# The British Astronomical Association

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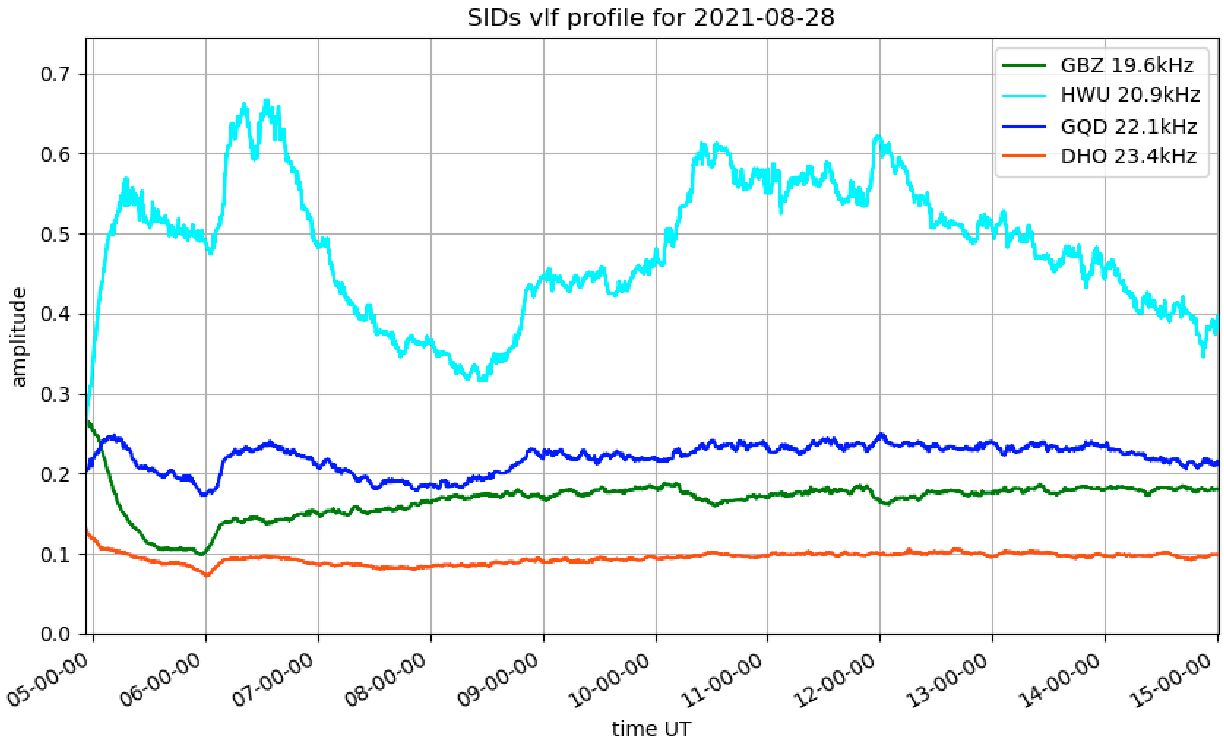
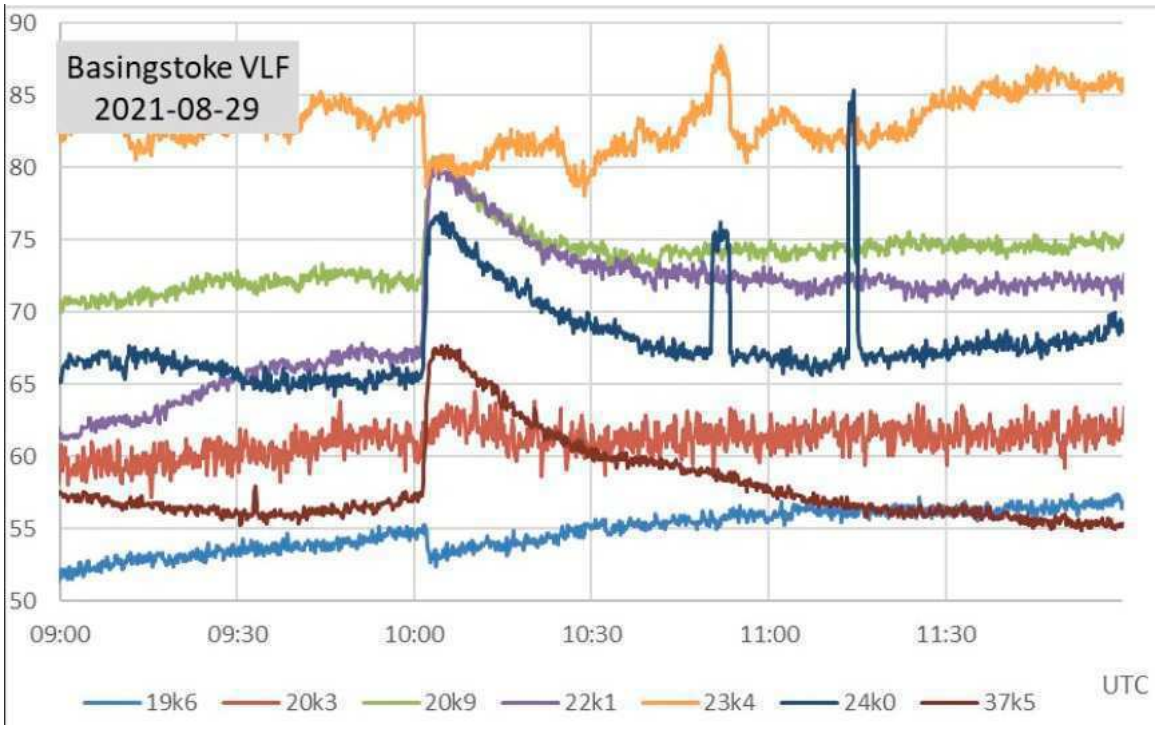
## BAA Radio Astronomy Section. 2021 AUGUST.

The few sunspots present in the first half of August were fairly small and inactive, with just a few B-class flares shown in the satellite X-ray data. The second half was rather more active with some more complex regions present. The strongest flare was the M4.7 peaking just after 06UT. This was rather early in the morning, but it was well recorded. This chart shows the SID recorded by Mark Prescott:

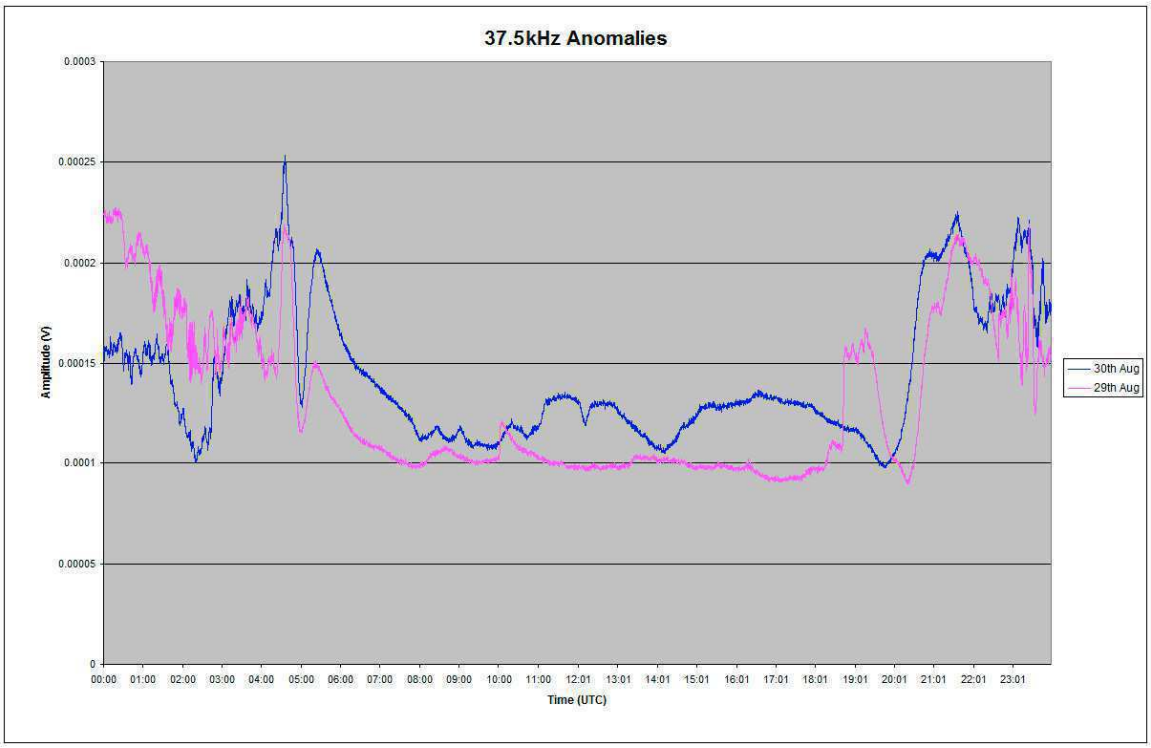



Having multiple signals does make it easier to identify the SID at 19.6, 22.1 and 23.4kHz. The response at 20.9kHz is strange in that it appears to start at the peak time, decaying over about 2.5 hours. Reading it as an inverted SID puts the peak back at 06UT, with a start around 05:15. The GOES satellite data gives an X-ray start time of 05:39, so not at all clear. Most probably the signal was still recovering from sunrise, and that has contaminated the effects of the flare. The C2.7 flare at 12UT was much weaker, but is just visible at 19.6 and 22.1kHz. There is also a response at 20.9kHz, but on a much noisier signal it is less obvious.

The most widely recorded flare was the C8.1 mid-morning on the 29th. The same active area, AR12860, was responsible for both of these flares. It was quite a large and complex group spread over a large area.

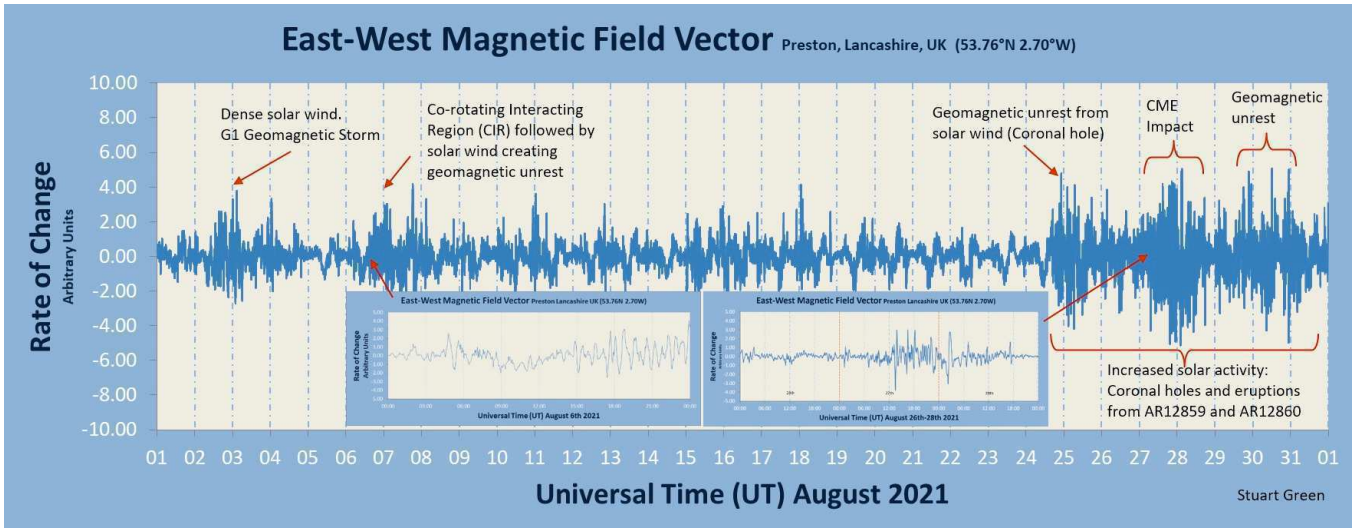



This recording by Paul Hyde shows the C8.1 flare peaking at 10:05UT. Most of signals show a very clear SID, although 23.4kHz is very noisy with a less obvious SID. There are also some strong interference spikes at the higher frequencies from 10:45 to 11:15.

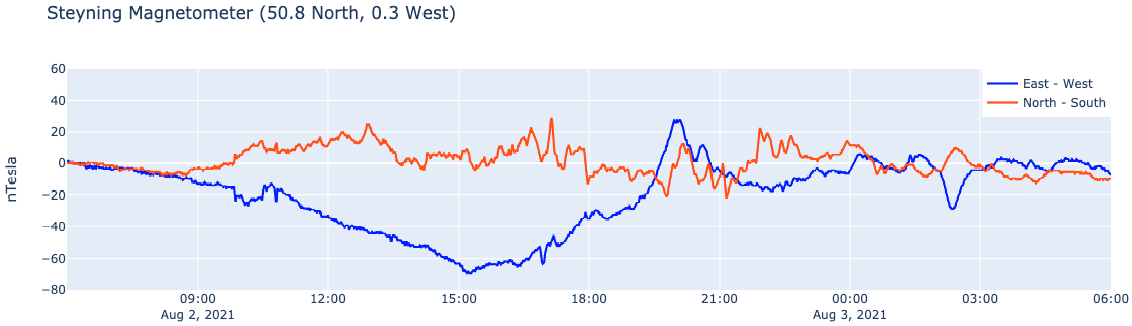



This recording by Mark Edwards shows the C8.1 flare at 37.5kHz on the pink trace. The blue trace shows the same signal on the 30th, with some unusual behaviour during the day. The only notable flare on the 30th was the C1.1 at 09:36UT. There is also a sudden large rise in the signal at 18:43 on the 29th, just before the expected sunset. There seems to have been a very turbulent solar wind over this period, with a large change in polarity at 12:12 on the 30th, corresponding to the dip seen in the 37.5kHz signal.

