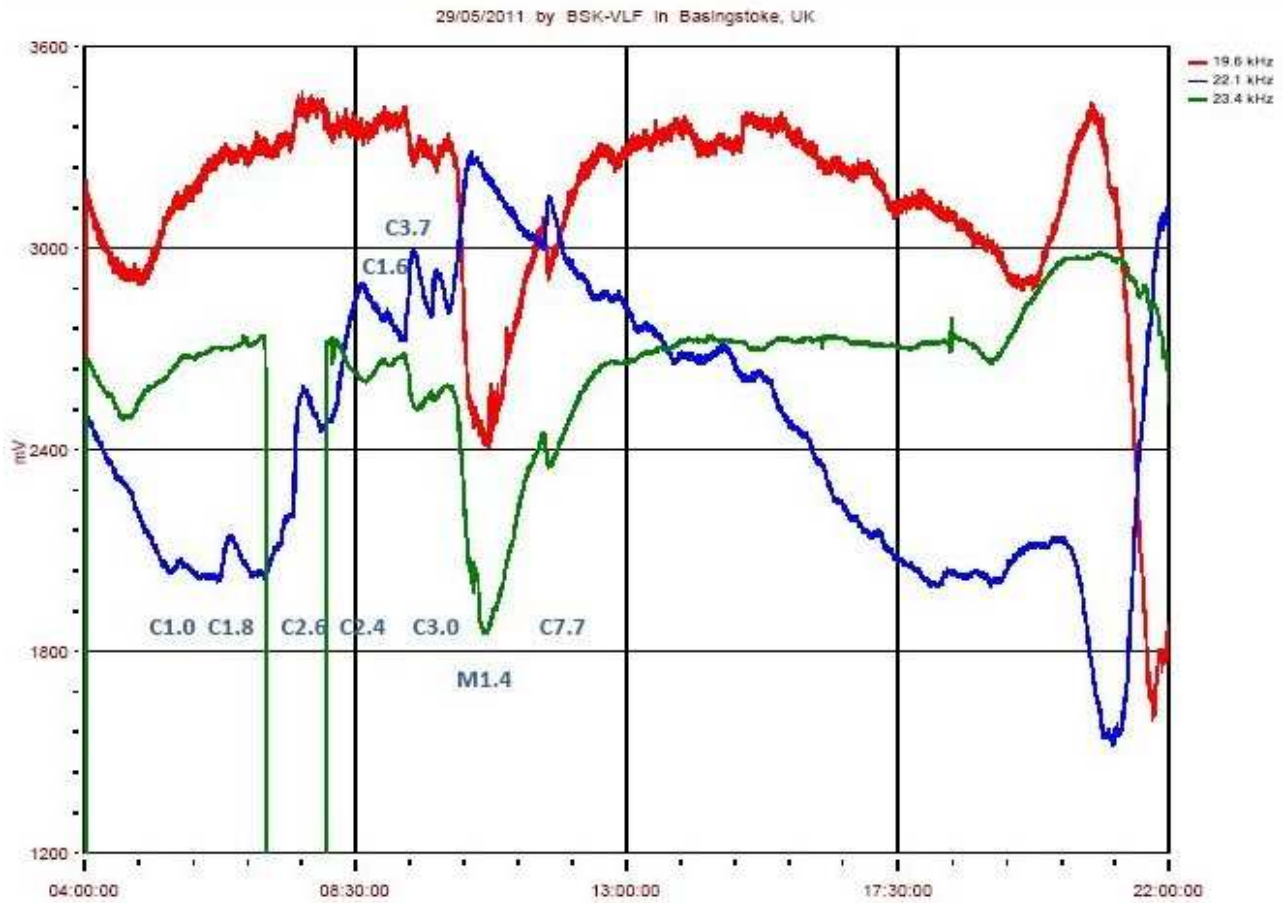


2011 MAY.

After a slow start, activity returned to higher levels for the last four days of May. Although well down on the figures for March and April, it is still higher than anything in the last five years.



This chart from Roberto Battaiola shows most of the SIDs on the 28th.



Paul Hyde recorded most of the activity on the 29th; red is 19.8kHz, blue is 22.1kHz, and green is 23.4kHz.

Magnetic data.

Data for the Bartels diagram is from Colin Clements, as well as my own. Colin is much further north, at about 54.5 degrees, than I am (52.5 degrees), and so the difference between 'disturbed' and 'active' on the diagram is currently rather subjective. I am looking at ways to improve this, but calibration of a magnetic observatory remains difficult.

Most of the activity shown is from coronal hole high speed streams, with recurrent coronal holes showing easily on the diagram. A coronal mass ejection occurred at the end of May, and was seen by both Colin and myself as a very active period on the 28th and 29th. A preliminary K-index of 4 from 09UT to 15UT is shown in my own recording on the 29th. The Hartland observatory indicates a maximum K-index of 5 over this period.

ROTATION	KEY:	DISTURBED.	ACTIVE	B, C, M, X = FLARE MAGNITUDE.	Synodic rotation start (carrington's).
2407	18 19 20 21 22 23 24 25 26 27 28 29 30 31				2092
F					2093
2408	14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31				2093
F					2094
2409	10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27				2094
F					2095
2410	9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27				2095
F					2096
2411	5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22				2096
F					2097
2412	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 28				2097
F					2098
2413	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 24				2098
F					2099
2414	25 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10 11 12 13				2099
F					2100
2415	22 23 24 25 26 27 28 29 30 1 2 3 4 5 6 7 8 9 10				2100
F					2101
2416	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 14				2101
F					2102
2417	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 10 11				2102
F					2103
2418	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 6 7				2103
F					2104
2419	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 3 4				2104
F					2105
2420	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				2105
F					2106
2421	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				2106
F					2107
2422	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				2107
F					2108
2423	24 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 21 22				2108
F					2109
2424	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 17 18				2109
F					2110
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				2110
F					2111
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				2111
F					