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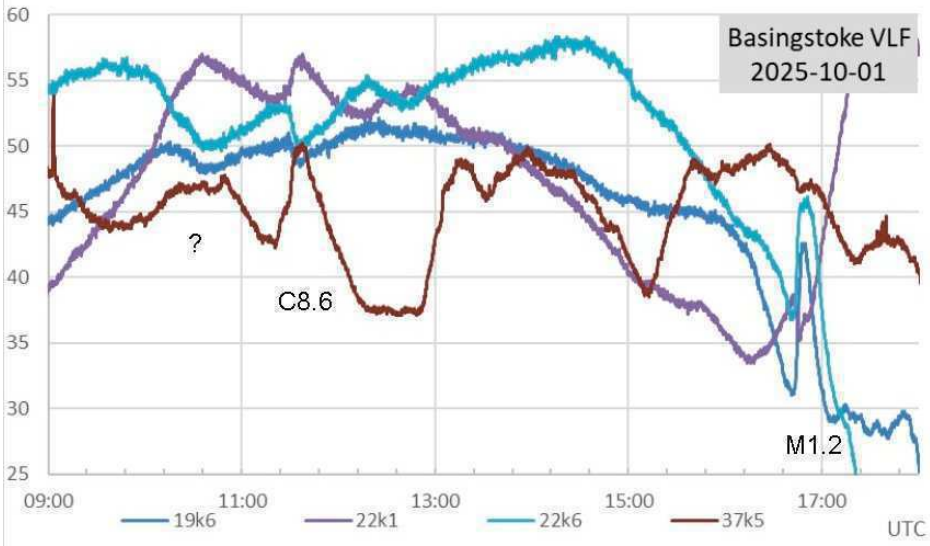
BAA Radio Astronomy Section. Director Paul Hearn.

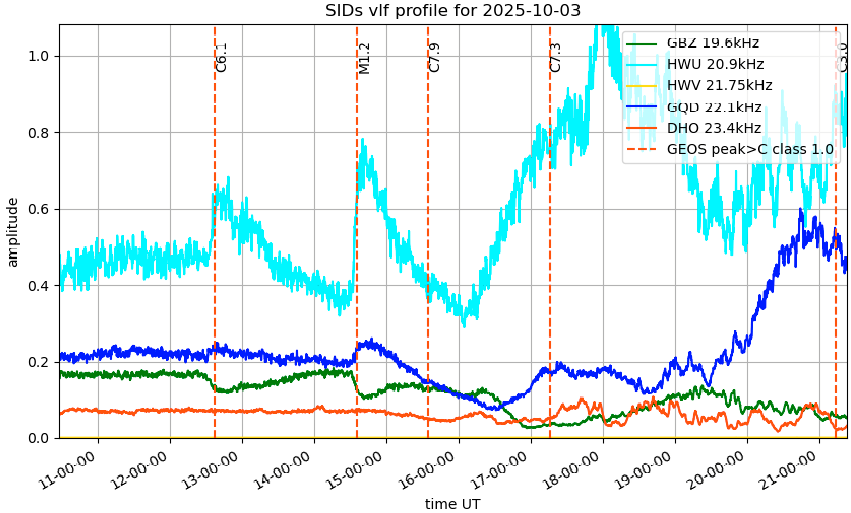
RADIO SKY NEWS 2025 OCTOBER.

VLF SID OBSERVATIONS.

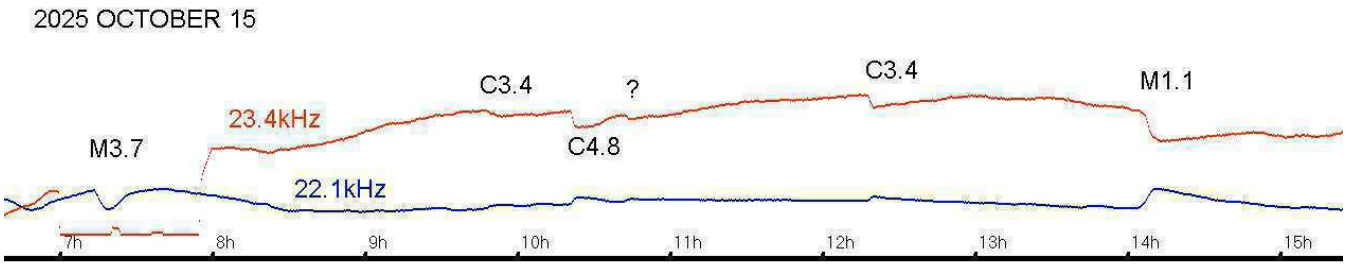
Flaring activity in October was a little higher, with 29 C and 14 M-class flares recorded as SIDs. Most of this activity occurred over the 9th to 18th, with nothing recorded after the 20th. There were a few flares at the start of the month, Paul Hyde's recording showing the 1st:



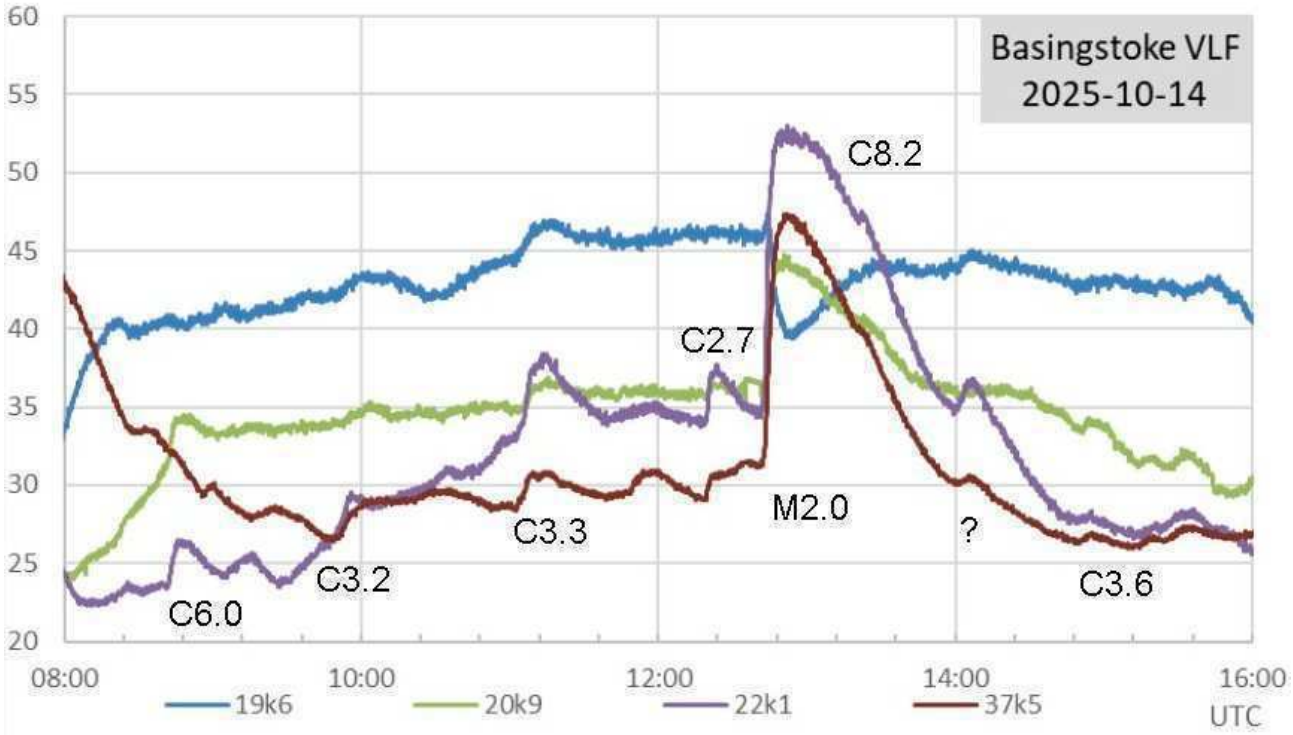
37.5kHz shows additional peaks around 13 to 15UT, most likely from magnetic activity. Mark Prescott's chart shows the 3rd:



The strong M1.2 flare mid-afternoon shows well at all of the frequencies on Mark's recording. The C7.3 was rather too late, hidden by the early October sunset.