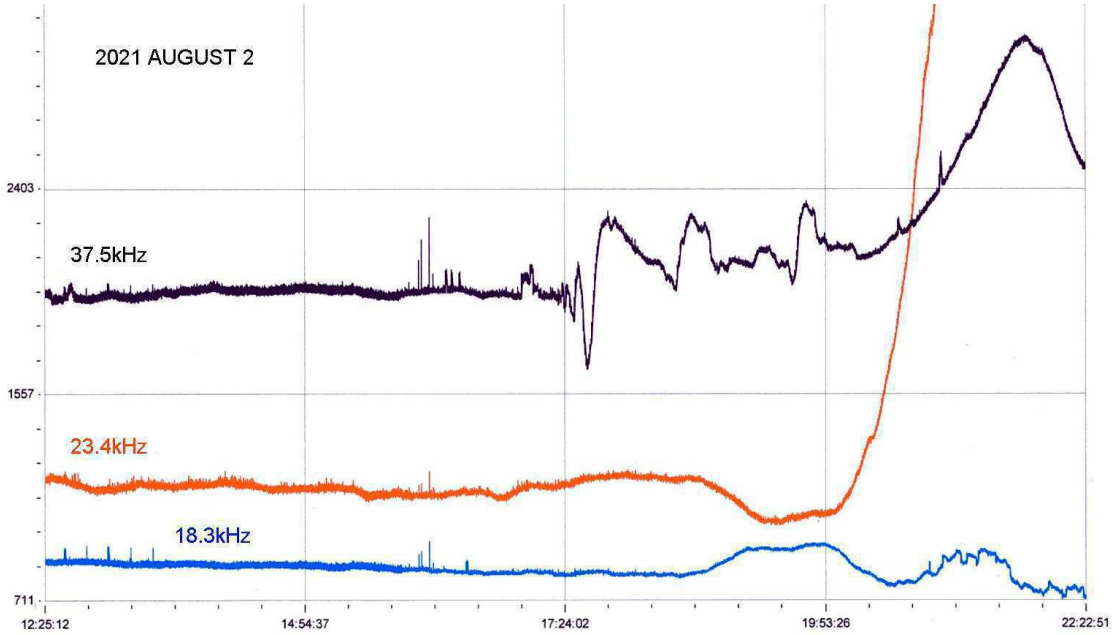
# MAGNETIC OBSERVATIONS.



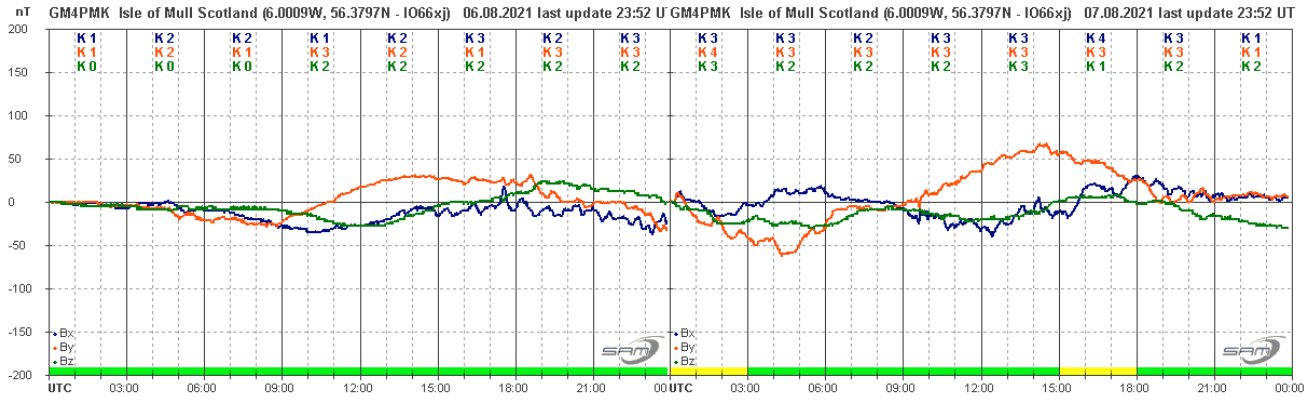

The magnetic summary for August by Stuart Green shows strong activity at the end of the month, matching the increase in solar flares. There is also a period of activity starting on the 2nd, resulting from a CME recorded in satellite images from late July. The recording by Nick Quinn shows this activity:



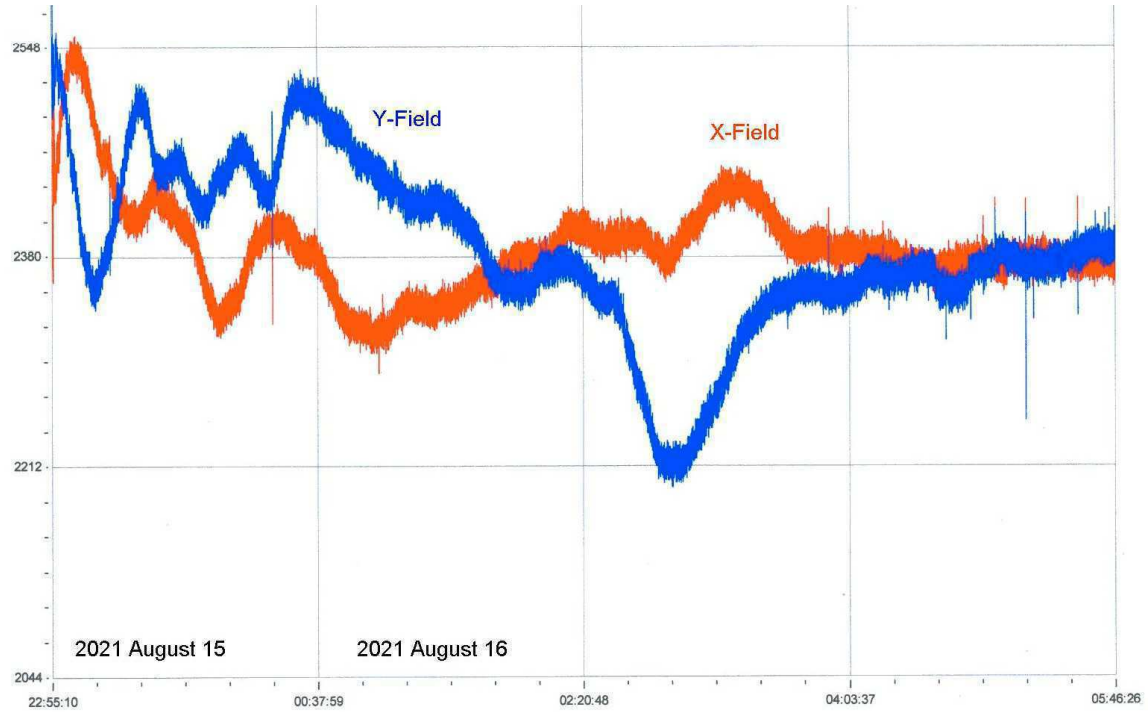

The north-south field in particular is very turbulent through the afternoon and into the early morning of the 3rd.



