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BAA Radio Astronomy Section.

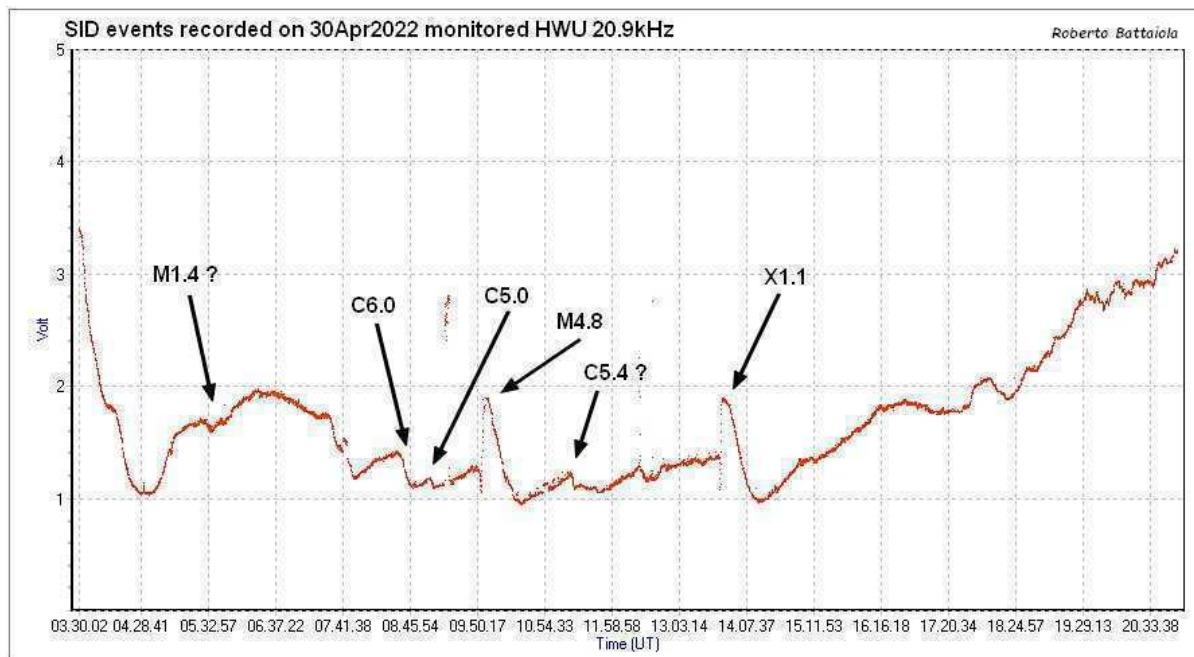
Director Paul Hearn.

RADIO SKY NEWS

2022 APRIL.

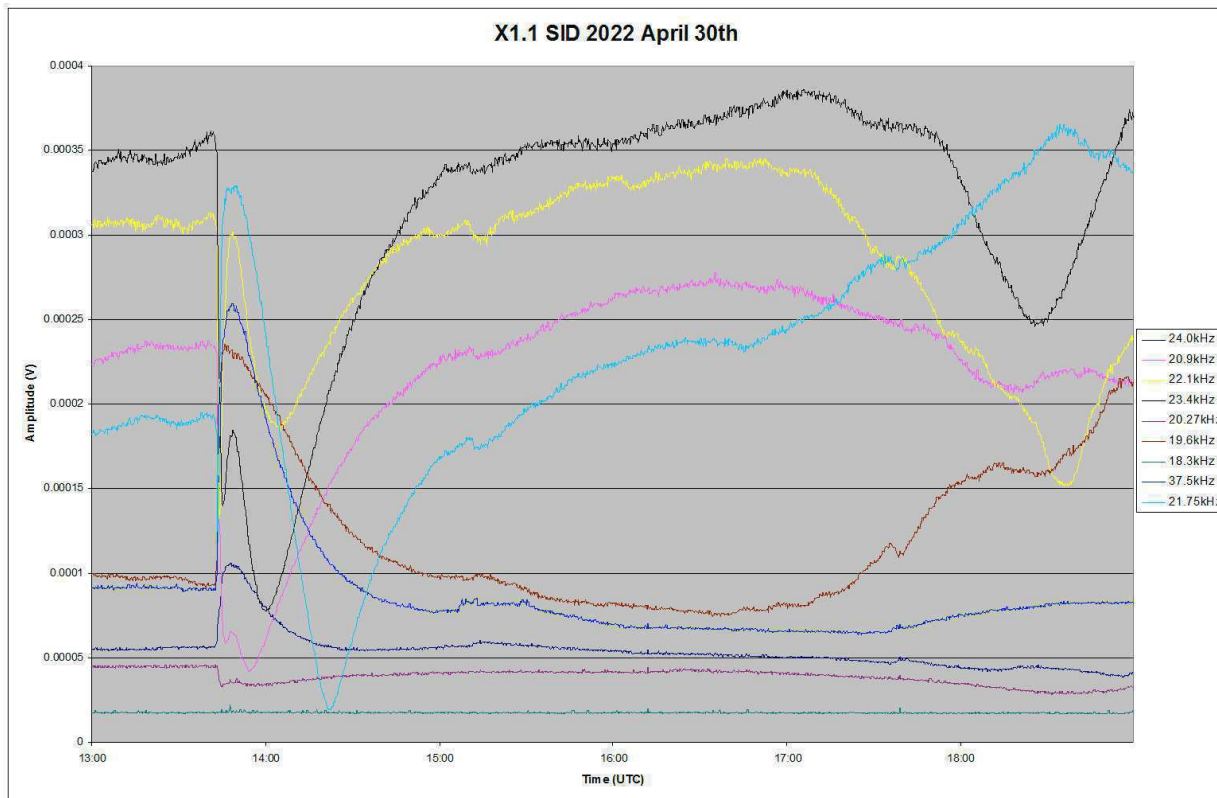
VLF SID OBSERVATIONS.

This month has seen the highest level of solar activity so far in cycle 25, with 99 individual flares recorded and 132 SIDs. We are about three years into the cycle, and this count compares well with the 102 flares recorded in 2011 September, three years into solar cycle 24. The day length is increasing rapidly at this time of year, and so the figures may be slightly distorted by the longer recording period available each day. We have also gained more observers over the years, along with more experience in analysing the recordings. April ended with 'a bang', with an X1.1 flare well timed in mid-afternoon.