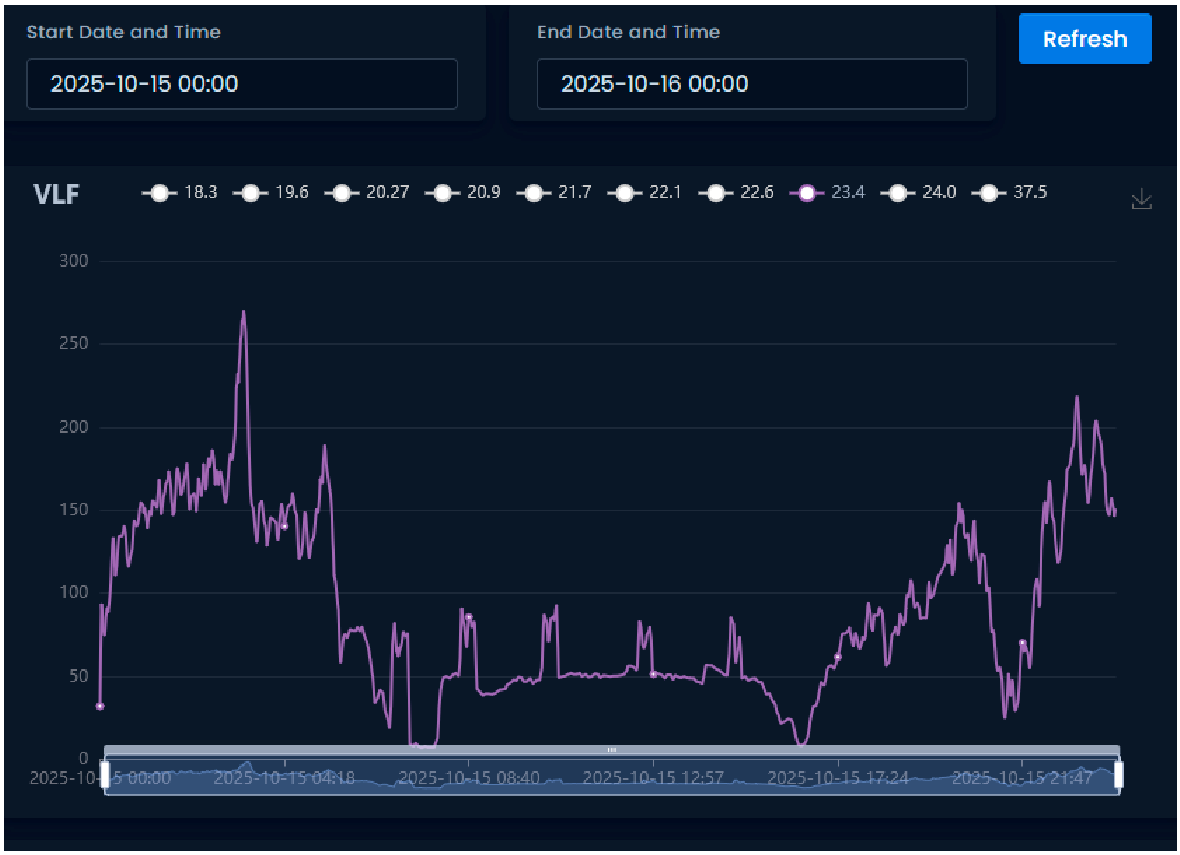


The strongest flare was the M3.7 peaking at 07:19UT on the 15th. My own recording shows a dip in the 22.1kHz signal, but 23.4kHz was taking its usual morning break. The M1.1 flare later in the afternoon has a good matching pair of SIDs. The chart also shows the undocumented event at 10:44, marked with a ?. This shows on both signals, and was recorded by other observers, so appears to be genuine.



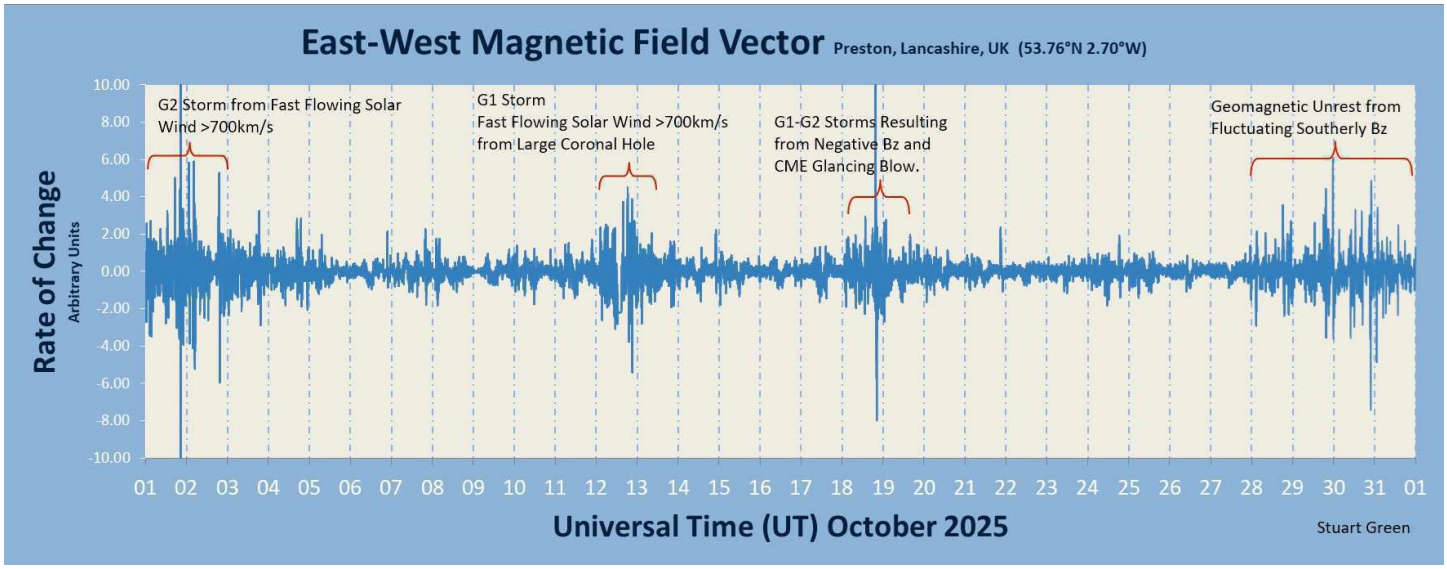
The 14th was also very active, shown in Paul Hyde's recording. The M2.0 flare was widely recorded, but the C8.2 flare has been hidden in its decay phase. There is a smaller event just after 14:00. It is listed in the satellite data, but without any magnitude. The small C3.6 at 15UT was also missed, as sunset was starting to affect most of the signals.

Over the years many forms of VLF interference have been reported, but we now have a new one. Andrew Thomas had a new heat pump fitted recently, its control electronics in line with his VLF loop aerial. The CE regulations did not cover frequencies below 150kHz, allowing some solar panel installations to cause problems. The circuitry in a heat pump would be very different, but appears to be a problem. Andrew's 23.4kHz signal recorded on the 15th is shown on the next page:



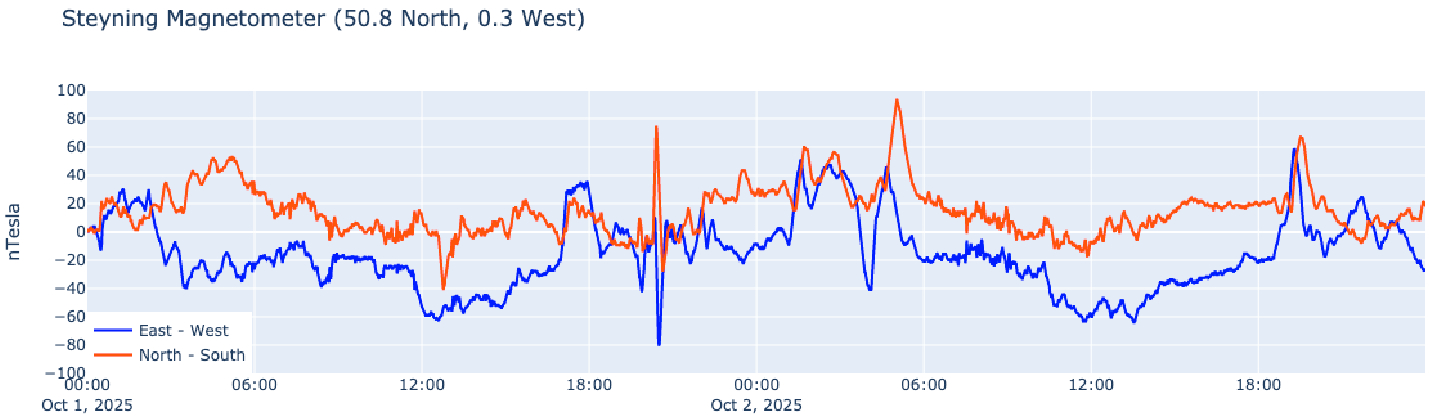
The pulses are clearly visible, much stronger than the flares. Andrew is experimenting with ways to avoid the problem.

MAGNETIC OBSERVATIONS.

