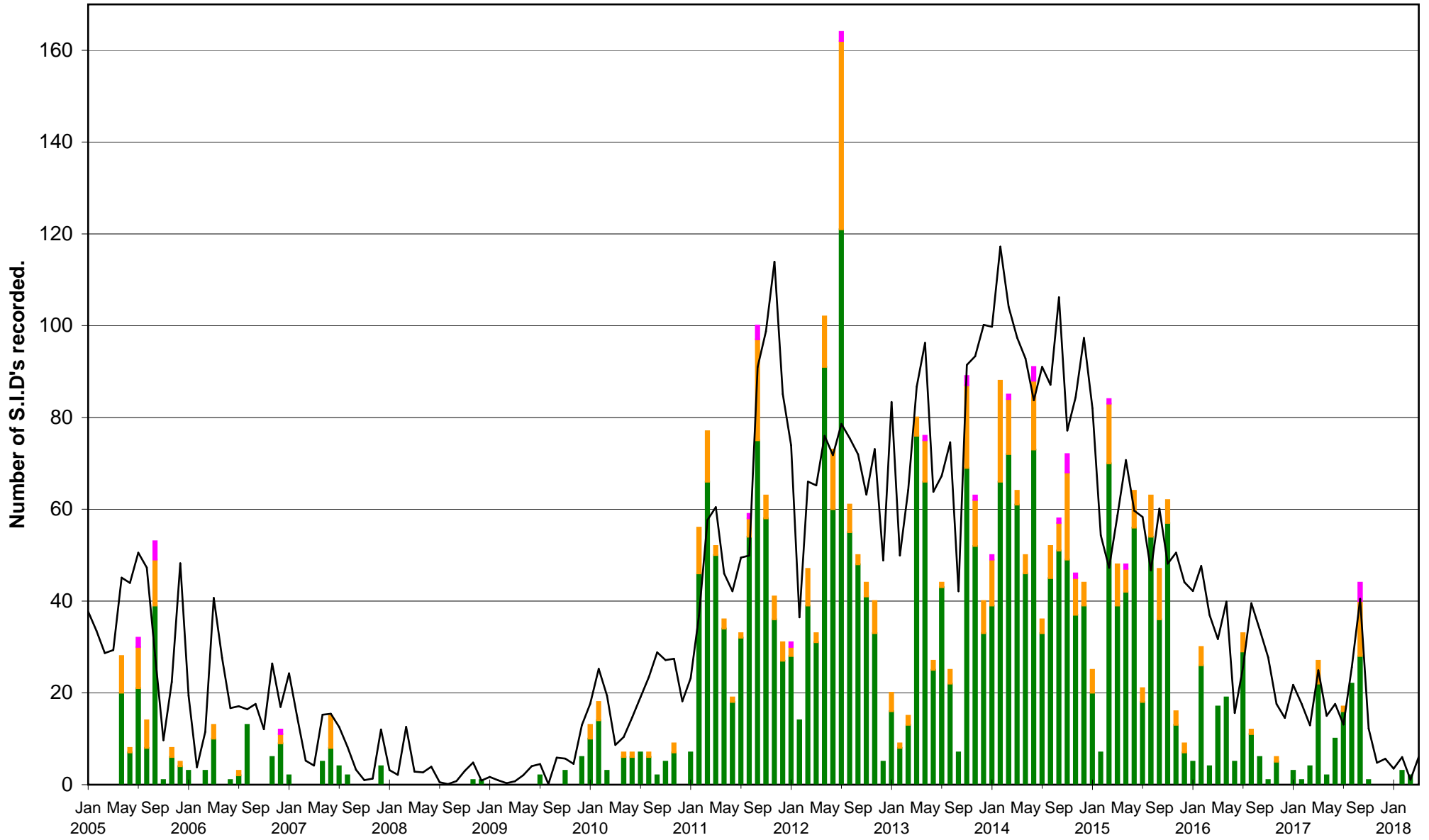


VLF flare activity 2005/18.