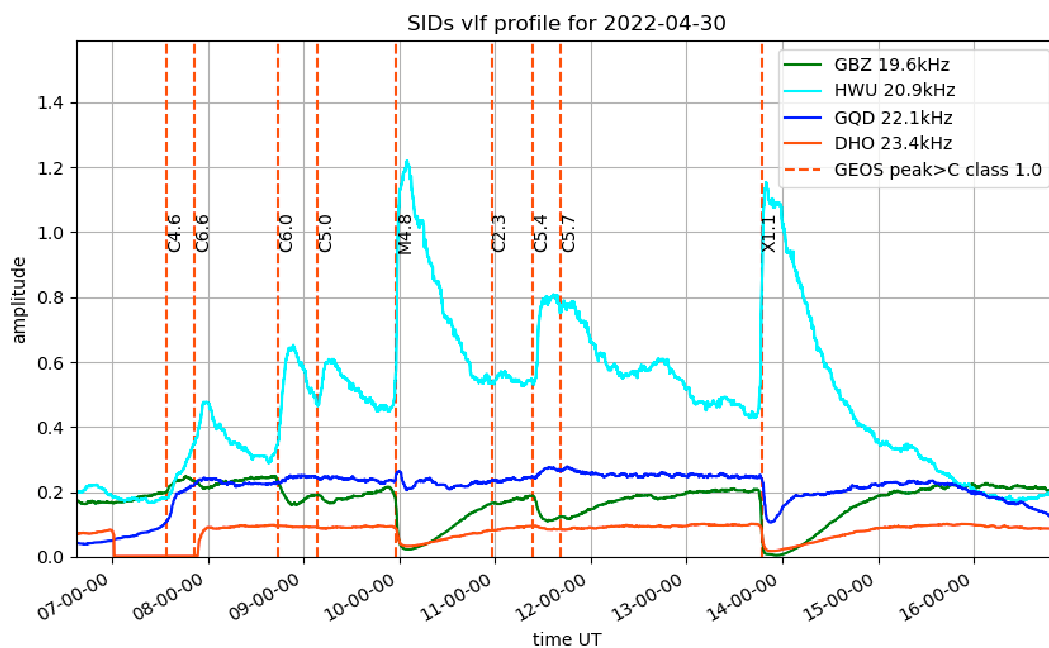


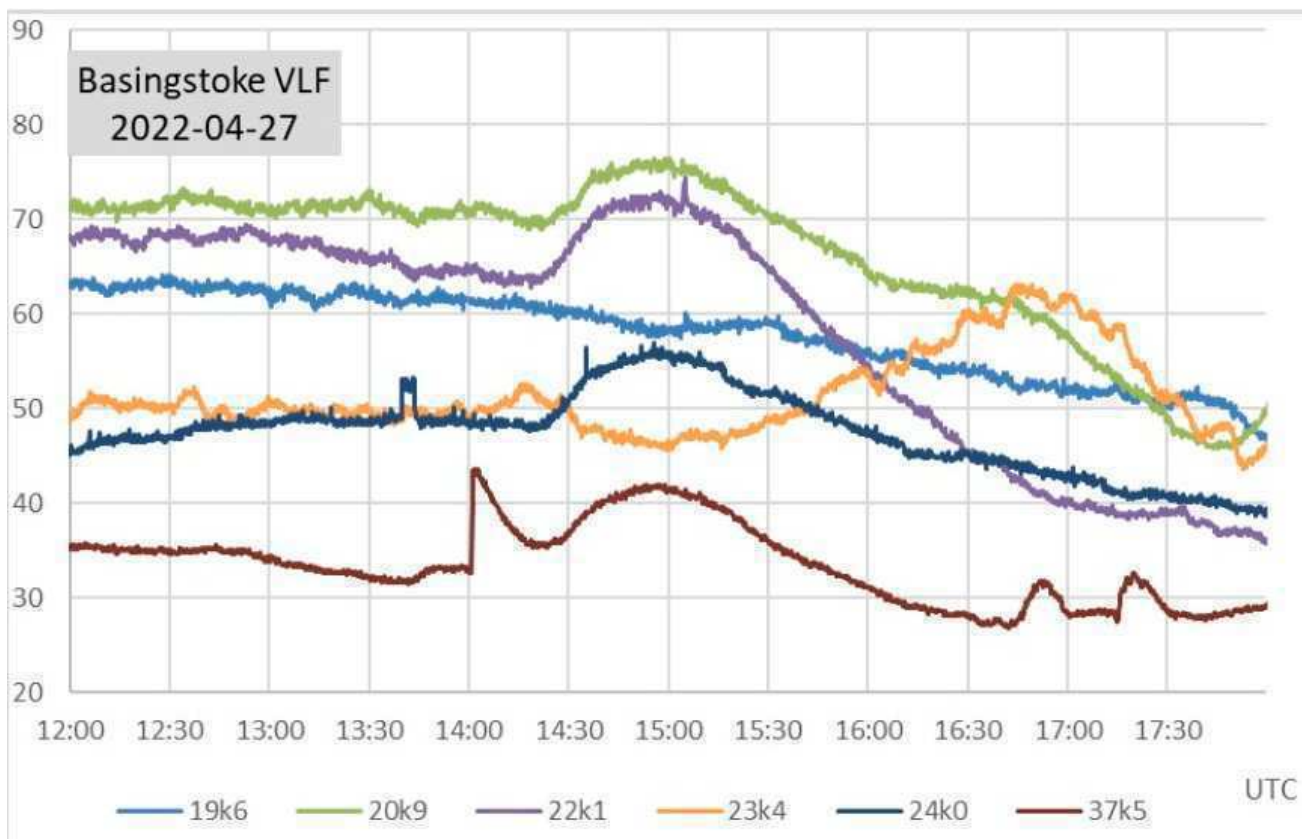
This recording by Roberto Battaiola in Milan shows the X1.1 flare, along with the rest of the day's activity. Both the X1.1 and M4.8 flares have produced clean 'spike and wave' SIDs, while the smaller flares show as ordinary 'shark's fins' SIDs. There is also a strong noise spike just after the C5.0 flare.

The chart on the next page from Mark Edwards shows the X1.1 SIDs in more detail on 9 frequencies:



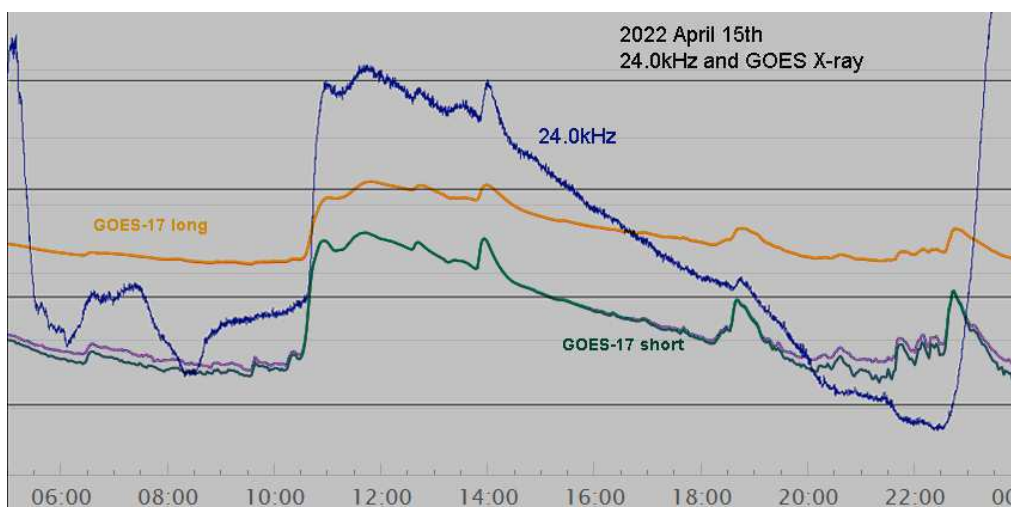
The very rapid rise of the flare is clear on all of the signals, with the peak timings all within a minute of each other. 18.3kHz appears to have been off at the time, while the longer distance paths at 24kHz and 37.5kHz show simple 'shark's fin' SIDs. A small secondary peak is also visible around 15:15UT on most of the signals. The shape of the recorded SID varies with the observer's location. Paul Hyde (Basingstoke) recorded a mixture at different frequencies, while Colin Clements (Lisburn) and Phil Rourke (Broughty Ferry) recorded just 'shark's fins', as did Mark Prescott (Kent) shown in this recording:



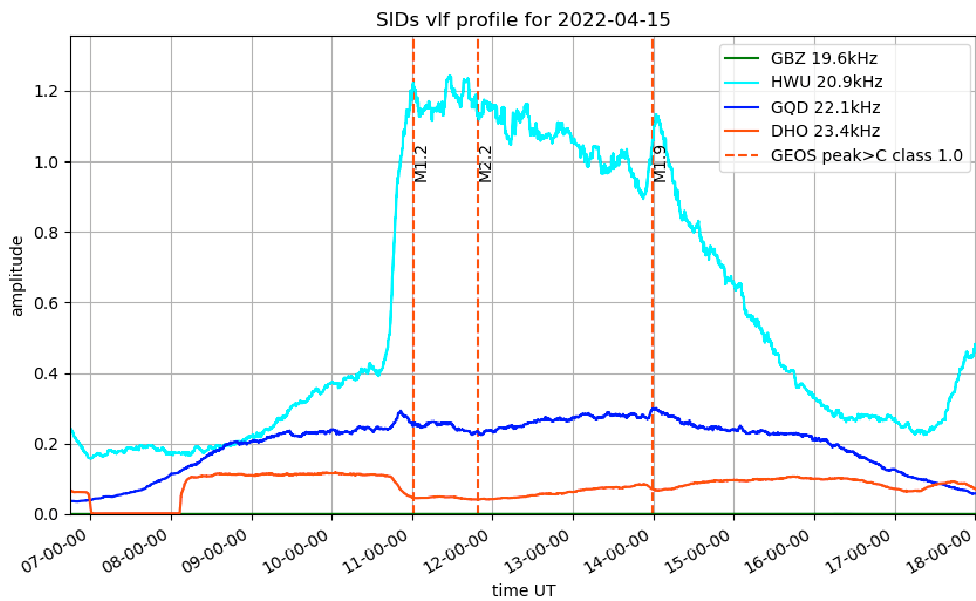


In contrast to the rapid X1.1 flare, the C7.6 flare on the 27th was extremely slow, producing a Slow Ionospheric Disturbance. The above recording by Paul Hyde shows the result. The 37.5kHz signal in particular is very misleading, with magnetically induced pulse at 14:00UT, masking the start of a long 'bump' in place of a normal SID. 23.4kHz shows an inverted response, helping to identify the SID. The X-ray data shown in the SWPC bulletin lists a start time of 14:14, a peak at 14:54, and an end time of 01:27UT the following day. I think that our own timings are very consistent, given that X-ray data.

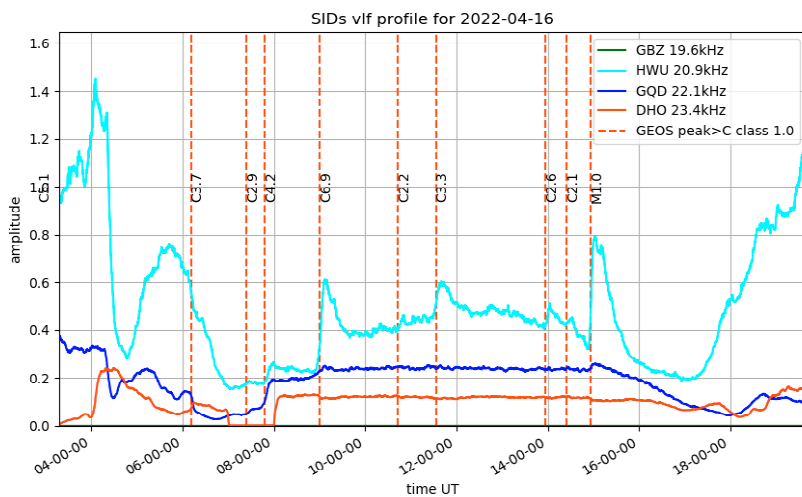
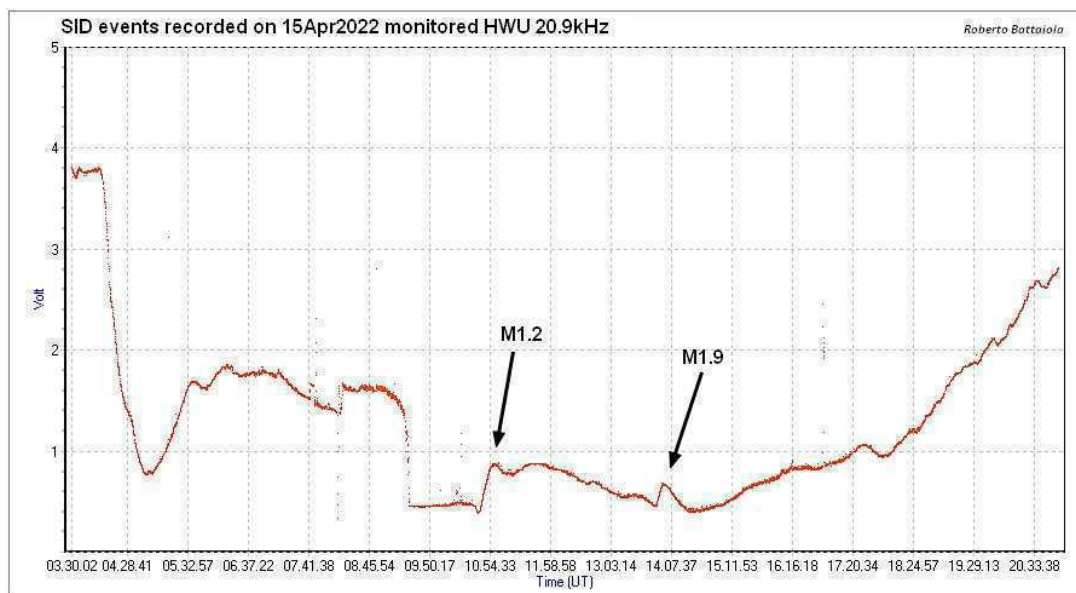
April 15th also produced a multiple flare lasting for most of the day. Mark Edwards has added the satellite X-ray data to his 24kHz signal in this chart:



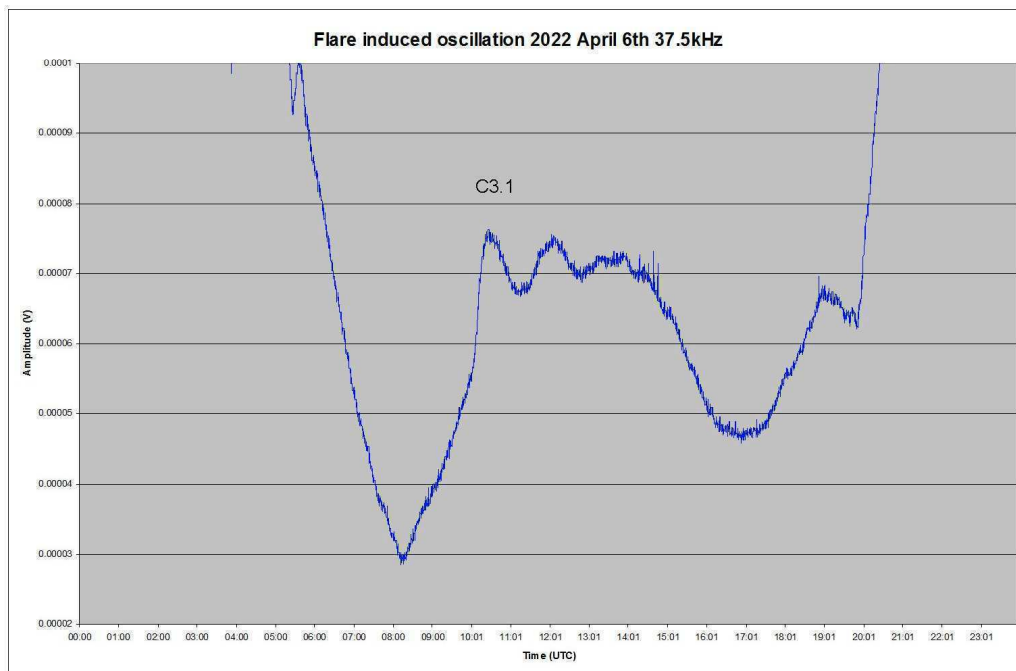
The SWPC lists just two M-class flares (as included in our timing tables), but this clearly shows extra peaks between them. Mark Prescott has a similar response at 20.9kHz:



The 20.9kHz path length would be much shorter (~340km) compared to the Trans-Atlantic 24kHz path, so a surprisingly similar response. Roberto Battaiola also monitored 20.9kHz, with a rather weaker response:

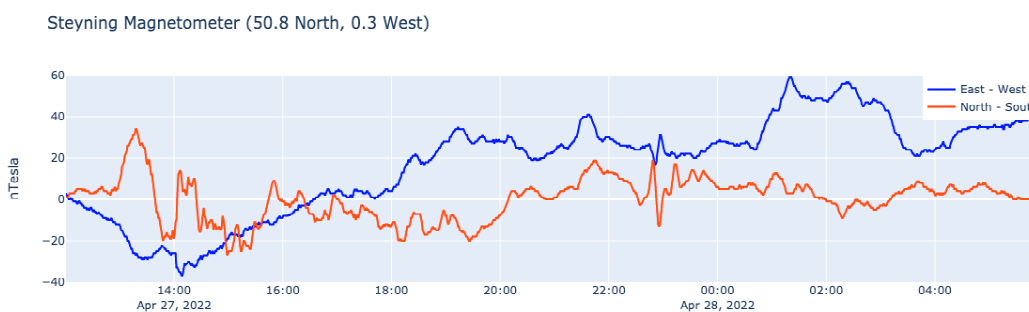


There was a total 15 SIDs recorded on the 16th, the nine listed flares being identified in the above recording by Mark Prescott. Just two events were recorded on the 6th, but Mark Edwards' recording shows an oscillation at 37.5kHz following the C3.1 flare at 11:30UT. There does not appear to be any CME or magnetic connection.