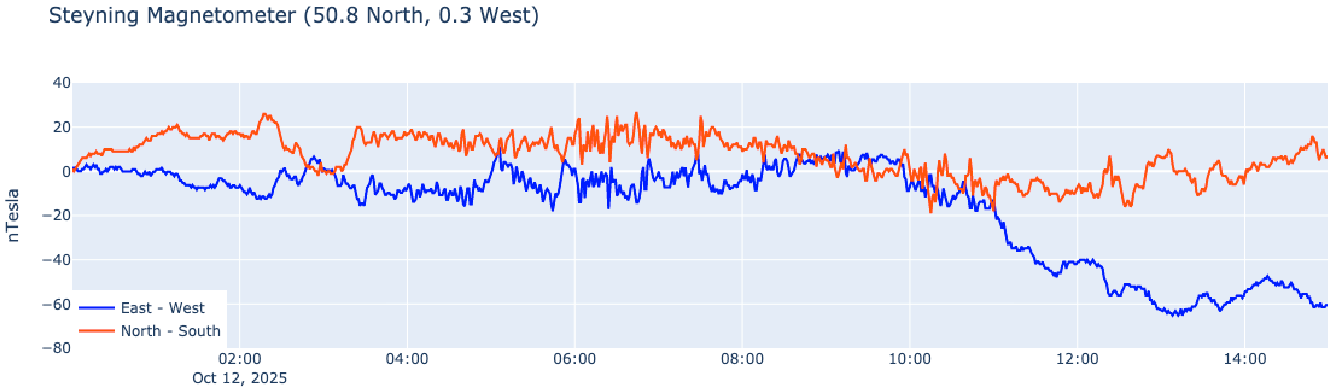


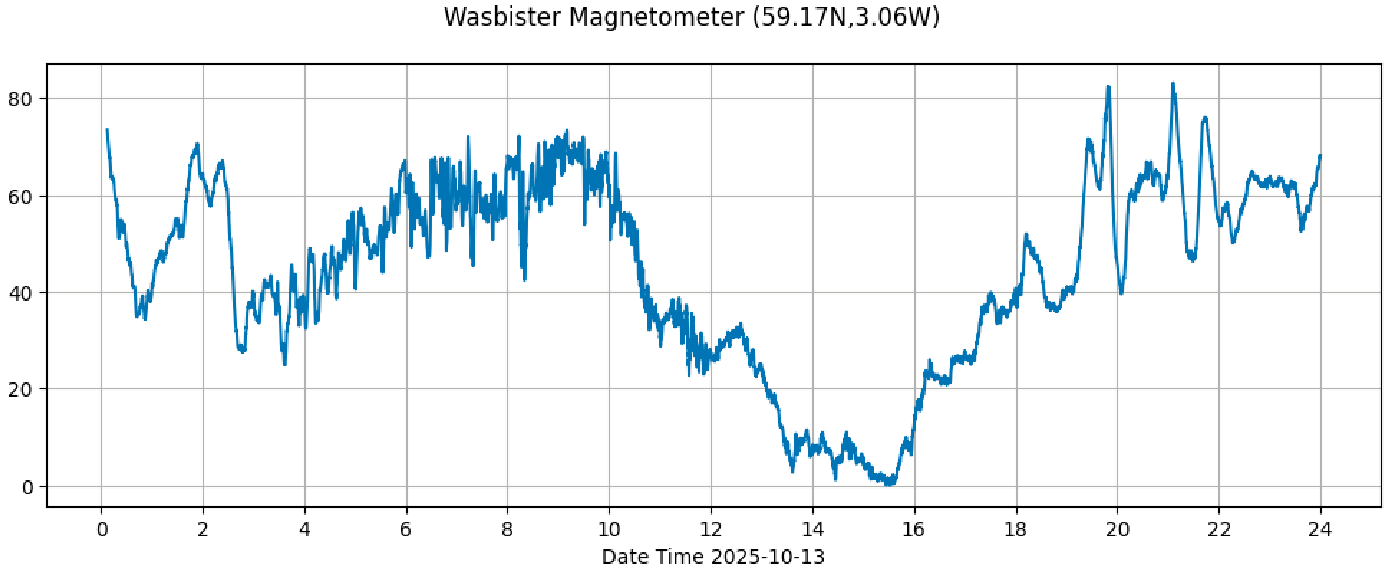
Stuart Green's summary of magnetic activity in October shows a few periods of strong disturbance. Most of this was associated with fast solar winds from coronal holes. The September summary showed an active period on the 29th and 30th from a coronal hole. This continued into October with a very active period on the 1st and 2nd. Nick Quinn's recording shows this disturbance, including a strong spike at about 20:30UT. Satellite data does show a number of CMEs at the end of September, although it is not clear whether this spike

is from a CME arrival. Some of this disturbance was seen on the 37.5kHz signal in Paul Hyde's recording on page 1. Activity then faded out during the 3rd.

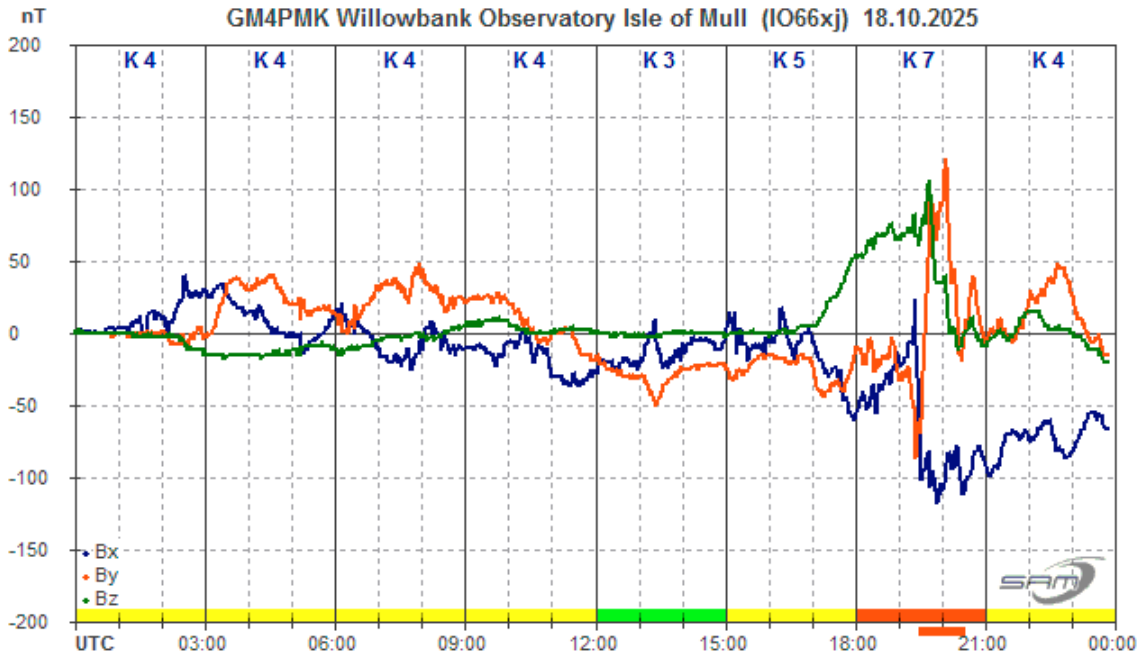


High speed solar wind from a large coronal hole produced more disturbance on the 12th and 13th, shown in recordings by Nick Quinn and Callum Potter:

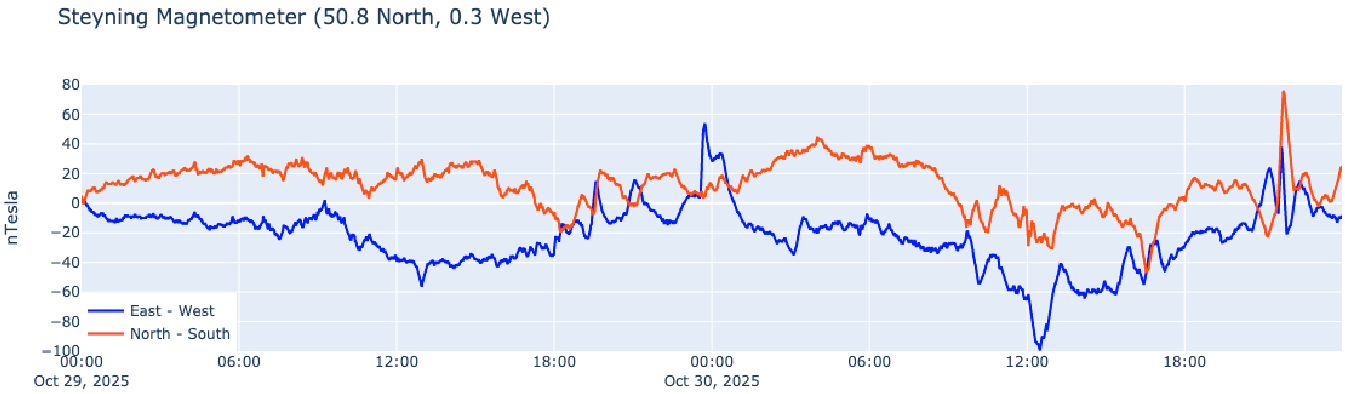


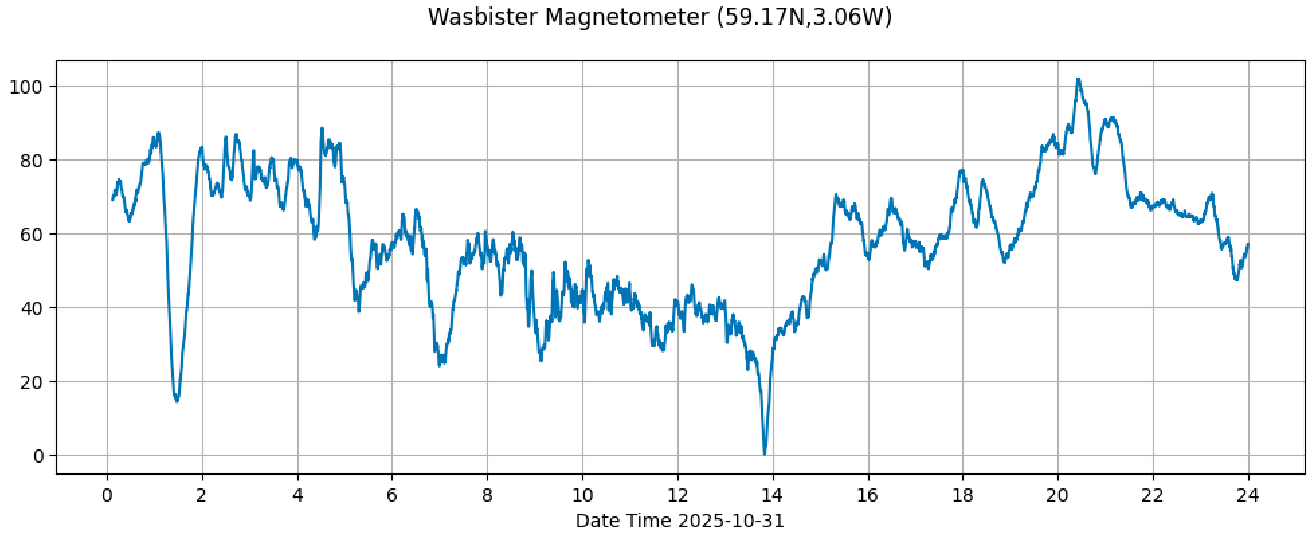


A very rapid turbulence is seen from 04 to 08UT on the 12th, slowing down in the afternoon. This was repeated on the 13th, the rapid turbulence lasting a little longer. The magnitude of the disturbance increased to +/-20nT after 19UT, but had faded out by the end of the day.

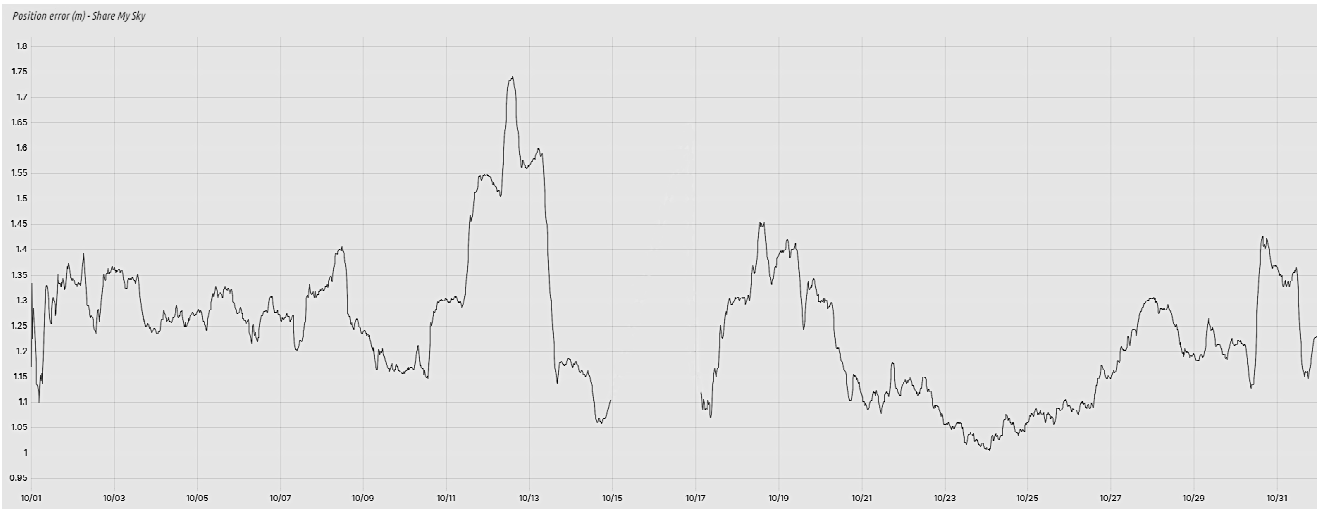


More coronal hole high speed winds produced a minor disturbance early on the 18th, shown in Roger Blackwell's recording. A glancing blow from a CME arrived later, with a strong +/-100nT spike in the magnetic field around 19:30. This did not last long, activity fading out early on the 19th.