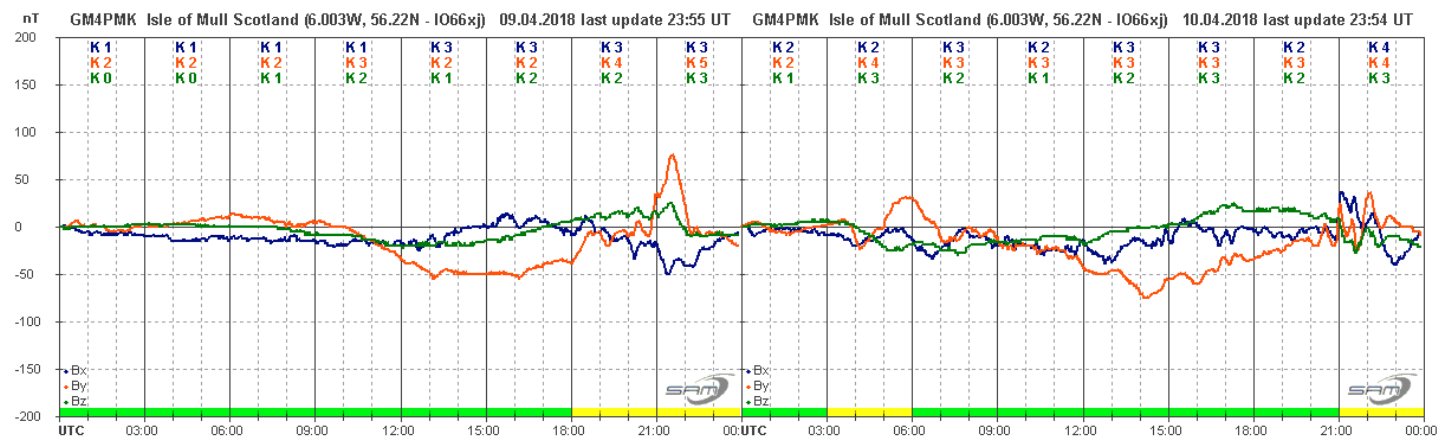


March ended with a C4.6 flare from AR12703. This active region was still present as April started, and produced several small B-class flares over the first few days of the month. The only one strong enough to produce a SID was the B9.0 flare on the 1st. Several small sunspot groups made brief appearances during the month, producing a series of B1 to B5 flares, none of which we recorded. April ended with an A1.1 flare being the strongest shown in the GOES data on April 30th.

23.4kHz remained off apart from a few brief periods mostly towards the end of the month. Colin Clements recorded no activity at 151MHz or 327MHz.

MAGNETIC ACTIVITY.