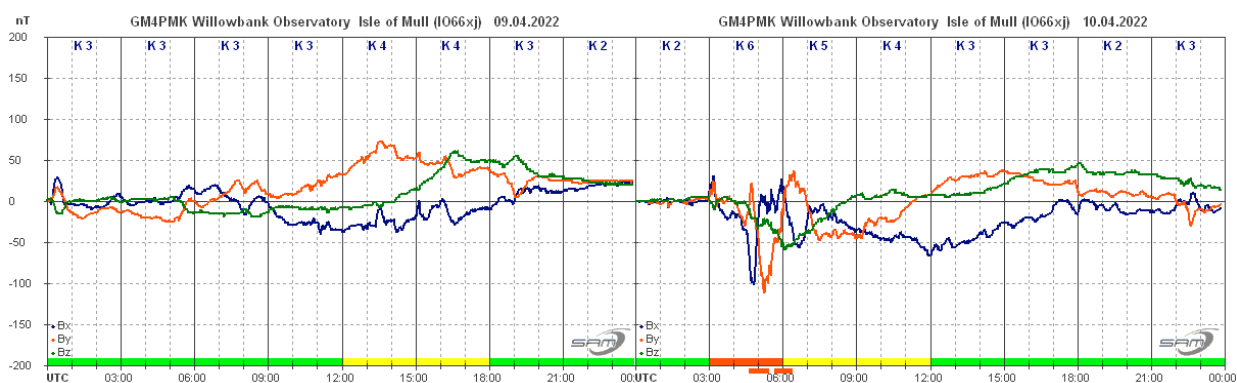


MAGNETIC OBSERVATIONS.

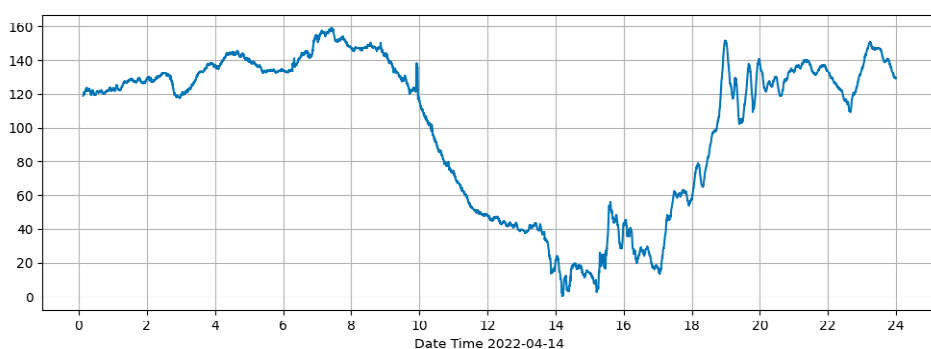
Stuart Green has unfortunately had to shut down his magnetometer due to building work, so there is no month's summary chart for April. Paul Hyde's 37.5kHz signal from the 27th showed a magnetically induced pulse at 14:00UT. This magnetic recording by Nick Quinn shows the disturbance responsible:



The source of this disturbance seems to have been a high speed wind. Despite the large number of flares recorded, there were very few Earth-directed CMEs shown in satellite images. A filament eruption on the 7th produced a small CME resulting in some magnetic disturbance on the 9th and 10th. The recording by Roger Blackwell on the next page shows a very active period between 03 and 06UT on the 10th. There was also a high speed wind present at the same time.

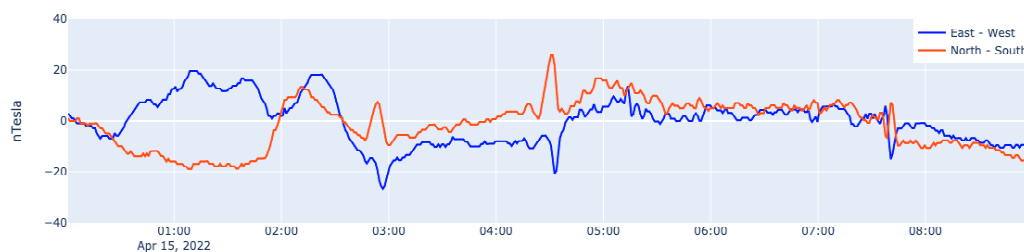


Bredons Hardwick Magnetometer (52.02N,2.13W)



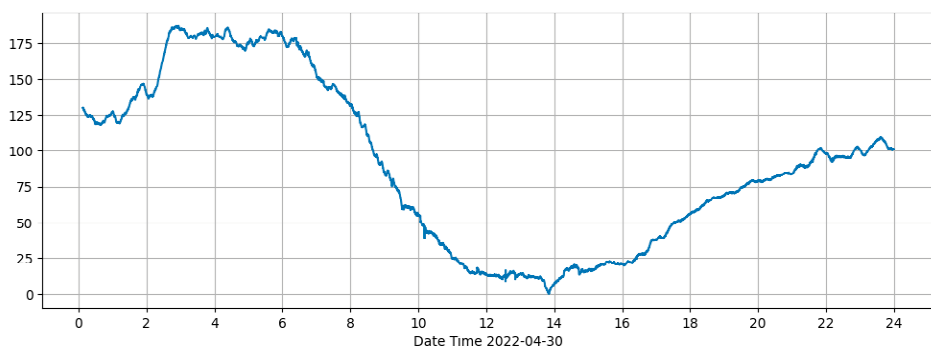
A C1.6 flare at 05:12UT on the 11th did produce a fairly slow CME, arriving in the morning of the 14th. The disturbance later in the afternoon is shown in the recording above by Callum Potter, and through into the 15th by Nick Quinn, below.