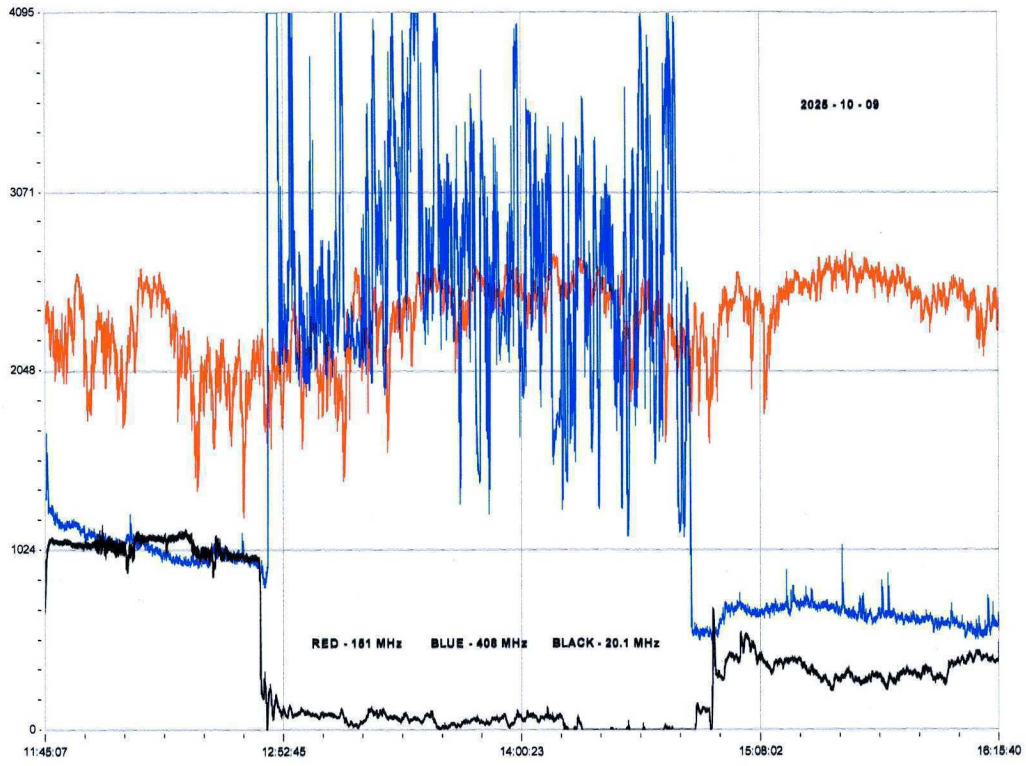
Solar wind speed increased again at the end of October, shown in recordings from Nick Quinn and Callum Potter, above. A minor disturbance began early on the 29th, increasing around midnight, and continuing on the 30th and 31st. There was another period of rapid turbulence from 08 to 13UT on the 31st, the activity fading away by the end of the day.



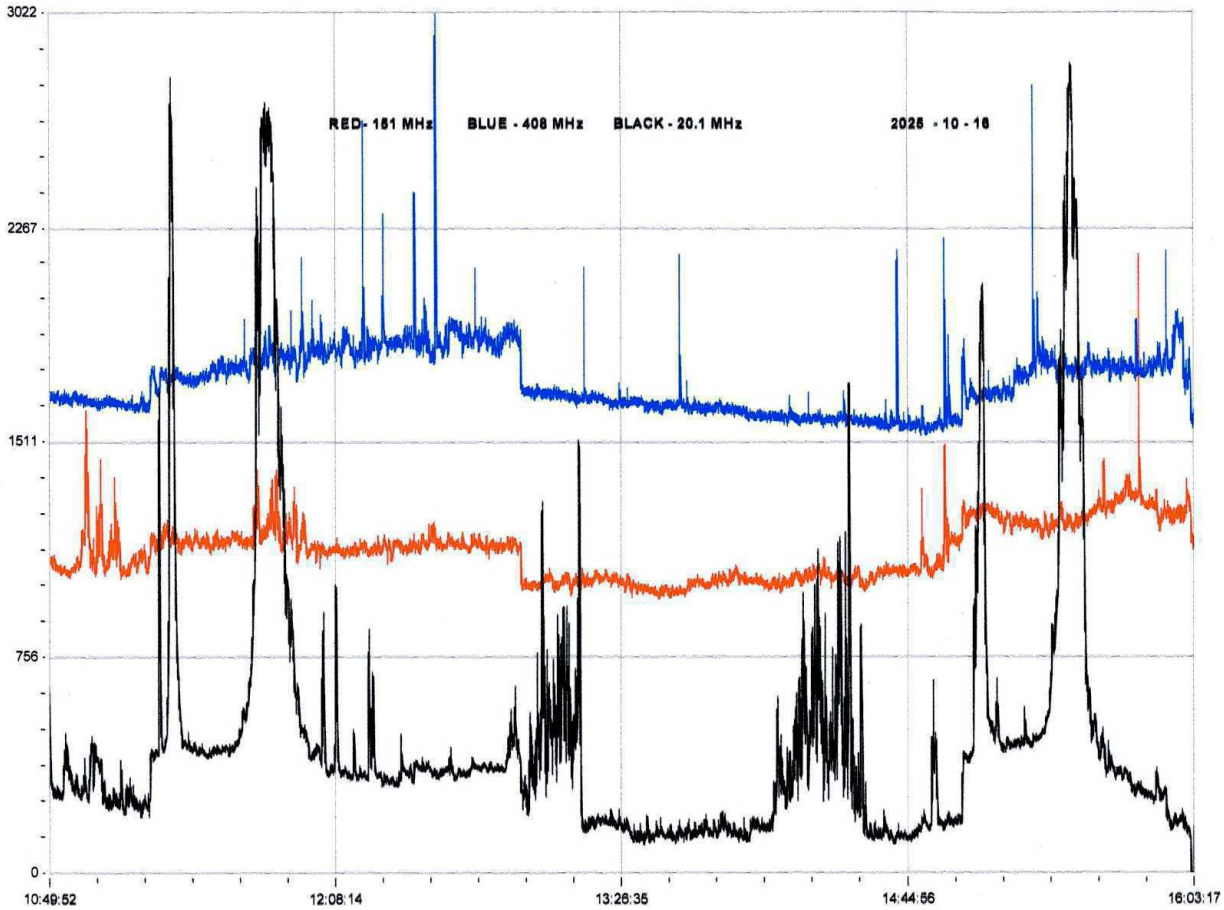
Thomas Mazzi has made a chart of GPS positioning errors through October from his Share My Sky project. The vertical axis shows the error in metres, covering 1m to 1.8m at the top. The magnetic disturbance at the start of October shows some minor effects, but the storm over the 11th to 13th has produced a larger error. The other magnetic storms also show significant effects on positioning accuracy.

Magnetic observations received from Roger Blackwell, Stuart Green, Thomas Mazzi, Callum Potter, Nick Quinn and John Cook.

SOLAR EMISSIONS

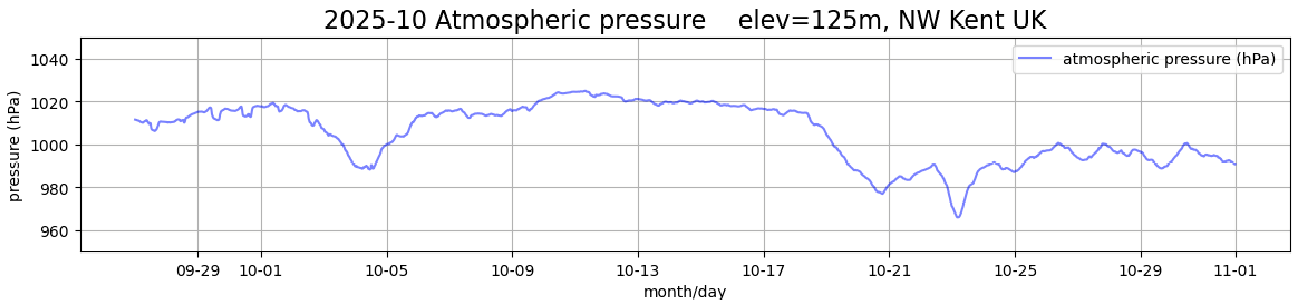


Colin Clements recorded this strong 408MHz burst from the M2.0 flare on the 9th. 151MHz (red) shows only a minor effect, while 20.1MHz (black) has actually dropped during the flare. His usual 610MHz antenna is now shaded due to the low winter sun, and so has switched to a loft-mounted 20.1MHz antenna. There were also some strong signals on the 16th:

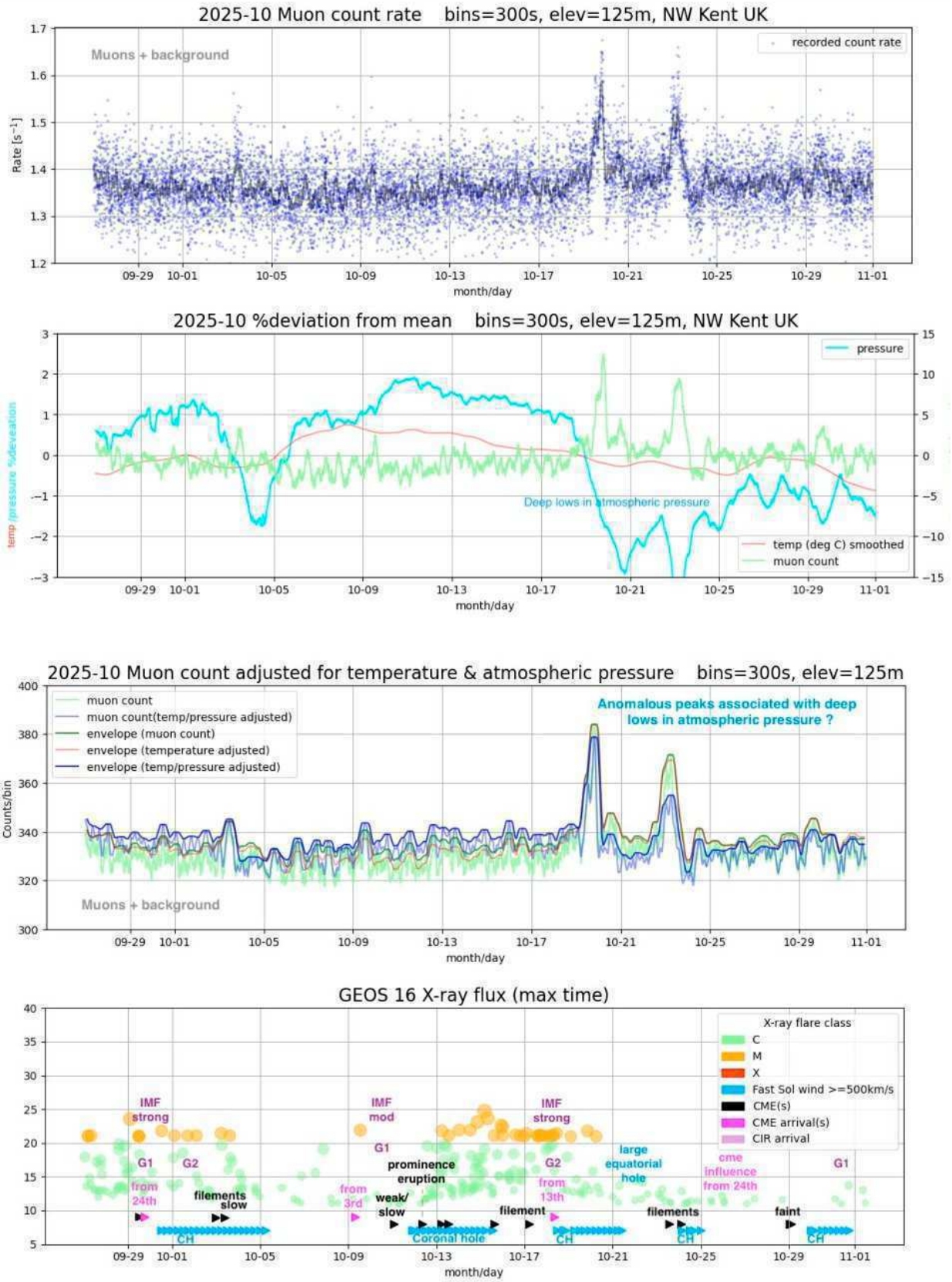


Activity on the 16th was much higher, 20.1MHz showing bursts for all of the flares that we recorded. The early C8.4 has a very strong signal, while the M1.3 (14:10UT) is weaker but with more rapid variation in strength. The last event on the chart does not seem to link directly to flare timings, so its source is unclear. Colin also recorded radio noise on the 3rd, 13th, 15th, 17th and 18th, with a very noisy 20.1MHz burst for the M1.5 flare on the 18th.

MUONS

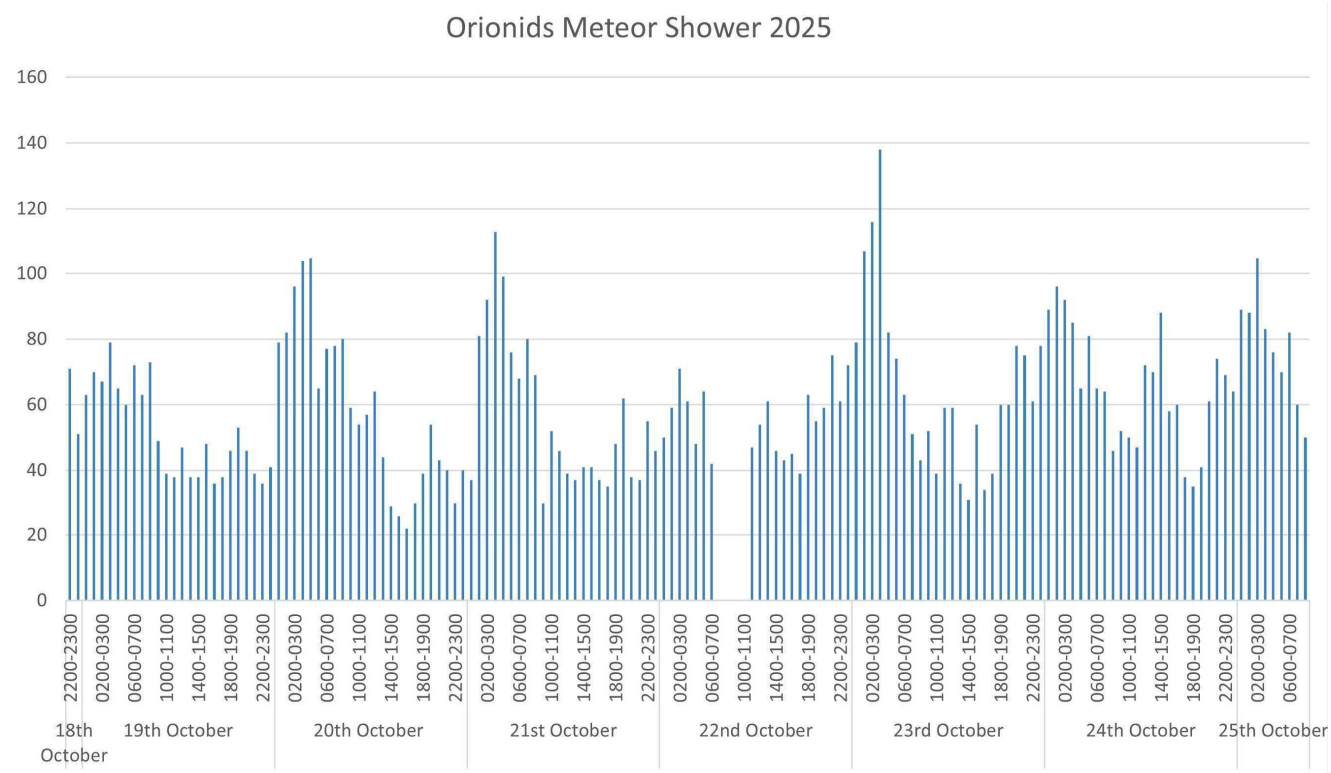


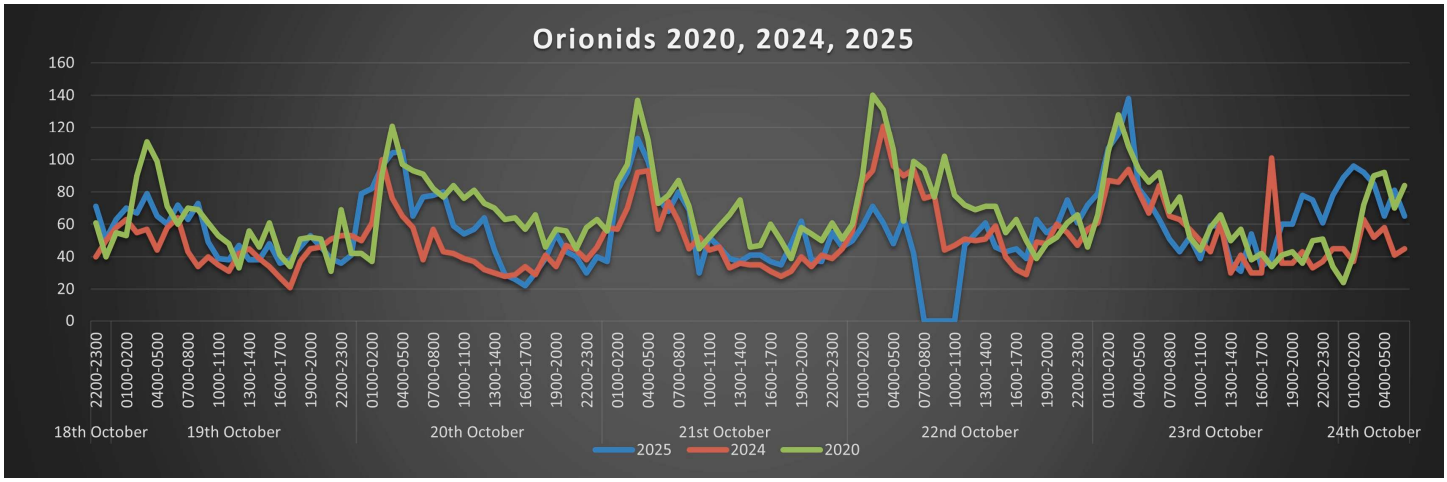
Mark Prescott recorded some very large atmospheric pressure variations during October, particularly low from the 20th to 27th. This has had a very strong impact on his Muon measurements.



Mark has used his usual adjustment method to produce the chart above, but there is still a very strong increase on the 20th and 23rd. The mixture of strong coronal winds and minor CMEs may be responsible for the general trend of falling and rising of the muon count seen in the recording.