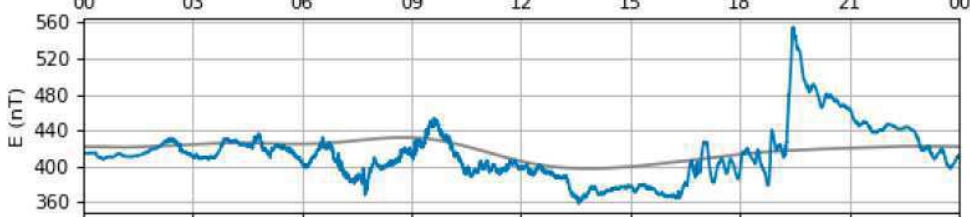
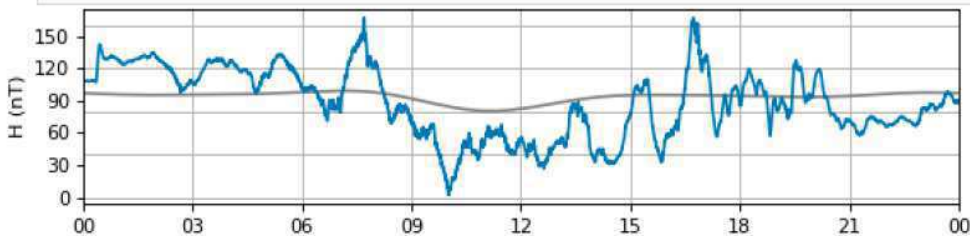
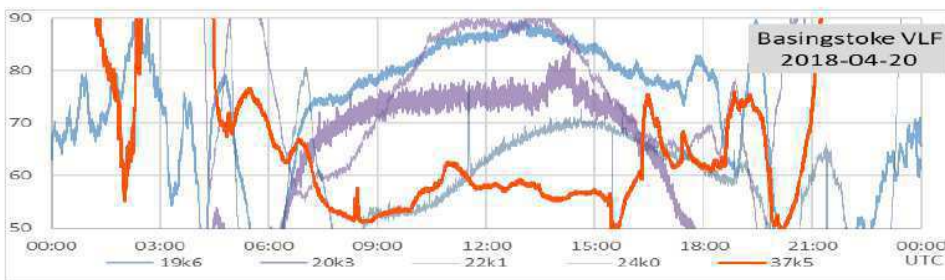
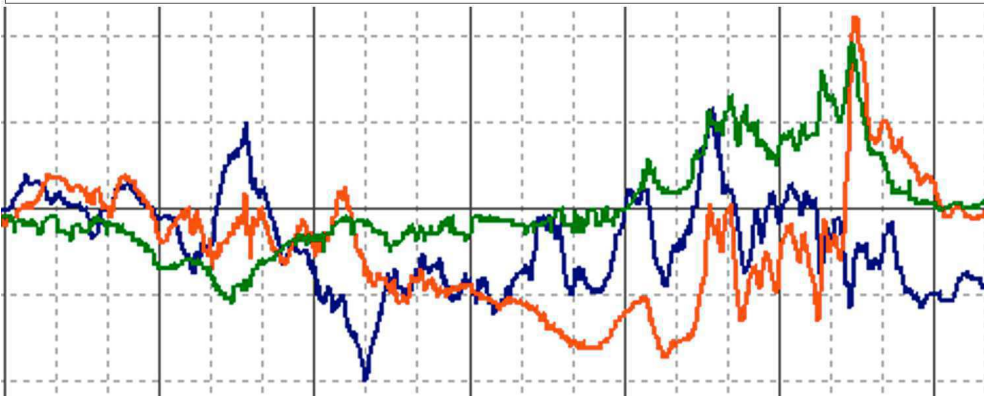
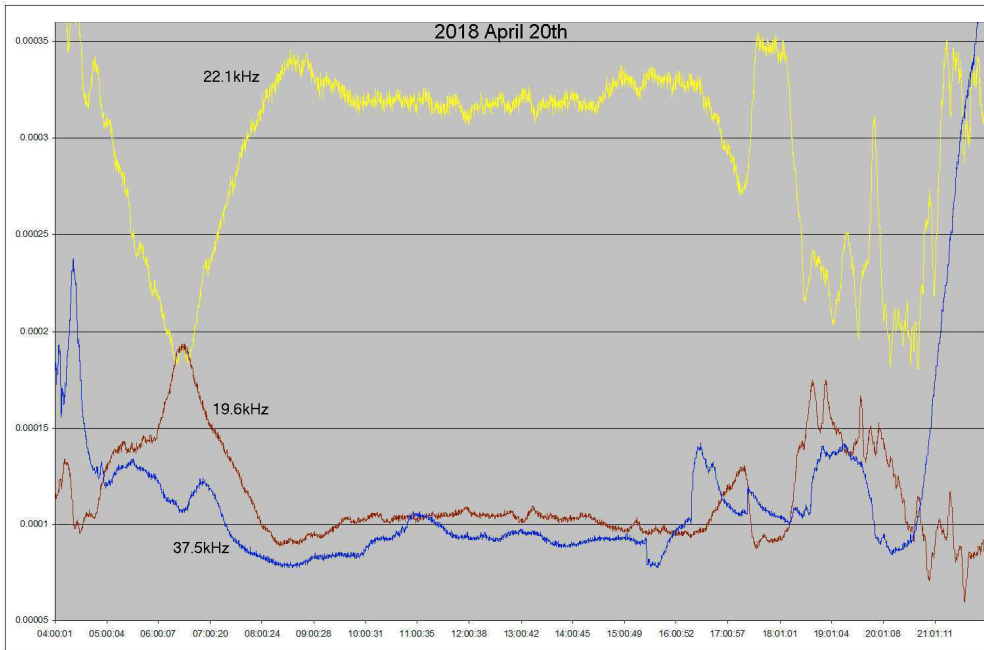
There were no CMEs reported during April, all of the magnetic activity being associated with coronal holes. Disturbances from the 9th to the 13th were from an equatorial hole that aimed its high speed wind directly towards the Earth.