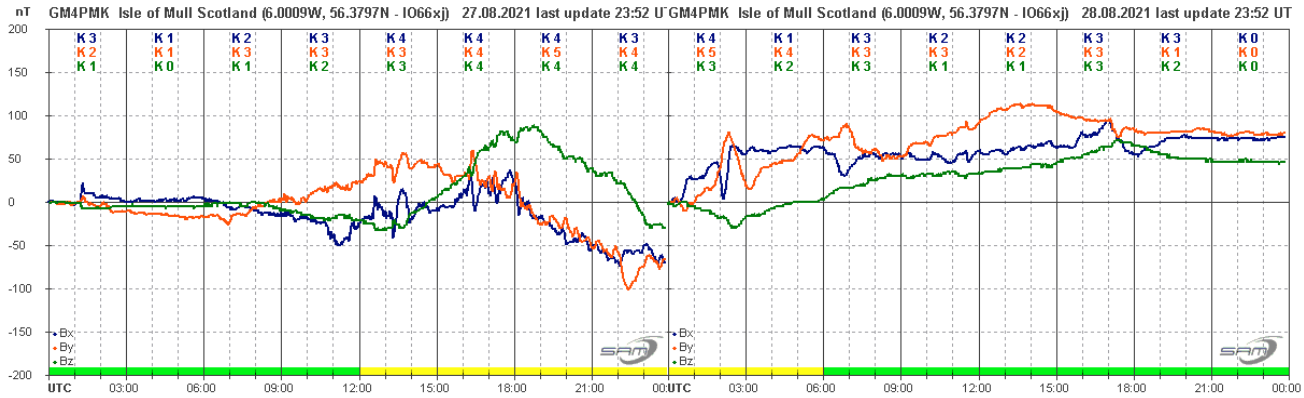
The recording by Colin Clements shows the 37.5kHz response to the magnetic disturbance, starting around 17:30 and continuing until sunset takes over. The other signals show more normal curves, with the sunset dominating. There is some minor local interference around 16:00UT.



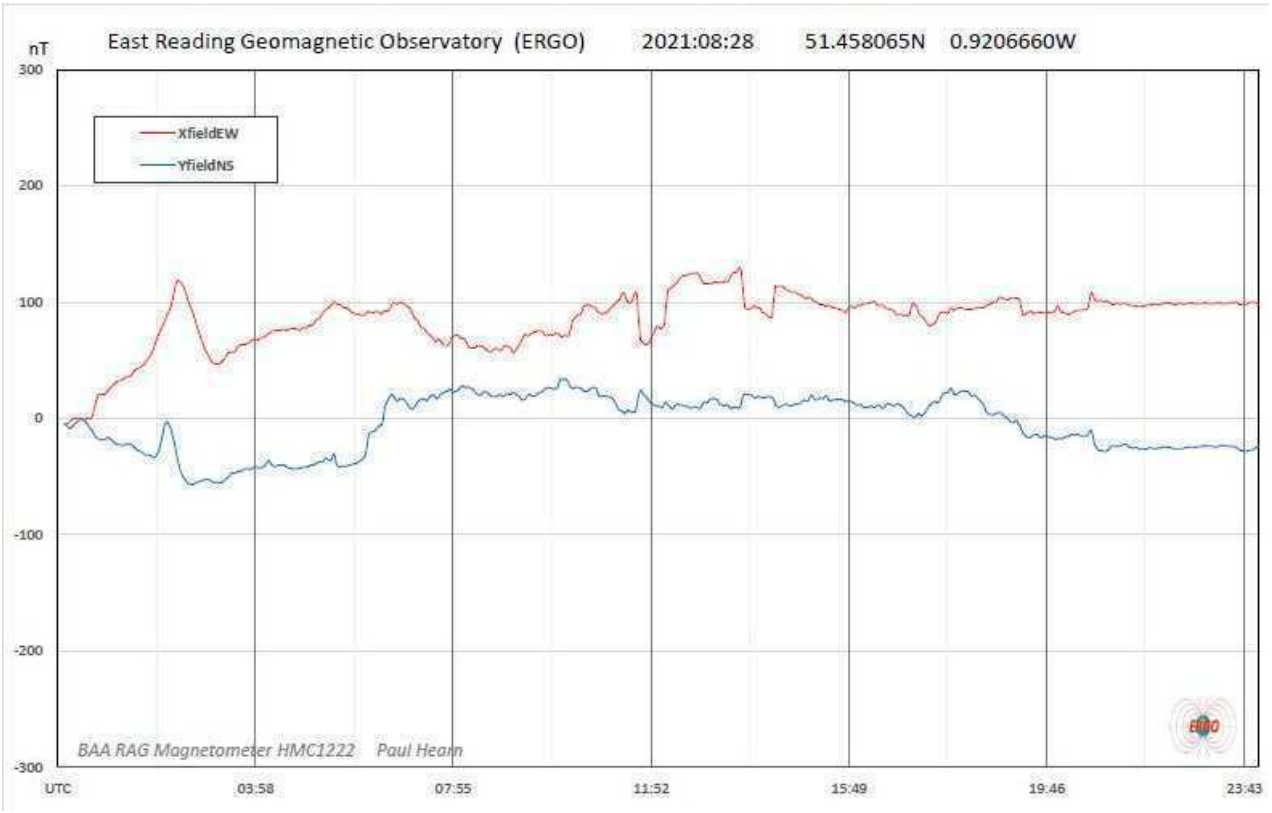

A north polar coronal hole produced a mild disturbance over the 6th and 7th, shown in this recording by Roger Blackwell. There were periods of rapid oscillation, although the magnitude remained quite low. Another north polar coronal hole was responsible for a minor disturbance in the afternoon of the 15th and early morning of the 16th. It is barely visible in the summary chart by Stuart Green, but was recorded by Colin Clements:




Activity increased again on the 25th, with a combination of coronal holes and CMEs. Disturbance from the high speed wind on the 25th was fairly mild, with a further mild period on the 26th. The CME impact was recorded just after 01UT on the 28th, shown in this recording by Roger Blackwell:



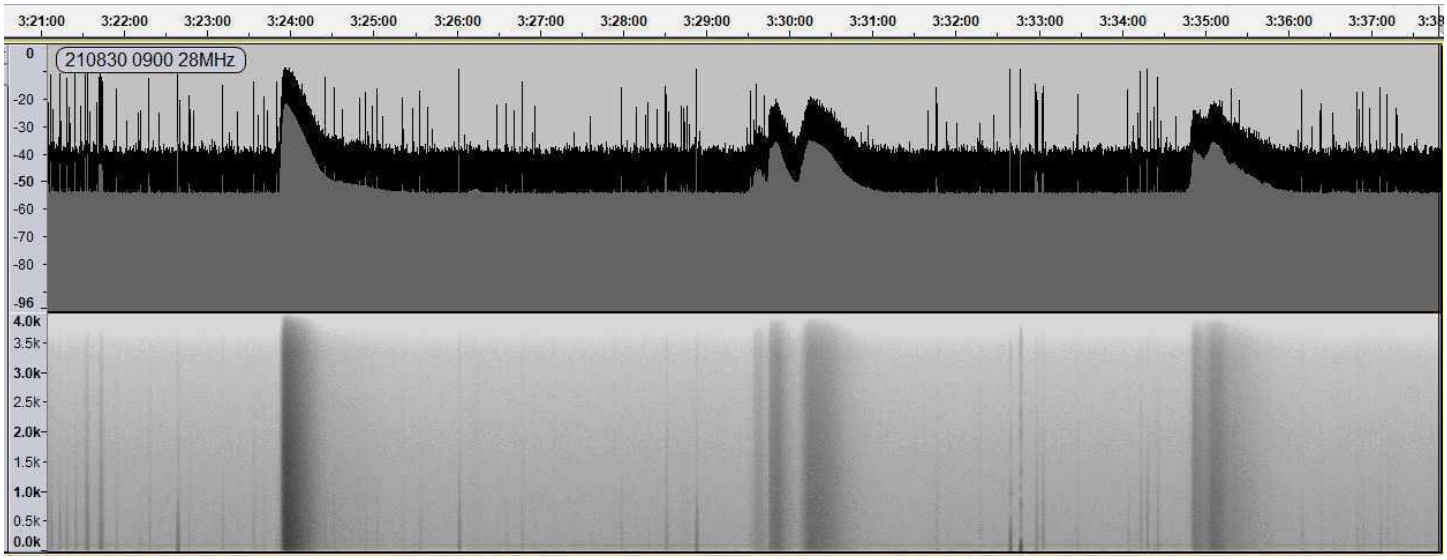

Magnetic activity increased around 11:00UT, continuing through to the evening of the 28th, with +/- 100nT shown in Roger's recording. Note that the midnight discontinuity is due to the sensor being reset. Paul Hearn made this recording from the 28th:




Magnetic observations received from Roger Blackwell, Colin Clements, Stuart Green, Paul Hearn, Andrew Thomas, Nick Quinn and John Cook.