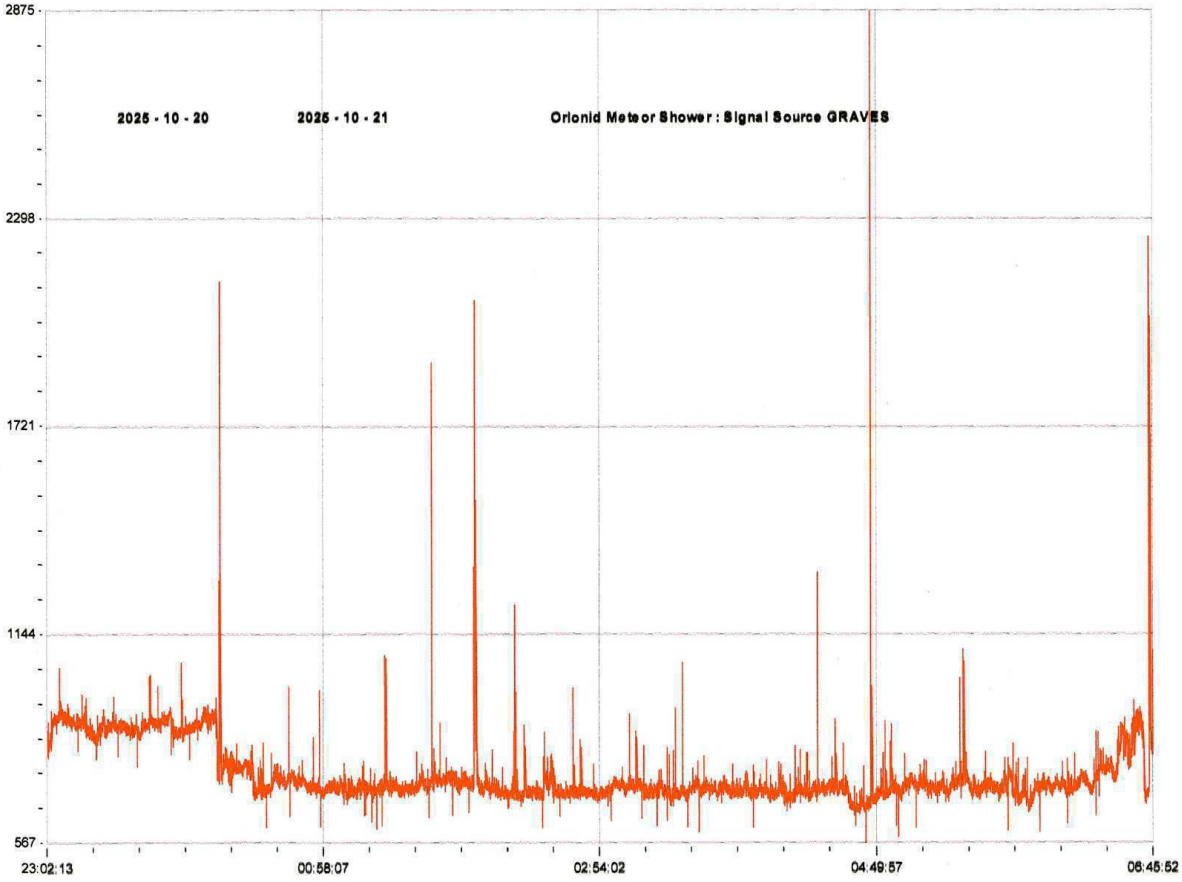
ORIONID METEORS

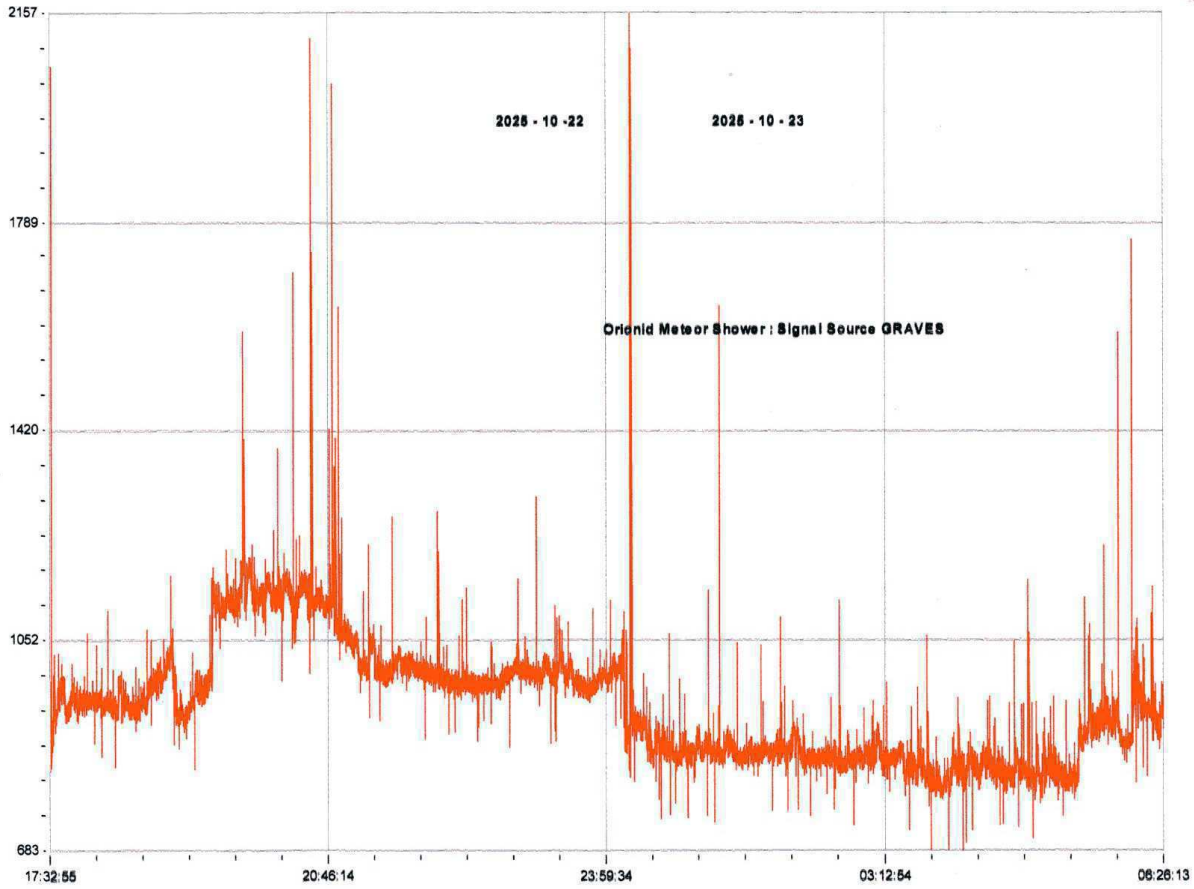


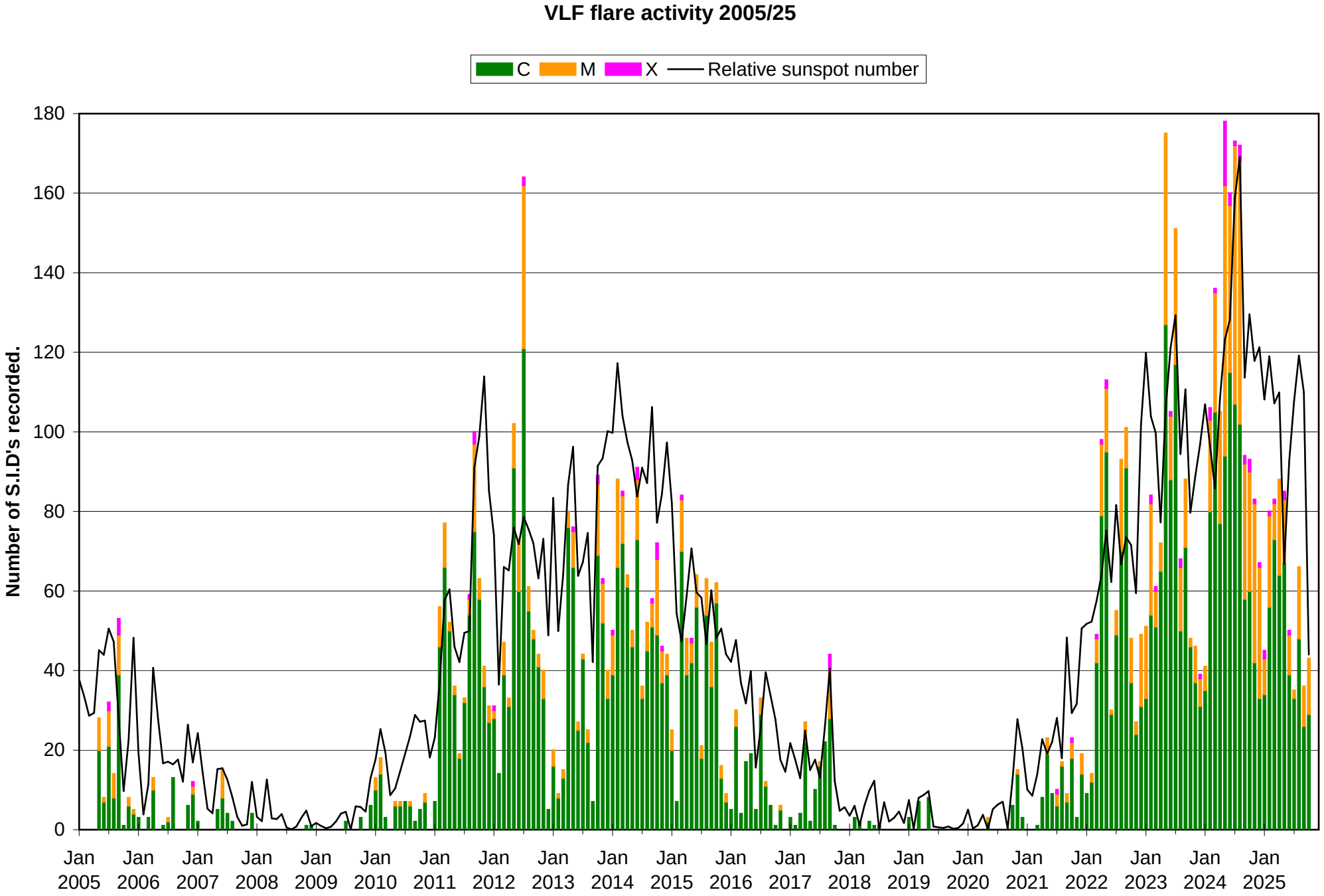


Chris Bailey made recordings of the Orionid meteors using the Graves radar signal. This seems to have taken a break during the morning of the 22nd. The peak in activity was around 04-05UT on the 23rd, with more peaks recorded from the 20th to 25th. The lower chart compares counts from 2020, and 2024 with 2025. General activity seems to have been lower this year, although the peak is at a similar level.