Steynning Magnetometer (50.8 North, 0.3 West)



The active region responsible for the X1.1 flare peaking at 13:45 on the 30th (AR12994) was right on the western solar limb, and although satellite images show a CME, it was not Earth directed. There is a possible SFE shown in my own recording, and also in the recording by Callum Potter:

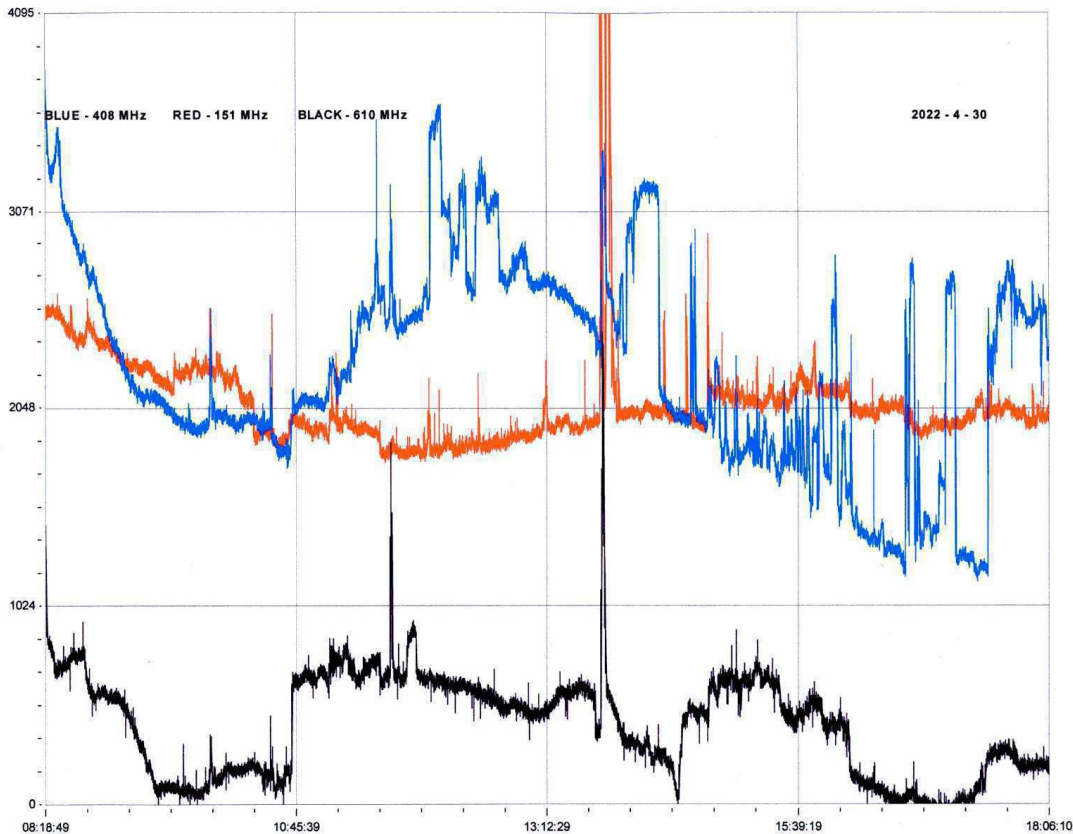
Bredons Hardwick Magnetometer (52.02N,2.13W)



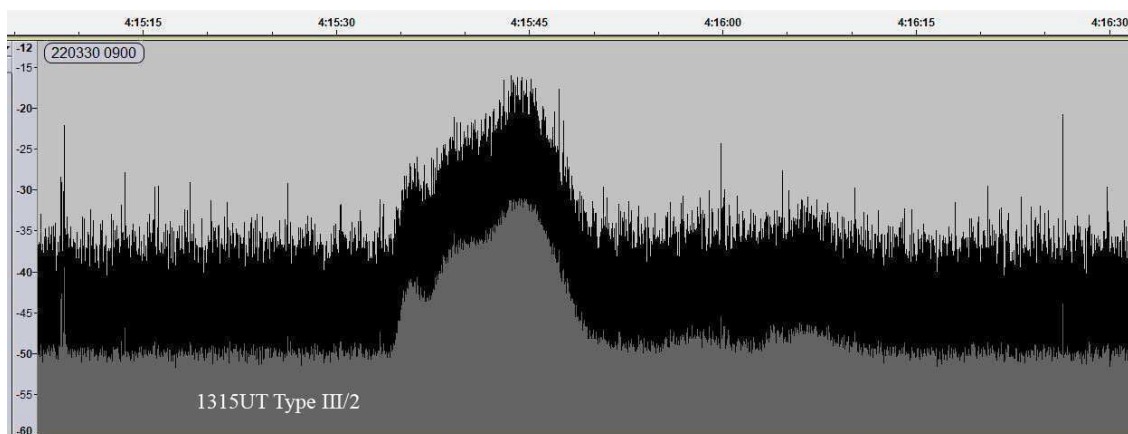
Magnetic observations received from Roger Blackwell, Colin Clements, Paul Hearn, Callum Potter, Nick Quinn and John Cook.

SOLAR EMISSIONS.

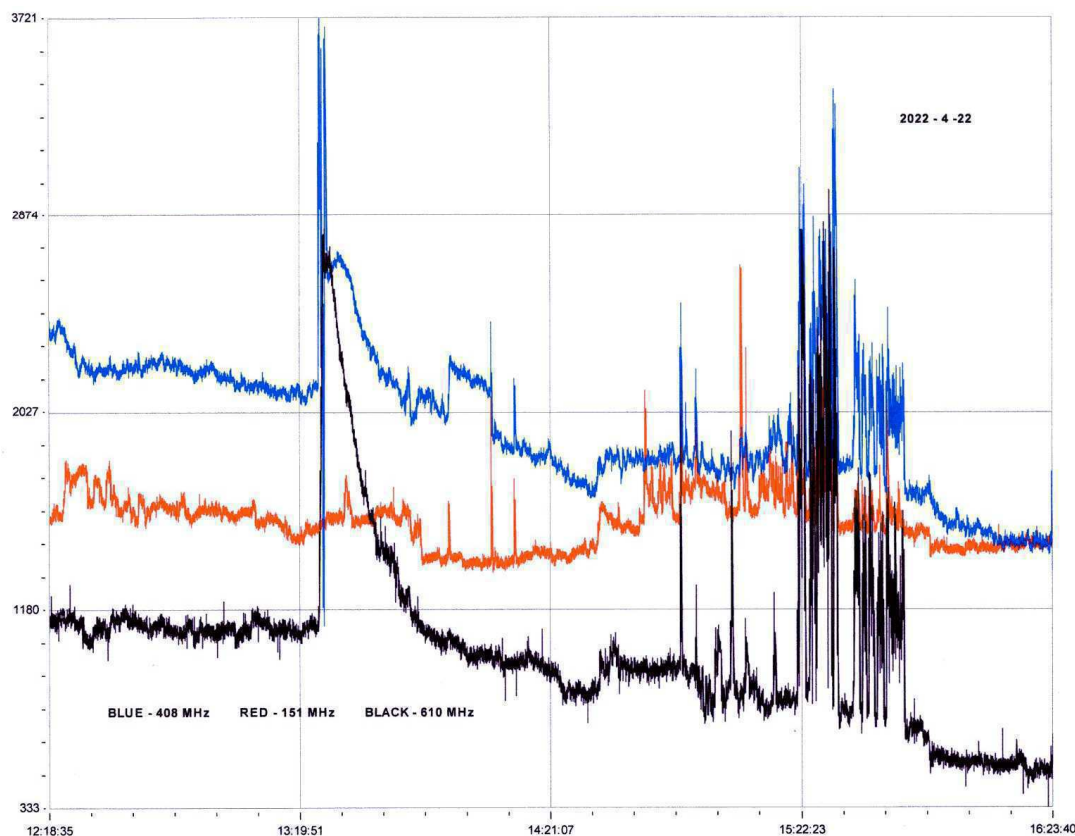
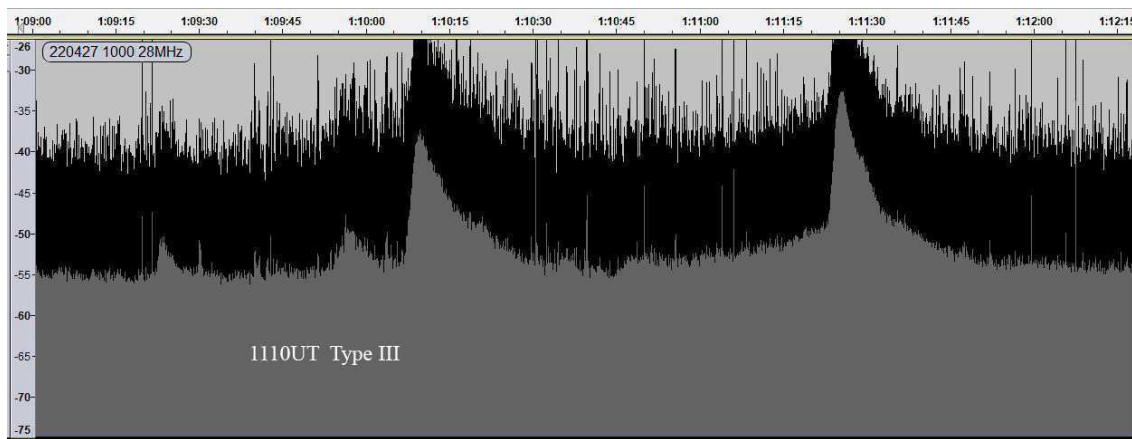
The strong activity on the 30th was accompanied by radio noise bursts detected across the spectrum. Colin Clements recorded this activity at VHF:



The strong spike around 13:30 is possibly linked to the X1.1 flare. Colin Briden made observations at 28MHz:

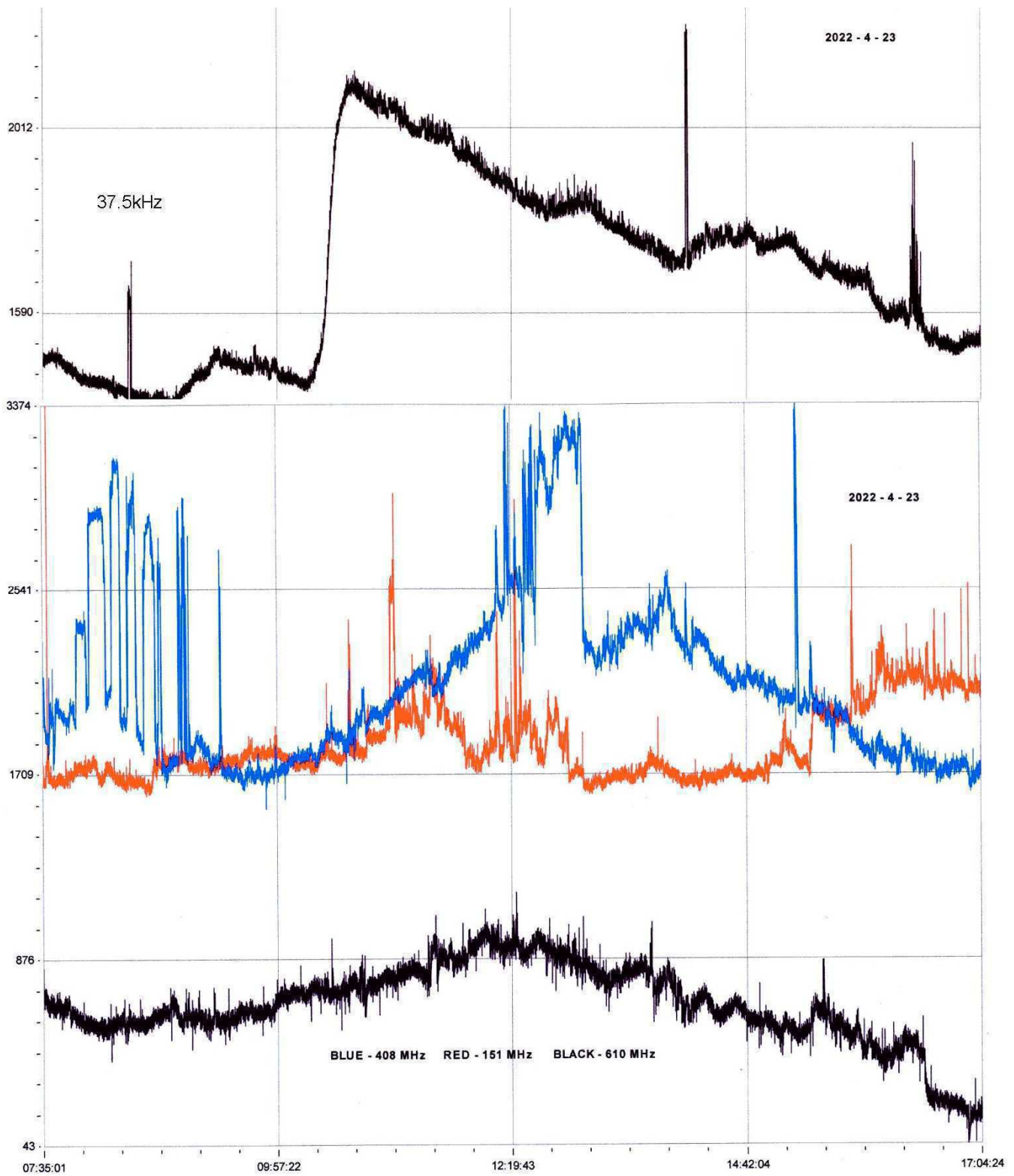


This shows a rise of about 30dB lasting just over 20 seconds, very powerful compared to previous bursts. He also made an audio recording of the event, available if anyone is interested. A much weaker 28MHz burst was recorded on the 27th. The two peaks shown on Colin Briden's recording are only about 15–20dB, but the timing matches well with the smaller C2 flare shown in our SID list. In these charts, the grey area represents the averaged data, while the black area shows individual data peaks.



This recording by Colin Clements shows VHF activity on the 22nd. The M3.4 flare peaking about 13:30UT produced a very strong and distinct noise burst at 408MHz (blue) and 610MHz (black), with a smaller burst at 408MHz (red). All three frequencies also show a very noisy period from about 14:50 to 15:50. This includes the C2.0 flare at about 15:10, but the X-ray satellite data was fairly flat otherwise.

The chart on the next page shows the 37.5kHz signal along with the three VHF frequencies recorded by Colin Clements on the 23rd. The chart covers 07:35 to 17:00UT. It shows what appears to be a very strong SID at 37.5kHz, starting at 10:17 and lasting until 14:06. This is accompanied by a gentle rise and fall at 610MHz and a stronger emission at 408MHz. There is no evidence of a flare in the X-ray data at this time, and none of our observations show any significant magnetic activity. An interesting and rather puzzling observation.