## SOLAR EMISSIONS.

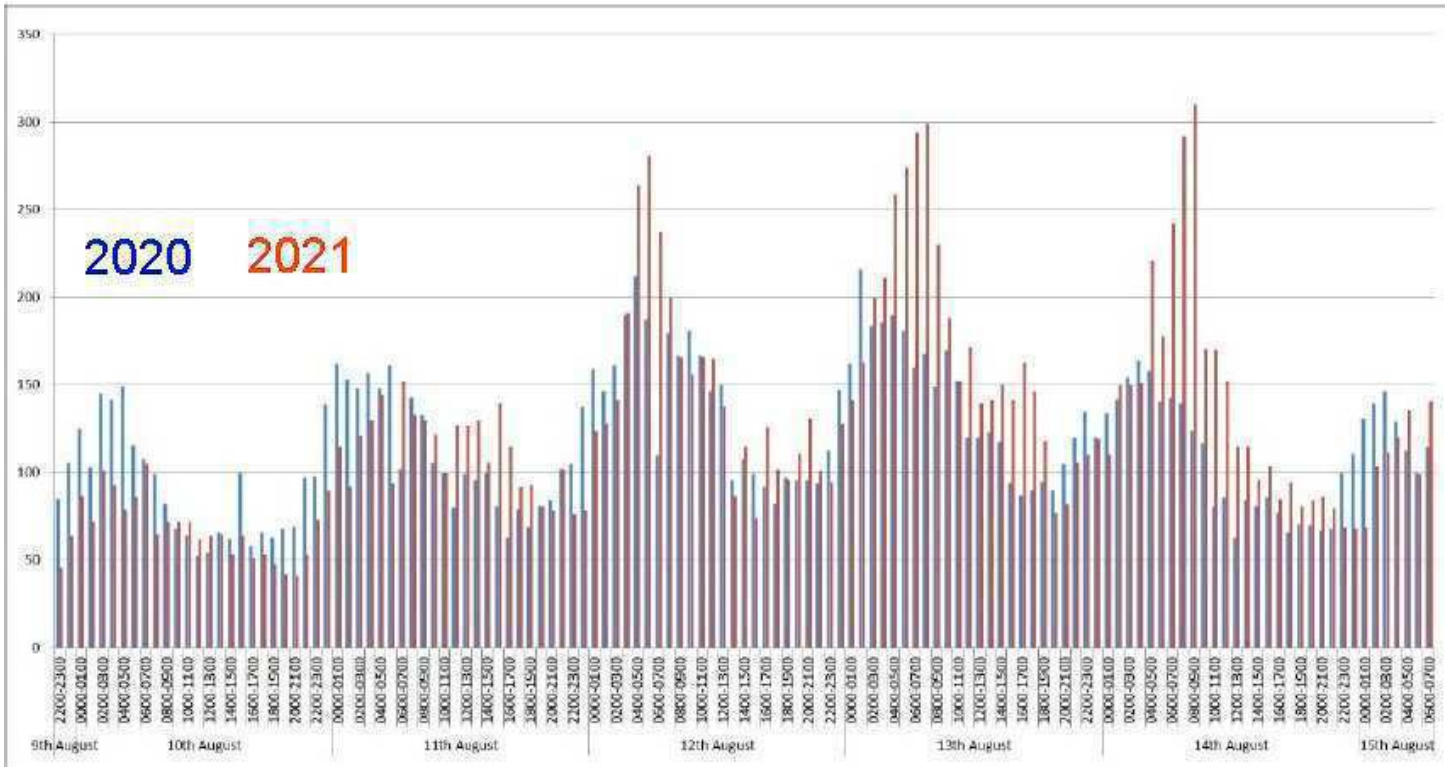
Colin Briden has been making 28MHz recordings of solar radio emissions. These are not always directly related to larger solar flares, and he recorded a series of three type III emissions on August 30th. During that period, satellite X-ray data shows nothing stronger than B6, and SWPC timings do match well with his recordings. Equipment used included an Icom R70 receiver and a half-wave dipole aerial.



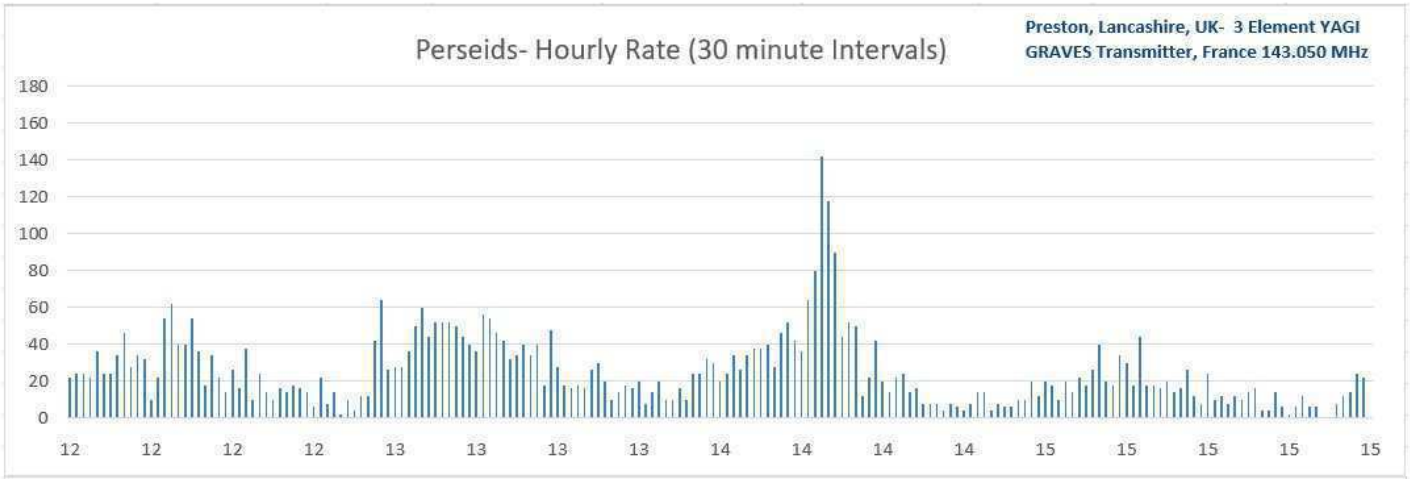

The first peak measures about 30dB above noise level, slightly lower for the others. Local interference can be a problem, but the signals here are quite strong.