Colin Clements also made recordings, shown on the next page. The first chart covers 23UT on the 20th to 06:45 on the 21st, the second from 17:30 on the 22nd to 06:26 on the 23rd.


2025 - 10 - 20
2025 - 10 - 21
Orionid Meteor Shower : Signal Source GRAVES
2875
2298
1721
1144
567
23:02:13
00:58:07
02:54:02
04:49:57
06:45:52


2025 - 10 -22
2025 - 10 - 23
Orionid Meteor Shower : Signal Source GRAVES
2157
1789
1420
1052
683
17:32:55
20:46:14
23:59:34
03:12:54
06:26:13


VLF flare activity 2005/25
C
M
X
Relative sunspot number
Number of S.I.D's recorded.
180
160
140
120
100
80
60
40
20
0
Jan 2005
Jan 2006
Jan 2007
Jan 2008
Jan 2009
Jan 2010
Jan 2011
Jan 2012
Jan 2013
Jan 2014
Jan 2015
Jan 2016
Jan 2017
Jan 2018
Jan 2019
Jan 2020
Jan 2021
Jan 2022
Jan 2023
Jan 2024
Jan 2025

BAA Radio Astronomy Section.

BARTELS DIAGRAM

ROTATION	KEY:	DISTURBED.	ACTIVE	SFE	B, C, M, X = FLARE MAGNITUDE.	Synodic rotation start (carrington's).

2582

2022 December

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	21	22
F			C			C	M		2265			C				C			MMMM	CMCM	MMMC		CC	CCC	M	C	C

2583

2023 January

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
F	CC	C		CCC	CM		CM	CCCM	C						CC	MCCM	MM	MCMM	MC	MCMC	MC	CCC	CM	C			MC

2584

2267 — 2023 February

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
F	MMC	CC	CC	CMCM	C	CCC	MCM	CMCC		C		C	CC		C		C	C	C	CC	CM	MMMM	MCCM	MMXM	MMMM	CCCM	CCM

2585

2268 — 2023 March

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
F	CCCC	C	CX	C	CC	CMCC	MCCM	CCCM	CMCC	CCM	CCMM	CC	CC		CC	CCCC	MCCX	CMMC	CCMC	MCCC	C	MC	CCC	CCCC	C		

2586

2269 — 2023 April

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		C	CCCM	C	CCC	C	C			C		CC	CCC	CC	MC	M	CC				CCC	MC			CC	CCCC

2587

2270 — 2023 May

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	MCCC	MC	CCC	CCCC	CCMC	CCCC	C	CC	CCC	CCC	CCCC	M	CC		CC		C	M	CC	CCCC	CCM	CCMC	CCCC	MMMM	MCCC	CMM	CC

2588

2271 — 2023 June

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	C	CCCM	MCMM	MCCC	MCCM	CCCC	CCCC	C	C	CCCM	CCCC	MMMM	MCCM	MMMM	CCCM	CCMC	CCMC	MCCM	CCMC	CCC	CCC	MC	C	MMMC	CMCM	CCCC	CC

2589

2272

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	CC	CCCC	C	CCCC	CMCC	CC	CM	C		CCCC	CCCC	CC	CC	MCMM	CC	M	MC	CCMX	CMMC	CMCC	C	CCMC	CCCC	CCMC	CMCC	MCC	CCCM

2590

2273 — 2023 July

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	25	26
F	CCCC	CCCC	CCCC	MCCC	MC	CCCM	CCM	MC	C	CCC	CCCC	MMMM	MMCC	CCCM	MCCC	MMMC	MCMM	CCC	MMMM	CMCM	C	CC	CC	CC	C	CCCM	CMCM

2591

2274 — 2023 August

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
F	CMCC	CMCC	CCCM	MC	CMCC	MMMM	MMMM	CMCC	CC	MMCX	CM	CMMX	MC	C		CCCC	CCCC	C		C	CC	CCC		C	CC	CC	

2592

2275 — 2023 September

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
F	CCC	C	C	C			C			MC	MCC	CC	MCC	CCCC	CCM	CCC	C	C	CCCM	MCCC	C	CCM	C	CC	C	C

2593

2023 October

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	MCCC	CMCC	M	CCMM	CCCC	CCMC	C	CC		MCC	CCC	CCCM	CCCC	CCM	CCCC	C	C	CC	CC	CCC	CMCC	CC			C	C

2594

2277 — 2023 November

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
F	CCC		C	C					CC	CC			CCCC		MCM	CCM			MCM	C		C	C	C	CCC	

2595

2278 — 2023 December

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	C	CCCC	C			CM	CC	MCCC	CCCC		CCMC	MC		C			C	CC				CCC	C			MCM

2596

2279 — 2024 January

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	CCC	CCCC	CC	C	MMX	MCCM	CC	C	C					MM							C	CCCC	M			

2597

2280

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
F	C		CC		CM	CCM	C			CC				C	CCC	C	CMMM	CCC	CCCC				CCC	CCC	C	C	CC

2024 February

2598

2281

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
F	CCCC	CCCC	MMMM	CC	CC	CCM	MMMM	CXM	C	C	CMCM	CC	MCCC	CCCM	XCC	C	C	CC	CC	CCCC	XCCM	CMMM	MMMM	CM	C	C	CC

2024 March

2599

2282

29	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
F			CCC		C	CC	C	CCCC	C		CMCC	CC	CCCC		MCC		CCMC	CCCC	CCCC	CCCC	MCCC	CC	CCCM	MMMM	MMMM	MCCC	MMMM

2600

2283

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
F	MCCC	MMMX	CCCC	CCCC	CCCC					C				CCCC	CCCM	CCCC	MCCC	CCCC	MMMM	CCCM	CCCC	CMCC	MCCC	CCCC	MMM	MMMM

2024 May

2601

2284

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	18	19
F	MCCM	CCMC	CMCM	CC	MC	CC	CCC	CCMM	MC	CCCM	CMCC	MMCM	XMXM	MXMC	MMMM	XMMX	MXMX	XMMM	MXMM	MMMX	MMMM	XCXM	CMMX	M	CCC		MM

2024 June

2602

2285

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
F		CCCM	CM	CMMM	MCCC	C	CCCC	XCC	CCCC	MMXM	CM	CMCX	XCXM	CMCC	MMMM	MMCC	MMCC	CCMC	MMCC	MMCM	CMCM	CC	CC	CCMC	CCCC	MCCC

2024 July

2603

2286

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
F	CCCC	MCMM	CMMC	MCCC	CMCC	CCCC	MMCC	MMMC	MMCM	MC	C	CC	CC		MC		MCC	CCMM	CCCC	CCCC	CCMM	CMCC	CCCC	MMMM	CMCC	CCC

2024 August

2604

2287

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
F	MMMM	MCCM	MMCC	MCXM	MMMM	MMCC	CMCM	MCCM	MCCM	MCMC	CM	MCMC	CCM	MCC	MMMM	MMMM	MMMM	MMMM	MMMM	MMMM	MMMM	MMMM	MMMM	MMXX	CCCC	CCMM	MMMX

2024 September

2605

2288

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	MMMM	CCMM	MCCM	MC	CCCM	XMMC	CCCC	CMC	MM	MCM	MCCC	CCM	MCCC	CCMC	CCMM	CCMM	CCCC	CMC	CMCC	C	CCC	CMCC	MCMC	MCCM	CMCC	MCCM	CCMC

2606

2289

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
F	MMMC	CCCC	MCCC	M	MMMM	CMC	MMMM	MXMM	MMMM	MCX	CC	C	C	C	C		C	M	C	C	C	CC	C	MMM	C	CCC

2024 October

2607

2290

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
F	CCMC	MXM	MC	MMCC	CMM	C	MCC	CCX	CMMC	CCMM	C		MC	MCCM	MCM	C	CCC	MCM	C		CCC	CCCC	MC	MCC	XMMM	CCCC	CCMM

2024 November

2608

2291

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
F	CM	CC	CMMM	MCMM	MM	MCMM	MMMM	MMMM	MMMM	MMMX	CCCC	CCCC	M	C	C	CC	CCC	M		CC	MMMM			CC	M	M	

2024 December

2609

2292

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	21
F	MC	CC	CCCM			CC	CC	C		MC	MMC	MCC	CCM	XCCM	C	MCM	MCCM	CCM	MCM		CCCC				MCCM	CCM	

2610

2025 January — 2293

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
F	CM	M	MCMC	C		M	MM	MMMM	MMMM		C	C	X	CCX	MM									CC			MMMC

2025 February — 2294

2611

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	CCCC	CC	CC	M	MC	CC	CCC		CC	M	CC		CC	CCMC	CCCM	MMMM	MCCM	CMMC	CCCC	MCCC	MC	MCCC	C	CC	CC	C	CMCC

2025 March — 2295

2612

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
F	MC	C	C	CCMC		CC	C	CMMC	C	MMMX	MCC	M	CCC	C	CCC	CCCC	C	CC	CCC	M			CC		MC	CCCC

2025 April — 2296

2613

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
F	CC	CCCC	CC	C	CCCC	C	CC	C	M	C	CCC	CC	CC	MCCC	CCC	CXMM	CCCC	CCMM	CMCC	MCCC	CCCC	CCC	CCC	C	C	CCCC	

2025 May — 2297

2614

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
F	CCC	CCC	CCCM	MMMM	MMMM	MMCC	CMCM	C	CCC		C	CMC	M	M	C	CC		C		MMMC	CMC			CCCC	CCCC	C

2615

2298

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
F	CCCC	CCCC	CCCC	C	CC	CCCC	CC	CX	MXMM	CM			M	CCCC	C			CCCM	MCMM	CMM	C	CCCC	C	MCCM	MMCM	CC