	Xray class	Observers	John Cook (23.4kHz/22.1kHz)				Roberto Battaola 20.9kHz				Paul Hyde (22.1kHz/24kHz)				Mark Edwards (24.0/22.1/37.5kHz)				Colin Clements (37.5kHz/23.4kHz)			
			Tuned radio frequency receiver, 0.58m frame aerial.				Modified AAVSO receiver.				Spectrum Lab / PC 1.5m frame aerial.				Spectrum Lab / PC 2m loop aerial.				Tuned Radio Frequency receivers, 0.76m screened 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													10:38	10:52	11:00	1				
1	C2.5	1													11:35	11:41	11:51	1-				
1	C2.1	1													12:30	12:31	12:34	1-				
1	C1.9	1													12:52	12:54	13:02	1-				
1	C2.3	1													13:32	13:34	?	-				
1	C2.8	3	13:40	13:45	14:05	1					13:38	13:45	14:27	2+	13:40	13:45	13:59	1				
1	C2.2	1													14:29	14:34	14:43	1-				
1	C1.8	1													16:16	16:16	16:20	1-				
2	C2.3	1					07:15	07:19	07:33	1-					07:42	07:46	07:53	1-				
2	C6.4	5					07:40	07:50	07:57	1-	07:39	07:45	08:04	1	07:42	07:46	07:53	1-				
2	C6.5	6	08:20	08:25	08:38	1-	08:17	08:24	08:36	1	08:17	08:26	08:58	2	08:19	08:25	08:30	1-				
2	C3.4	1													08:39	08:43	09:05	1+				
2	C2.6	7	10:43	10:47	11:11	1+	10:35	10:47	11:00	1	10:40	10:47	11:07	1+	10:43	10:48	10:53	1-				
2	M3.9	10	13:22	13:51	15:48	1+	13:02	13:26	13:48	2+	12:59	13:41	17:28	3+	13:19	13:51	17:35	3+	13:23	13:52	15:51	3+
2	M4.3	8	17:40	17:47	18:09	1+					17:38	17:48	18:36	2+	17:39	17:46	18:30	2+	17:43	17:50	18:17	2
3	C6.4	9	12:56	13:11	14:15	2+	12:51	13:11	13:35	2	12:52	13:08	14:00	2+	12:54	13:10	13:48	2+	12:57	13:14	14:02	2+
3	?	1													15:23	15:42	15:55	1+				
3	C3.7	2									16:49	17:01	17:19	1+	16:50	17:05	17:23	2				
4	C2.0	3	09:24	09:31	09:46	1					09:23	09:32	10:01	2	09:26	09:44	09:59	2				
4	C3.1	7	10:06	10:27	11:00	2+	09:59	10:32	11:02	2+	10:03	10:17	11:11	2	10:06	10:40	10:43	2				
8	C1.0	1									14:55	15:10	15:45	2+	11:18	11:24	11:35	1-				
8	C2.4	4													14:56	15:14	15:39	2	14:45	15:18	15:47	2+
8	?	1													16:22	16:24	16:30	1-				
9	C4.7	9	11:06	11:21	12:01	2+	11:03	11:17	11:41	2	11:04	11:22	11:57	2+	11:06	11:15	?	-	11:08	11:29	12:54	3
9	?	2													11:17	11:29	11:53	2				
12	C3.8	3	06:44	06:51	?	-					06:43	06:47	06:56	1-	06:45	06:51	07:04	1				
12	C1.2	2									09:53	09:57	10:45	2+	09:54	09:59	10:18	1				
12	B8.8	1													14:33	14:44	14:54	1				
12	C1.1	1													15:00	15:02	15:09	1-				
12	C1.2	1													17:33	17:38	17:48	1-				
15	M1.2	8					10:27	10:57	11:10	2	10:33	10:54	?	-	10:37	10:57	?	-	10:40	10:53	15:32	3+
15	?	1													11:11	11:45	?	-				
15	?	1													12:37	12:44	?	-				
15	?	1													13:16	13:28	?	-				
15	M1.9	7					13:45	13:58	14:23	2	13:51	13:59	14:30	2	13:52	13:59	14:26	2	13:55	14:04	15:01	2+
15	C4.4	1													18:39	18:44	18:55	1-				
16	C3.7	1					06:00	06:13	06:23	1												
16	C2.9	1									07:20	07:25	07:39	1	07:44	07:48	07:55	1-				
16	C4.2	2									07:41	07:53	08:40	2+	07:41	07:48	07:55	2				
16	?	1													08:04	08:18	08:49	2				
16	?	1													08:22	08:24	08:48	1+				
16	C6.9	9	08:52	09:00	09:50	2+	08:44	09:01	09:08	1	08:49	09:03	09:36	2+	08:53	09:03	09:31	2	08:55	09:07	09:40	2
16	?	1													09:53	09:56	10:15	1				
16	C2.2	1													10:41	10:45	10:55	1-				
16	C3.3	6	11:27	11:32	11:59	1+					11:27	11:33	12:15	2+	11:27	11:39	12:08	2				
16	?	1													11:50	11:57	?	-				
16	?	1													12:17	12:24	13:04	2+				
16	C2.6	6	13:53	13:58	14:11	1-					13:53	14:00	14:12	1	13:56	14:00	14:14	1-				
16	C2.1	3									14:21	14:25	14:37	1-	14:20	14:24	14:35	1-				
16	M1.0	9	14:49	14:56	15:46	2+					14:50	14:58	15:59	2+	14:51	14:59	15:57	2+	14:56	15:02	15:30	2
16	?	1													15:06	15:07	16:00	2+				
17	C3.9	5	09:38	09:41	09:45	1-					09:37	09:40	10:19	2	09:40	09:48	10:05	1				
17	C7.7	9	16:05	16:09	16:20	1-					16:05	16:10	16:45	2	16:05	16:10	16:48	2	15:59	16:14	16:59	2+
17	?	1													16:56	17:00	17:08	1-				
17	C6.2	5									17:57	18:05	18:24	1+	17:52	18:06	18:32	2	18:02	18:09	18:32	1+
17	M1.5	1													20:01	20:05	20:23	1				
18	M1.3	8	07:46	07:49	08:11	1	07:40	07:48	07:50	1-	07:41	07:50	08:50	2+	07:45	07:50	08:12	1+				
18	C2.5	4	09:10	09:18	09:32	1					09:10	09:16	09:28	1-	09:12	09:19	09:23	1-				
18	M1.1	10	10:13	10:27	11:19	2+	10:09	10:28	10:54	2	10:10	10:31	11:08	2+	10:14	10:30	11:23	2+	10:17	10:33	11:36	2+
18	?	1													11:29	11:46	12:05	2				
18	?	1													12:21	12:31	13:14	2+				
18	C2.0	5	13:19	13:25	13:30	1-									13:17	13:27	13:44	1+				
18	C3.9	7	14:15	14:29	14:57	2					14:16	14:27	15:01	2	14:14	14:31	15:22	2+				
18	M1.9	9	17:21	17:24	17:39	1+					17:21	17:27	18:07	2+	17:20	17:26	18:02	2	17:24	17:31	18:01	2
19	C6.3	8	09:51	09:54	10:20	1+					09:50	09:54	10:25	2	09:51	09:55	10:20	1+				
19	C3.1	5									10:59	11:03	11:10	1-	11:00	11:02	11:37	2				
19	?	1													13:36	13:44	13:50	1-				

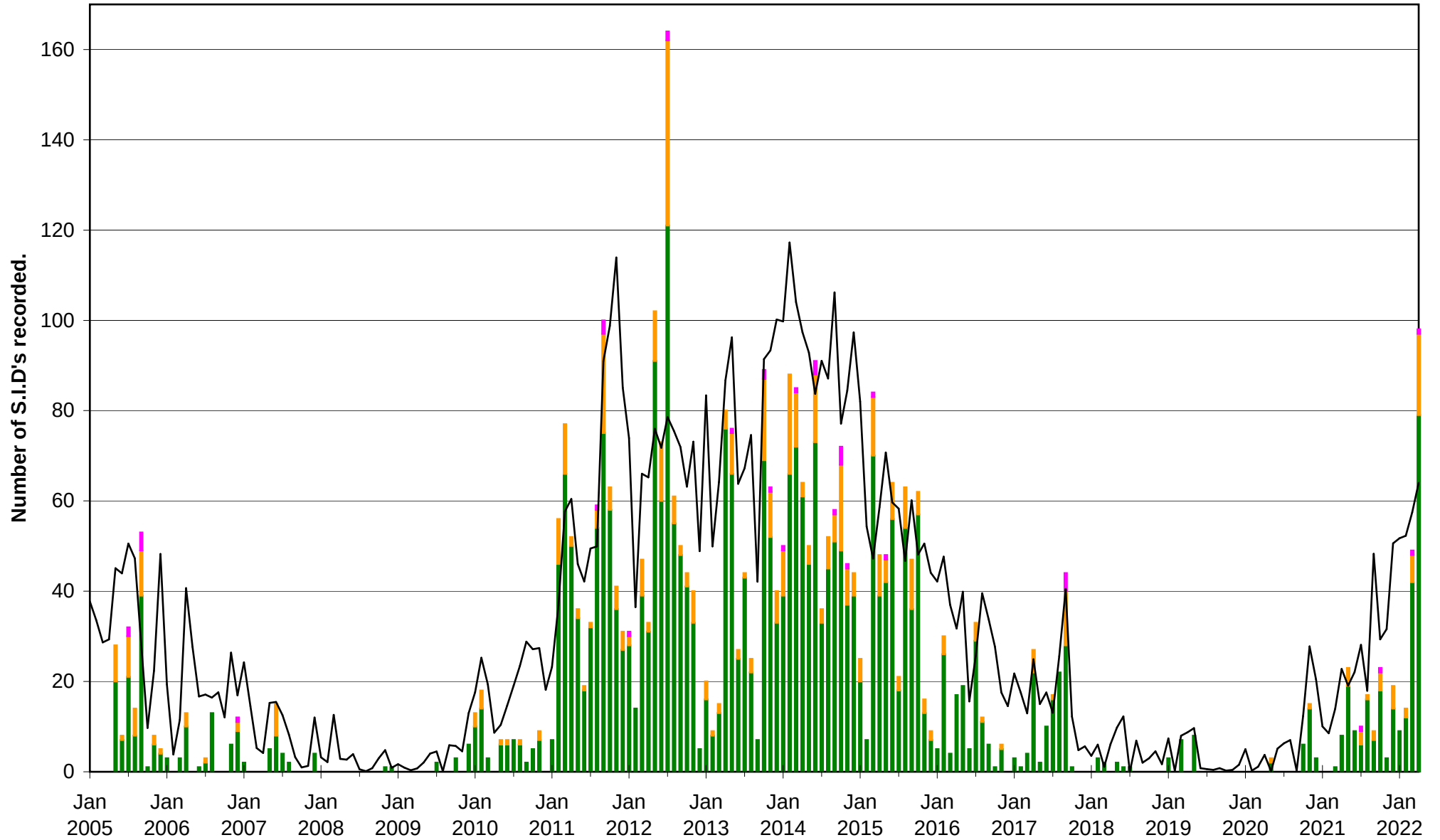
2022 APRIL.