This recording from Roger Blackwell covers the 9th and 10th, and shows the most active period from this CHSS. Satellite measurements record a wind speed of 610km/s on the 9th, slowly decaying to 300km/s over the next five days.

A much more complex and larger coronal hole followed, with magnetic disturbances starting early on the 20th. Satellite measurements show a wind speed of 620km/s on the 21st and 22nd, rising from its nominal 300km/s early in the morning of the 20th. Although the most active geomagnetic disturbances occurred in the evening of the 20th, the wind speed again decayed slowly over several days. This activity is also linked to some VLF effects recorded by Mark Edwards and Paul Hyde. The upper chart on the next page is from Mark, showing the usual effects at 37.5kHz, but also appearing to show effects at 19.6kHz and 22.1kHz. Mark has added Roger Blackwell's magnetometer traces below.

The lower chart is from Paul, with the VLF signals compared to the Crooktree magnetometer (near Aberdeen). Not all of the magnetic peaks tie-in directly with signal strength changes, but the general signal disturbances are occurring over the same time period in both recordings. The sunset effect is also interfering, particularly with 19.6kHz and 22.1kHz.



SAMNET / CRK2 Magnetic Field 2018-04-20

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

BARTELS DIAGRAM

ROTATION	KEY:	DISTURBED.	ACTIVE	SFE	B, C, M, X = FLARE MAGNITUDE.	Synodic rotation start (carrington's).
2478				2162		2015 April
F	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		
2479				2163		2015 May
F	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		
2480				2164		2015 June
F	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		
2481				2165		2015 July
F	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	
2482				2166		
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 30 31	1	
2483				2167		2015 August
F	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	29		
2484				2168		2015 September
F	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		
2485				2169		2015 October
F	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				
2486				2170		2015 November
F	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				
2487				2171		2015 December
F	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				
2488				2172		2016 January
F	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				
2489				2173		2016 February
F	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				
2490				2174		2016 March
F	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				
2491				2175		
F	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					
2492				2176		2016 April
F	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					
2493				2177		2016 May
F	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 24					
2494				2178		2016 June
F	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					
2495				2179		2016 July
F	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					
2496				2180		2016 August
F	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					
2497				2181		2016 September
F	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					
2498				2182		2016 October
F	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					
2499				2183		2016 November
F	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					
2500				2184		
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 27 28 29 30 31					
2501				2185		2016 December
F	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 26					
2502				2186		2017 January
F	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					
2503				2187		2017 February
F	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					
2504				2188		2017 March
F	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					
2505				2189		2017 April
F	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					
2506				2190		2017 May
F	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					
2507				2191		2017 June
F	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					
2508				2192		2017 July
F	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					
2509				2193		
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 30					
2510				2194		2017 August
F	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					
2511				2195		2017 September
F	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					
2512				2196		2017 October
F	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 19					
2513				2197		2017 November
F	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					
2514				2198		2017 December
F	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					
2515				2199		2018 January
F	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					
2516				2200		2018 February
F	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					
2517				2201		2018 March
F	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					
2518				2202		
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 30					
2519				2203		2018 April
F	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					
2520				2204		2018 May
F	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					