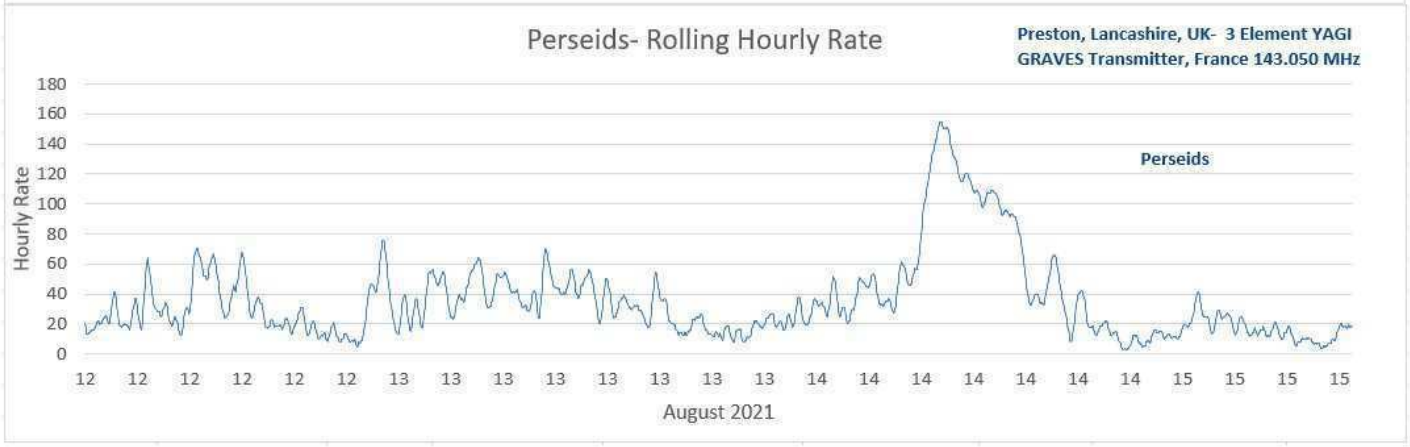
## PERSIED METEORS.

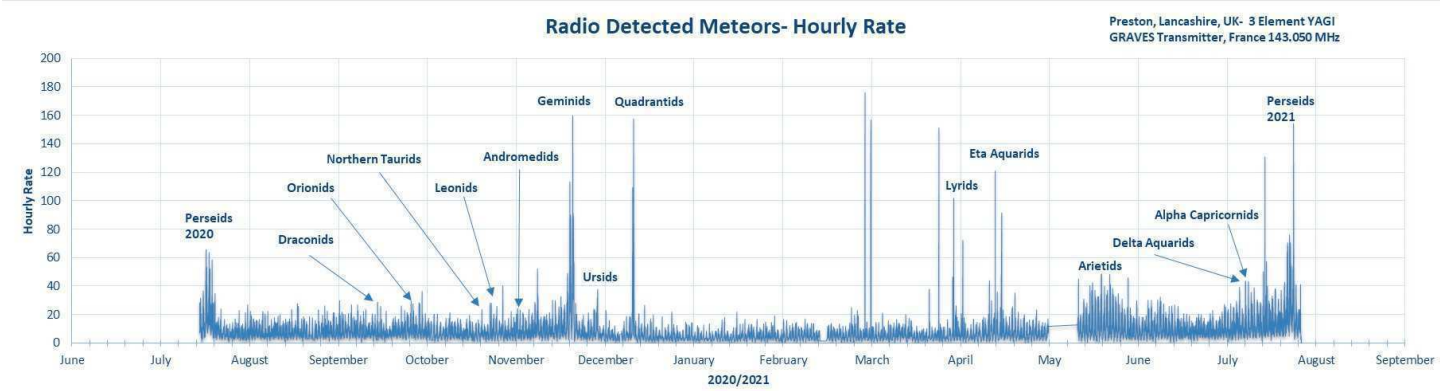
August is of course the month for meteor watching, with the Perseid shower peaking around the 13th. This year there was the extra surprise of a further peak on the 14th. This chart of Perseid counts by Christopher Bailey compares activity in 2021 with 2020:




In 2020, activity levels on the 12th and 13th were very similar, with a lower count on the 14th. This year, the activity increased each day, with the morning of the 14th giving the highest counts. Each column on the chart covers a one hour period, showing the number of echos exceeding 10dB. Non-meteor echos have been removed as far as possible. Stuart Green made similar observations, with 30 minute intervals. The lower panel of rolling hourly rates shows the peak on the 14th very well:

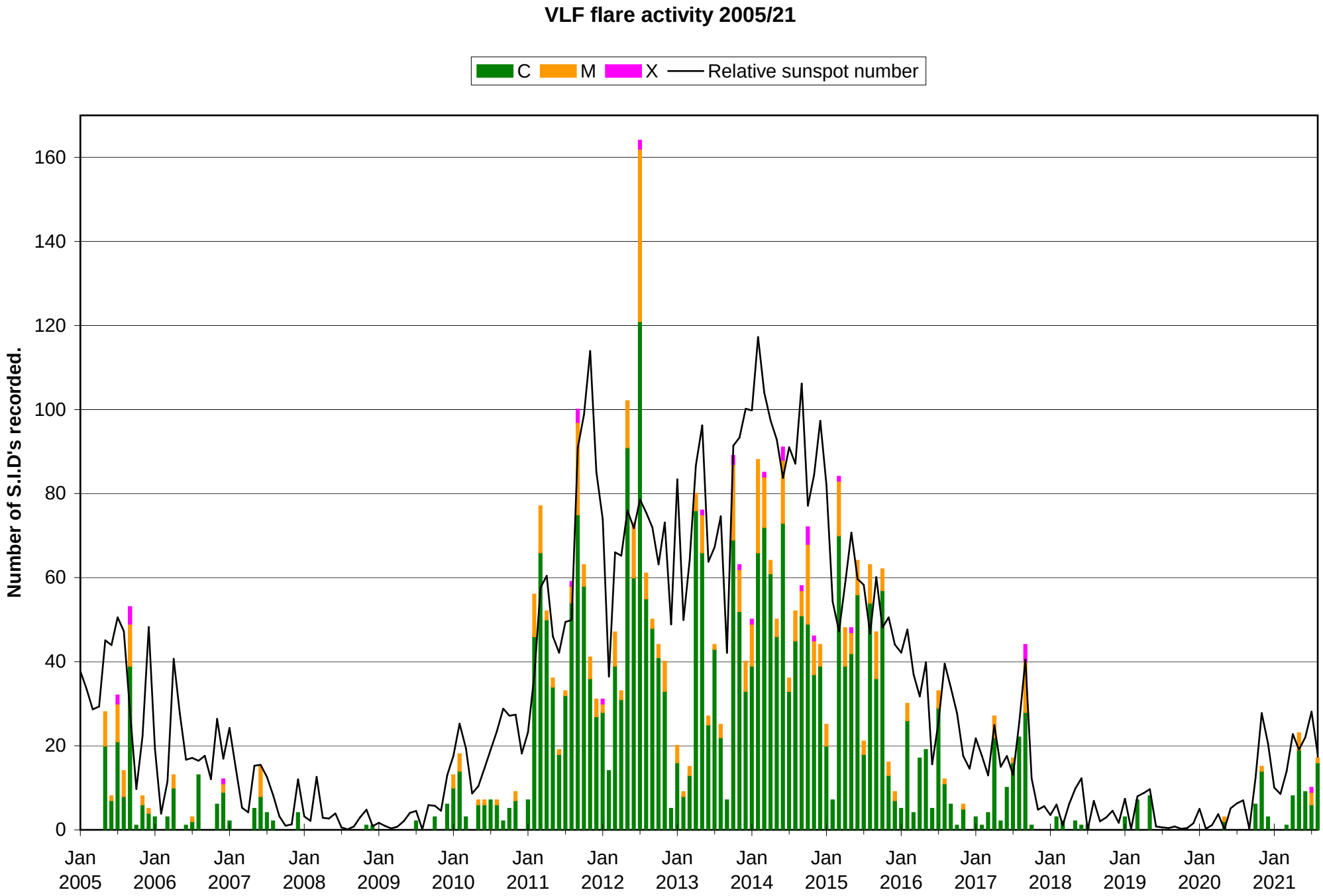



Stuart has also made a chart covering the last 12 months, starting with the 2020 Perseids. Most of the major showers show good peaks, but the 2020 Orionid and Leonid peaks are very weak. It will be interesting to see how they compare this year. Colin Clements also made Perseid counts with the GRAVES signal, covering the expected peak late on the 12th and into the morning of the 13th. Unfortunately the recording period did not cover the unexpected peak on the 14th.

VLF emissions from meteors have bee discussed before, and there is a paper by David Morgan covering this topic. Chris Bailey has been experimenting, and in a session in the morning of August 10th recorded 42 such signals. Two of these matched the timing of meteors caught on camera, and so could possibly be connected. A 25,000 turn coil was used as the aerial.


VLF flare activity 2005/21
C
M
X
Relative sunspot number
Number of S.I.D's recorded.
0
20
40
60
80
100
120
140
160
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

**BAA Radio Astronomy Section.** **2021 AUGUST.**

| | Xray class | Observers | John Cook (23.4kHz/*22.1kHz*) | | | | Roberto Battaiola 20.9kHz | | | | Paul Hyde (22.1kHz/*24kHz*) | | | | Mark Edwards (24.0kHz/*19.6kHz*) | | | | Colin Clements (18.3kHz) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 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) | |
| 20 | C1.7 | 1 | | | | | | | | | 15:46 | 15:55 | ? | - | | | | | | | | |
| 20 | C3.0 | 4 | | | | | 15:49 | 15:57 | 16:08 | 1 | 15:55 | 15:58 | ? | - | 15:48 | 15:58 | 16:29 | 2 | 15:46 | 16:01 | 16:25 | 2 |
| 20 | C2.3 | 2 | | | | | | | | | 16:43 | 16:49 | 17:00 | 1- | 16:46 | 16:50 | 16:53 | 1- | | | | |
| 22 | C1.9 | 6 | | | | | 10:14 | 10:20 | 10:36 | 1 | 10:17 | 10:21 | 10:41 | 1 | 10:20 | 10:22 | 10:43 | 1 | 10:18 | 10:23 | 10:45 | 1+ |
| 24 | C1.5 | 1 | | | | | | | | | | | | | 14:31 | 14:50 | 15:26 | 2+ | | | | |
| 27 | *C1.8* | 3 | | | | | | | | | 12:51 | 12:59 | 13:48 | 2+ | 12:53 | 12:59 | ? | - | | | | |
| 27 | *C1.0* | 1 | | | | | | | | | | | | | 13:05 | 13:15 | 13:21 | 1- | | | | |
| 27 | *C1.0* | 1 | | | | | | | | | | | | | *13:24* | *13:26* | *13:50* | *1+* | | | | |
| 27 | C1.1 | 1 | | | | | | | | | | | | | 15:11 | 15:15 | 15:29 | 1- | | | | |
| 28 | **M4.7** | 6 | 05:59 | 06:05 | 06:17 | 1- | 05:40 | 05:57 | 06:08 | 1+ | | | | | *05:37* | *06:05* | *06:46* | *2+* | | | | |
| 28 | C4.2 | 1 | | | | | | | | | 08:43 | 08:48 | 09:12 | 1+ | | | | | | | | |
| 28 | ? | 1 | | | | | | | | | | | | | 10:12 | 10:25 | 10:42 | 1+ | | | | |
| 28 | C2.7 | 5 | 11:52 | 11:55 | 12:11 | 1 | | | | | 11:50 | 11:58 | 12:35 | 2 | 11:53 | 11:59 | 12:24 | 1+ | | | | |
| 28 | C1.7 | 1 | | | | | | | | | | | | | 12:41 | 12:47 | 12:51 | 1- | | | | |
| 28 | C1.4 | 1 | | | | | | | | | | | | | 16:30 | 16:45 | 17:06 | 2 | | | | |
| 29 | C8.1 | 8 | 10:02 | 10:04 | 10:40 | 2 | | | | | 10:00 | 10:04 | 10:41 | 2 | 10:02 | 10:06 | 10:56 | 2+ | 10:03 | 10:07 | 11:01 | 2+ |
| 29 | C2.9 | 3 | | | | | | | | | 17:11 | 17:32 | 18:17 | 2+ | 17:18 | 17:31 | 17:55 | 2 | | | | |
| 30 | C1.1 | 1 | | | | | | | | | 09:31 | 09:36 | 09:57 | 1+ | | | | | | | | |

| | Xray class | | Steve Parkinson (Various) | | | | Andrew Thomas (19.6kHz/*22.1kHz*) | | | | Phil Rourke (23.4kHz) | | | | John Wardle | | | | Christopher Bailey (18.3kHz) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Tuned radio frequency receiver, frame aerials. | | | | Tuned radio frequency receiver, 0.6m frame aerial. | | | | Spectrum Lab, 0.6m frame aerial. | | | | SpetrumLab/Starbase, Active mini-whip aerial. | | | | Spectrum Lab | | | |
| DAY | | | START | PEAK | END (UT) | | START | PEAK | END (UT) | | START | PEAK | END (UT) | | START | PEAK | END (UT) | | START | PEAK | END (UT) | |
| 20 | C1.7 | | | | | | | | | | | | | | | | | | | | | |
| 20 | C3.0 | | | | | | | | | | | | | | | | | | | | | |
| 20 | C2.3 | | | | | | | | | | | | | | | | | | | | | |
| 22 | C1.9 | | | | | | | | | | | | | | | | | | 10:18 | 10:21 | 10:36 | 1- |
| 24 | C1.5 | | | | | | | | | | | | | | | | | | | | | |
| 27 | *C1.8* | | | | | | | | | | | | | | | | | | 12:49 | 12:50 | 13:05 | 1- |
| 27 | *C1.0* | | | | | | | | | | | | | | | | | | | | | |
| 27 | *C1.0* | | | | | | | | | | | | | | | | | | | | | |
| 27 | C1.1 | | | | | | | | | | | | | | | | | | | | | |
| 28 | **M4.7** | | | | | | *06:00* | *06:11* | *07:32* | *3* | 06:00 | 06:12 | 07:53 | 3 | | | | | | | | |
| 28 | C4.2 | | | | | | | | | | | | | | | | | | | | | |
| 28 | ? | | | | | | | | | | | | | | | | | | | | | |
| 28 | C2.7 | | | | | | 11:50 | 11:58 | 12:21 | 1+ | | | | | | | | | | | | |
| 28 | C1.7 | | | | | | | | | | | | | | | | | | | | | |
| 28 | C1.4 | | | | | | | | | | | | | | | | | | | | | |
| 29 | C8.1 | | 10:01 | 10:05 | 10:36 | 2 | 10:00 | 10:03 | 11:24 | 2+ | | | | | | | | | | | | |
| 29 | C2.9 | | | | | | | | | | | | | | | | | | | | | |
| 30 | C1.1 | | | | | | | | | | | | | | | | | | | | | |