2025 June

2616

2299

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
F	MC	M		CC	CC	CC	C		C	CCCC	C	C	CCM	MMCM	CCMM	CX	CCCC	CCCC	CM			C				

2025 July

2617

2300

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	25
F				C							CCCC	CC	MMCC		CCC			CC	C	C	CCCC		CC	C	CCC	

2025 August

2618

2301

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	C	C		CC		C	C	CMC	C	M	CCCM	CMC	CCC	CCMM	CM	CCMM	CCCC	C		CCC						

2025 September

2619

2302

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
F		C	CM	MCMM	CM	CC	CMM	C	CMM			C		M	C	CCCC				C				C		

2025 October

2620

2303

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
F	C			C	M	MC	C		MCC	MCCC	MMMC	CMM	CM	C	CCM				C	C	M			CC	CMCM	CCCM

2025 November

2621

2304

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
F	MCCM	CCCM	CMMM	MCM	CC	C																				

BAA Radio Astronomy Section. **2025 OCTOBER.**

	Xray class	Observers	John Cook (23.4kHz/*22.1kHz*) Tuned radio frequency receiver, 0.58m frame aerial.				Roberto Battaiola 21.75kHz Modified AAVSO receiver.				Paul Hyde (22.1kHz/*24kHz*) Spectrum Lab / PC 1.5m frame aerial.				Mark Edwards Spectrum Lab / PC 2m loop aerial.				Colin Clements (21.75kHz/*23.4kHz*) 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																				
1	C8.6	5	11:31	11:35	11:53	1	11:29	11:36	12:01	1+	11:29	11:38	12:21	2+								
1	**M1.2**	3	*16:45*	*16:50*	*16:56*	*1-*					16:43	16:49	17:05	1								
2	C3.1	1	*08:38*	*08:39*	*08:48*	*1-*																
3	C9.7	1					06:03	06:11	06:37	2												
3	C6.1	7	12:25	12:36	?	-	12:21	12:37	13:10	2+	12:20	12:35	13:41	2+					12:28	12:41	14:30	3
3	**M1.2**	7	*14:26*	*14:32*	*15:30*	*2+*	14:20	14:36	15:04	2	14:24	14:39	15:19	2+					14:30	14:45	15:13	2
7	C5.6	6	11:27	11:32	12:20	2+	11:24	11:27	11:59	2	11:24	11:30	12:28	2+					11:30	11:35	12:24	2+
9	**M2.0**	8	12:21	12:32	14:04	3	12:18	12:24	12:31	1-	12:18	12:31	13:37	2+					12:23	12:39	13:56	3
12	C1.6	1									10:38	10:45	11:11	2								
12	C9.6	8	13:28	13:49	14:28	2+	13:25	13:39	14:32	2+	13:23	13:43	15:16	3					13:31	13:49	14:38	2+
13	C9.8	2	*07:44*	*07:50*	*08:02*	*1-*					07:39	07:51	08:21	2								
13	**M2.7**	7	09:07	09:20	10:29	2+					09:02	09:21	10:16	2+					09:13	09:27	09:50	2
13	C9.5	7	10:38	10:50	12:01	2+					10:37	10:47	11:45	2+					10:44	10:53	12:04	2+
13	C3.5	1	12:59	13:03	?	-																
13	**M1.2**	7	13:07	13:17	15:23	3+					13:04	13:17	14:39	3					13:08	13:25	14:08	2+
13	C3.3	1									15:59	16:02	?	-								
14	C6.0	2	*08:44*	*08:48*	*09:03*	*1*					08:42	08:47	09:05	1								
14	C3.2	2	09:55	09:58	10:13	1-																
14	C3.3	2									11:04	11:09	11:39	2								
14	*	1									12:19	12:24	?	-								
14	C2.7	1																				
14	**M2.0**	7	12:44	12:50	14:11	3	12:41	12:54	13:25	2	12:43	12:49	?	-					12:47	12:59	14:27	3
15	**M3.7**	2	*07:14*	*07:19*	*07:28*	*1-*	07:07	07:19	08:15	2+												
15	C3.4	3	09:49	09:53	10:06	1-	09:43	09:51	10:01	1-	09:45	09:54	10:04	1								
15	C4.8	6	10:22	10:23	10:39	1-	10:20	10:22	10:35	1-	10:19	10:25	?	-					*10:26*	*10:31*	*10:44*	*1-*
15	?	3	10:43	10:44	10:54	1-					10:40	10:45	11:03	1								
15	C3.4	6	12:18	12:21	12:35	1-	12:15	12:24	12:47	1+	12:16	12:21	12:50	2					*12:22*	*12:26*	*13:03*	*2*
15	C2.4	1									13:03	13:05	13:16	1-								
15	C2.7	1									13:40	13:47	14:01	1								
15	**M1.1**	7	14:07	14:12	14:50	2	14:01	14:11	15:04	2+	14:01	14:09	15:16	2+					14:11	14:17	14:48	2
16	C5.3	5	09:55	10:06	10:30	2	09:40	10:04	10:47	2+	09:44	10:05	10:45	2+					09:58	10:13	11:07	2+
16	C8.4	7	11:54	12:02	?	-	11:41	12:04	12:42	2+	11:51	12:00	?	-					11:49	12:07	13:09	2+
16	C6.0	5	13:05	13:10	13:43	2	13:01	13:08	13:19	1-	13:03	13:08	13:19	1-					13:09	13:16	14:00	2+
16	**M1.3**	7	14:01	14:10	14:33	1+	13:56	14:08	14:11	1-	13:55	14:07	14:55	2+					14:00	14:16	14:47	2+
17	C6.7	2	10:18	10:21	10:35	1-	10:14	10:20	10:30	1-												
17	C6.1	4	12:05	12:08	12:32	1+	12:01	12:12	12:23	1									12:09	12:17	12:35	1+
17	**M1.1**	3	12:37	12:45	13:08	1+													12:35	12:50	13:07	1+
17	**M1.0**	6	14:29	14:34	14:46	1-	14:23	14:31	14:58	2									14:33	14:38	14:51	1-
17	**M1.3**	1	16:20	16:27	16:45	1																
18	**M1.3**	1					06:50	06:57	07:11	1												
18	C6.0	1					07:39	07:47	08:04	1												
18	**M1.5**	7	10:44	10:53	11:45	2+	10:38	10:52	11:25	2+	10:37	10:52	11:39	2+					10:42	10:59	11:43	2+
19	C4.7	1					07:48	08:04	08:32	2												
19	C2.6	1					12:17	12:45	13:18	2+												
20	C3.5	1					07:41	07:48	08:08	1+												

BAA Radio Astronomy Section. **2025 OCTOBER.**

	Xray class		Steve Parkinson (Various)				Andrew Thomas (18.3kHz)			Phil Rourke (23.4kHz)				Mark Prescott (19.6/*20.9*/**21.75kHz**)				John Elliott (19.6kHz)			
			Tuned radio frequency receiver, frame aerials.				Tuned radio frequency receiver, 0.6m frame aerial.			Spectrum Lab, 0.6m frame aerial.				SpectrumLab/Starbase, Active mini-whip 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	*									10:04	10:42	11:25	2+								
1	C8.6									11:31	11:38	12:17	2+	11:35	11:38	12:25	2+				
1	**M1.2**									15:50	16:42	?									
2	C3.1																				
3	C9.7																				
3	C6.1		12:28	12:34	13:15	2+				12:28	12:40	13:43	2+	12:32	12:46	13:31	2+				
3	**M1.2**		14:26	14:36	15:25	2+								14:31	14:41	15:29	2+	14:25	14:40	15:15	2+
7	C5.6		11:26	11:32	12:10	2								11:30	11:36	12:15	2				
9	**M2.0**		12:20	12:35	13:40	2+				12:18	12:35	15:00	3+	12:26	12:44	13:40	2+	12:22	12:30	13:50	3
12	C1.6																				
12	C9.6		13:28	13:40	14:37	2+				13:28	13:53	14:27	2+	13:33	13:53	14:50	2+	13:25	13:50	15:00	3
13	C9.8																				
13	**M2.7**		09:05	09:20	10:25	2+				09:02	09:24	10:13	2+	09:06	09:27	10:23	2+	09:00	09:27	09:55	2+
13	C9.5		10:38	10:50	12:22	3				10:38	10:50	11:34	2+	10:42	10:55	11:55	2+	10:38	10:50	12:10	3
13	C3.5																				
13	**M1.2**		13:06	13:22	14:15	2+				13:00	13:19	13:58	2+	13:12	13:24	14:20	2+	13:10	13:20	14:30	2+
13	C3.3																				
14	C6.0																				
14	C3.2		09:52	09:58	10:08	1-															
14	C3.3		11:07	11:16	11:40	2															
14	*																				
14	C2.7		12:21	12:25	12:40	1															
14	**M2.0**		12:44	12:50	13:56	2+								12:48	12:58	14:00	2+	12:42	12:55	15:00	3+
15	**M3.7**																				
15	C3.4																				
15	C4.8		10:21	10:25	10:40	1								*10:26*	*10:30*	*?*	-				
15	?		10:43	10:45	10:50	1-															
15	C3.4		12:18	12:21	12:30	1-								*12:22*	*12:27*	*?*	-				
15	C2.4																				
15	C2.7																				
15	**M1.1**		14:06	14:13	15:00	2+								*14:11*	*14:17*	*?*	-	14:07	14:15	15:00	2+
16	C5.3		09:54	10:08	10:53	2+															
16	C8.4		11:49	12:02	12:55	2+				11:56	12:03	12:37	2	11:50	12:06	13:08	2+				
16	C6.0		13:06	13:10	13:36	1+															
16	**M1.3**		13:58	14:11	15:17	2+								14:07	14:14	?	-	14:00	14:10	14:50	2+
17	C6.7																				
17	C6.1													**12:09**	**12:18**	**?**	**-**				
17	**M1.1**													12:41	12:48	?	-				
17	**M1.0**		14:27	14:34	14:56	1+				14:26	14:34	14:59	2					14:30	14:33	14:50	1
17	**M1.3**																				
18	**M1.3**																				
18	C6.0																				
18	**M1.5**		10:40	10:53	11:41	2+								10:48	10:57	?	-	10:40	10:53	?	-
19	C4.7																				
19	C2.6																				
20	C3.5																				