[illegible]

	X-ray class	Colin Briden (22.1kHz)	Andrew Lutley (23.4kHz)	Peter Meadows (23.4kHz)	John Elliott (19.6kHz)	Mark Prescott (20.9kHz)
		Spectrum Lab / PC, 1.2m frame aerial.	Tuned radio frequency receiver, 0.6m frame aerial.	Tuned radio frequency receiver, 0.6m frame aerial.	Tuned radio frequency receiver, 0.5m 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	C2.5					
1	C2.1					
1	C1.9					
1	C2.3					
1	C2.8					
1	C2.2					
1	C1.8					
2	C2.3					
2	C6.4					
2	C6.5					
2	C3.4					
2	C2.6					10:45 10:53 11:01 1-
2	M3.9					13:12 13:46 16:21 3+
2	M4.3					17:02 17:47 17:55 2+
3	C6.4					12:57 13:15 14:12 2+
3	?					
3	C3.7					
4	C2.0					
6	C3.1					10:09 10:29 11:15 2+
8	C1.0					
8	C2.4					
8	?					
9	C4.7					11:06 11:16 ? -
9	?					? 11:31 12:08 -
12	C3.8					
12	C1.2					
12	B8.8					
12	C1.1					
12	C1.2					
15	M1.2					10:37 11:01 ? -
15	?					
15	?					
15	?					
15	M1.9					13:53 14:02 16:23 3+
15	C4.4					
16	C3.7					
16	C2.9					
16	C4.2					
16	?					
16	?					
16	C6.9					08:55 09:07 09:39 2
16	?					
16	C2.2					
16	C3.3					11:29 11:40 12:19 2+
16	?					
16	?					
16	C2.6					13:56 14:02 ? -
16	C2.1					14:23 14:31 14:42 1
16	M1.0					14:53 15:02 15:58 2+
16	?					
17	C3.9					09:39 09:50 10:23 2
17	C7.7					16:06 16:14 16:53 2+
17	?					
17	C6.2					
17	M1.5					
18	M1.3					07:47 07:55 08:48 2+
18	C2.5					
18	M1.1					10:15 10:34 11:22 2+
18	?					
18	?					
18	C2.0					13:14 13:27 13:49 2
18	C3.9					14:18 14:34 15:14 2+
18	M1.9					17:21 17:30 17:51 1+
19	C6.3					09:51 09:59 10:20 1+
19	C3.1					11:00 11:07 12:03 2+
19	?					
19	C3.3					
19	C2.2					14:02 14:13 14:41 2
19	?					
19	?					
19	?					
19	C4.4					
20	C4.2					
20	C5.1					
20	?					
20	C3.0					
20	?					
20	M1.9					12:41 12:55 13:43 2+
20	C3.1					
20	?					
20	?					
20	?					
20	?					
20	C7.7					
20	C8.9					
21	C5.4					12:51 13:01 13:37 2+
21	?					
21	C3.1					
22	C3.5					12:26 12:33 13:03 2
22	M3.4				13:20 13:50 14:15 2+	13:25 13:32 14:31 2+
22	C2.0					
23	C1.3					
24	?					
25	M1.1					
25	C1.6					
25	C3.0					
25	C6.8					
26	C2.2					
26	C2.1					11:15 11:26 ? -
26	C2.8					
26	C2.9					12:55 13:08 14:15 2+
26	C3.2					
26	C3.9					
27	C3.3					08:59 09:15 09:44 2
27	?					
27	C2.0					
27	?					
27	C7.6					14:28 14:58 15:55 3
28	C2.1					
28	C3.7					
29	M1.2					07:26 07:39 08:15 2+
29	C2.4					
29	C1.9					
29	M1.2					
30	M2.6					
30	M1.4					
30	C6.6					07:36 07:58 08:29 2+
30	C6.0					08:40 08:51 09:07 1+
30	C5.0					09:07 09:16 09:49 2
30	M4.8					09:56 10:05 10:49 2+
30	C2.3					
30	C5.4					11:22 11:39 12:19 2+
30	C5.7					
30	?					
30	?					
30	X1.1				13:40 13:45 14:30 2+	13:44 13:49 15:17 3
30	?					
30	C3.2					
30	C4.0					
30	C3.9					
30	M1.9					

VLF flare activity 2005/22

C M X — Relative sunspot number



BARTELS DIAGRAM

ROTATION	KEY:	DISTURBED.	ACTIVE	SFE	B, C, M, X = FLARE MAGNITUDE.	Synodic rotation start (carrington's).
2529	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	2019 January			2213
F						
2530	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 17	2019 February			2214
F						
2531	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 14 15 16 17	2019 March			2215
F						
2532	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 13 14 15 16 17	2019 April			2216
F						
2533	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 8 9 10 11 12 13 14 15 16 17	2019 May			2217
F						
2534	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 6 7 8 9 10 11 12 13 14 15 16 17	2019 June			2218
F						
2535	6 7 8 9 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 8 9 10 11 12 13 14 15 16 17	2019 July			2219
F						
2536	3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2019 August			2220
F						
2537	30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2019 September			2221
F						
2538	26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2019 October			2222
F						
2539	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	2019 November			2223
F						
2540	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2019 December			2224
F						
2541	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2020 January			2225
F						
2542	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2020 February			2226
F						
2543	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2020 March			2227
F						
2544	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 31	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2020 April			2228
F						
2545	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2020 May			2229
F						
2546	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2020 June			2230
F						
2547	230 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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2020 July			2231
F						
2548	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 17	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2020 August			2232
F						
2549	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 14	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2020 September			2233
F						
2550	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 10	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2020 October			2234
F						
2551	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 6	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2020 November			2235
F						
2552	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 3	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2020 December			2236
F						
2553	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2021 January			2237
F						
2554	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 26	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2021 February			2238
F						
2555	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 23	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2021 March			2239
F						
2556	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2021 April			2240
F						
2557	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 15	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2021 May			2241
F						
2558	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 12 13 14	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2021 June			2242
F						
2559	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 10	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2021 July			2243
F						
2560	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 6 7	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2021 August			2244
F						
2561	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2021 September			2245
F						
2562	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2021 October			2246
F						
2563	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2021 November			2247
F						
2564	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2021 December			2248
F						
2565	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2022 January			2249
F						
2566	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2022 February			2250
F						
2567	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2022 March			2251
F						
2568	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 8 9	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2022 April			2252
F						
2569	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2022 May			2253
F						
2570	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2022 June			2254
F						
2571	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2022 July			2255
F						
2572	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2022 August			2256
F						
2573	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2022 September			2257
F						
2574	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	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	2022 October			2258
F						