| | Xray class | | Colin Briden (22.1kHz) | | | | Andrew Lutley (23.4kHz) | | | | Peter Meadows (23.4kHz) | | | | John Elliott (18.3kHz) | | | | 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) | |
| 20 | C1.7 | | | | | | | | | | | | | | | | | | | | | |
| 20 | C3.0 | | | | | | | | | | | | | | | | | | | | | |
| 20 | C2.3 | | | | | | | | | | | | | | | | | | | | | |
| 22 | C1.9 | | | | | | | | | | | | | | | | | | 10:16 | 10:25 | 11:38 | 2+ |
| 24 | C1.5 | | | | | | | | | | | | | | | | | | | | | |
| 27 | *C1.8* | | | | | | | | | | | | | | | | | | | | | |
| 27 | *C1.0* | | | | | | | | | | | | | | | | | | | | | |
| 27 | *C1.0* | | | | | | | | | | | | | | | | | | | | | |
| 27 | C1.1 | | | | | | | | | | | | | | | | | | | | | |
| 28 | **M4.7** | | | | | | | | | | | | | | | | | | ? | 06:03 | ? | - |
| 28 | C4.2 | | | | | | | | | | | | | | | | | | | | | |
| 28 | ? | | | | | | | | | | | | | | | | | | | | | |
| 28 | C2.7 | | 11:52 | 11:57 | 12:08 | 1- | | | | | | | | | | | | | | | | |
| 28 | C1.7 | | | | | | | | | | | | | | | | | | | | | |
| 28 | C1.4 | | | | | | | | | | | | | | | | | | | | | |
| 29 | C8.1 | | 10:02 | 10:04 | 10:15 | 1- | | | | | | | | | | | | | 10:03 | 10:11 | 10:36 | 2 |
| 29 | C2.9 | | 17:14 | 17:30 | 17:43 | 1+ | | | | | | | | | | | | | | | | |
| 30 | C1.1 | | | | | | | | | | | | | | | | | | | | | |

BAA Radio Astronomy Section.

# BARTELS DIAGRAM

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

| ROTATION | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2529 | F | 26 | 27 | 28 | 29 | 30 | 31 | 2019 January 1 | 2 | 3 | 4 | 5 | 6 C | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 2213 17 | 18 | 19 | 20 | 21 |
| 2530 | F | 22 | 23 | 24 | 25 | 26 CB | 27 | 28 | 29 C | 30 | 31 | 2019 February 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 2214 13 | 14 | 15 | 16 | 17 |
| 2531 | F | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 2019 March 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 2215 13 | 14 | 15 | 16 |
| 2532 | F | 17 | 18 | 19 | 20 C | 21 CCC | 22 CCCB | 23 B | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 2019 April 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 B | 2216 9 | 10 | 11 | 12 B |
| 2533 | F | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 B | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 2019 May 1 | 2 | 3 | 4 | 5 BB | 2217 6 CCCC | 7 BCC | 8 | 9 C |
| 2534 | F | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 2019 June 1 | 2 | 2218 3 | 4 | 5 |
| 2535 | F | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 2219 30 | 2019 July 1 | 2 |
| 2536 | F | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 2220 27 | 28 | 29 |
| 2537 | F | 30 | 31 | 2019 August 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 2221 23 | 24 | 25 |
| 2538 | F | 26 | 27 | 28 | 29 | 30 | 31 | 2019 September 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 2222 19 | 20 | 21 |
| 2539 | F | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 2019 October 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 2223 17 | 18 |
| 2540 | F | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 2019 November 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 2224 13 | 14 |
| 2541 | F | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 2019 December 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2225 10 | 11 |
| 2542 | F | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 2020 January 1 | 2 | 3 | 4 | 5 | 2226 6 | 7 |
| 2543 | F | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 2020 February 1 | 2 | 2227 3 |
| 2544 | F | 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 | 2228 1 |
| 2545 | F | 2020 March 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 | 2229 28 |
| 2546 | F | 29 | 30 | 31 | 2020 April 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 2547 | F | 2230 25 | 26 | 27 | 28 | 29 | 30 | 2020 May 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 2548 | F | 2231 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 MCCB | 30 | 31 | 2020 June 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 2549 | F | 2032 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 2020 July 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 2550 | F | 2033 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 2020 August 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 2551 | F | 11 | 2234 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 2020 September 1 | 2 | 3 | 4 | 5 | 6 |
| 2552 | F | 7 | 2235 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 2020 October 1 | 2 | 3 |
| 2553 | F | 4 | 2236 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 CC | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 C | 28 | 29 BCCC | 30 |
| 2554 | F | 31 | 2237 1 B | 2020 November 2 | 3 | 4 B | 5 CBCC | 6 CBC | 7 B | 8 | 9 | 10 C | 11 C | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 CC | 23 | 24 | 25 | 26 C |
| 2555 | F | 27 | 28 C | 2238 29 CM | 30 | 2020 December 1 | 2 | 3 | 4 | 5 | 6 C | 7 C | 8 | 9 | 10 | 11 | 12 | 13 | 14 C | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 2556 | F | 24 | 25 | 2239 26 | 27 | 28 | 29 | 30 | 31 | 2021 January 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| 2557 | F | 20 | 21 | 22 | 2240 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 2021 February 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 2558 | F | 16 | 17 | 18 | 2241 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 2021 March 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 C | 10 | 11 | 12 | 13 | 14 |
| 2559 | F | 15 B | 16 | 17 | 2242 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 B | 26 | 27 | 28 | 29 | 30 | 31 | 2021 April 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 2560 | F | 11 | 12 | 13 | 2243 14 | 15 | 16 | 17 B | 18 | 19 | 20 C | 21 | 22 CCCC | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 2021 May 1 | 2 | 3 | 4 | 5 | 6 | 7 M |
| 2561 | F | 8 CC | 9 CC | 10 | 2244 11 | 12 C | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 C | 22 CCMM | 23 CCBM | 24 | 25 | 26 CCCC | 27 | 28 C | 29 | 30 | 31 | 2021 June 1 | 2 | 3 |
| 2562 | F | 4 | 5 | 6 | 7 | 2245 8 CCC | 9 CCB | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 C | 26 | 27 | 28 CBC | 29 | 30 CC |
| 2563 | 2021 July F 1 | 2 | 3 MCXM | 4 MC | 2246 5 | 6 | 7 | 8 | 9 CCB | 10 | 11 | 12 | 13 | 14 | 15 | 16 C | 17 | 18 C | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | |
| 2564 | F | 28 | 29 | 30 | 31 | 2021 August 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 CCC | 21 | 22 C | 23 |
| 2565 | F | 24 C | 25 | 26 | 27 CCCC | 2248 28 MCCC | 29 CC | 30 C | 31 | 2021 September 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |