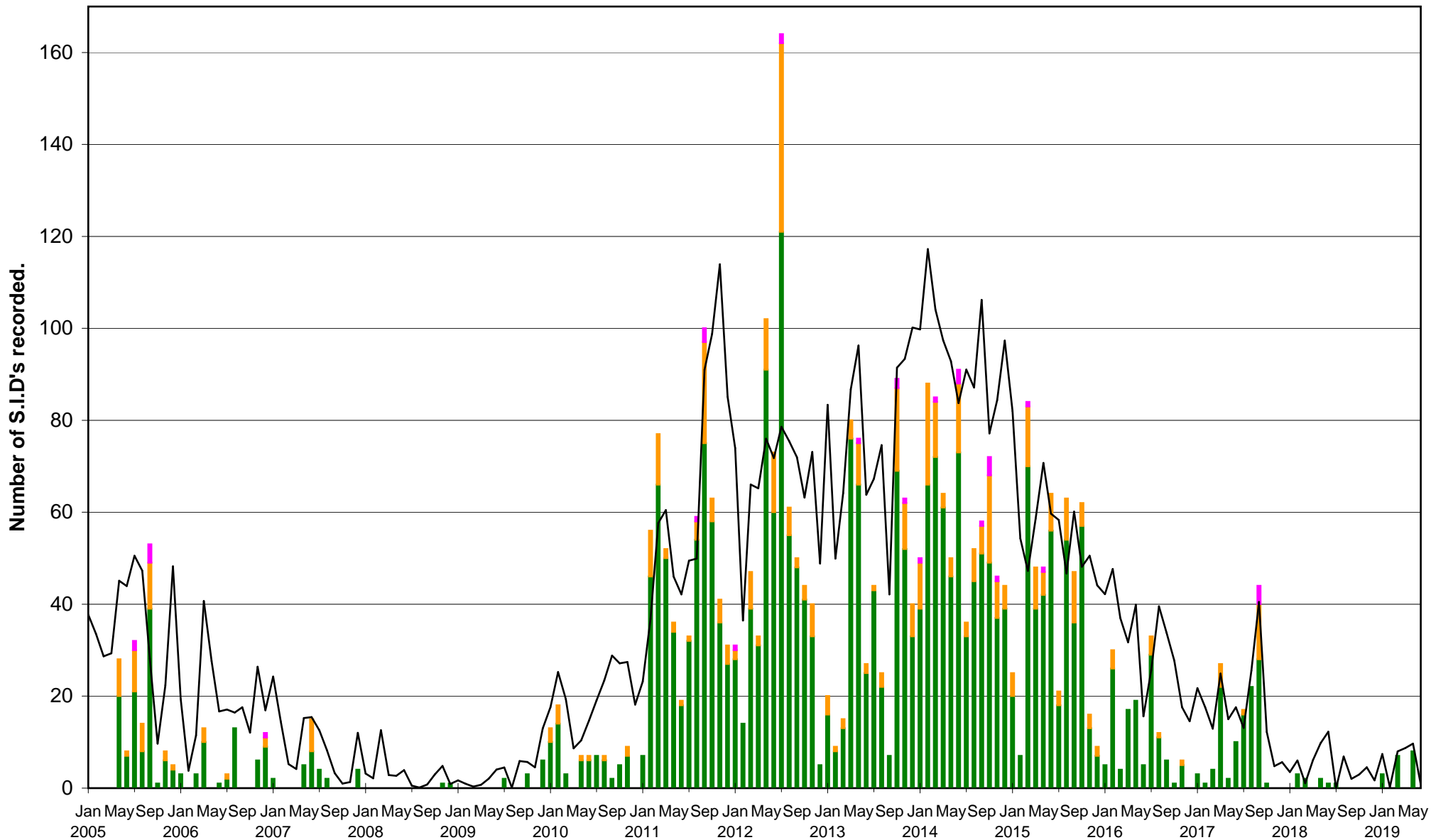
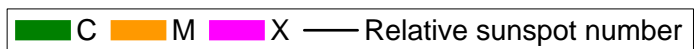


	Xray class	Observers	John Cook (23.4kHz/22.1kHz)	Roberto Battaiola (20.9kHz)	Paul Hyde (22.1kHz/24kHz)	Mark Edwards (24.0kHz)	Colin Clements (23.4kHz/18.3kHz)
			Tuned radio frequency receiver, 0.58m frame aerial.	Modified AAVSO receiver.	Spectrum Lab / PC 1.5m frame aerial.	Spectrum Lab / PC 2m loop aerial.	Tuned Radio Frequency receivers, 0.76m screened loop aerial.
DAY		0	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)

	Xray class		Steve Parkinson (Various)	Andrew Thomas (23.4kHz)	Phil Rourke (23.4kHz)	Jim Barber	John Elliott (18.3kHz)
			Tuned radio frequency receiver, frame aerials.	Tuned radio frequency receiver, 0.6m frame aerial.	Spectrum Lab, 0.6m frame aerial.	Spectrum Lab, 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)

	Xray class		Colin Briden (22.1kHz)				
			Spectrum Lab / PC, 1.2m frame aerial.				
DAY			START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)	START PEAK END (UT)

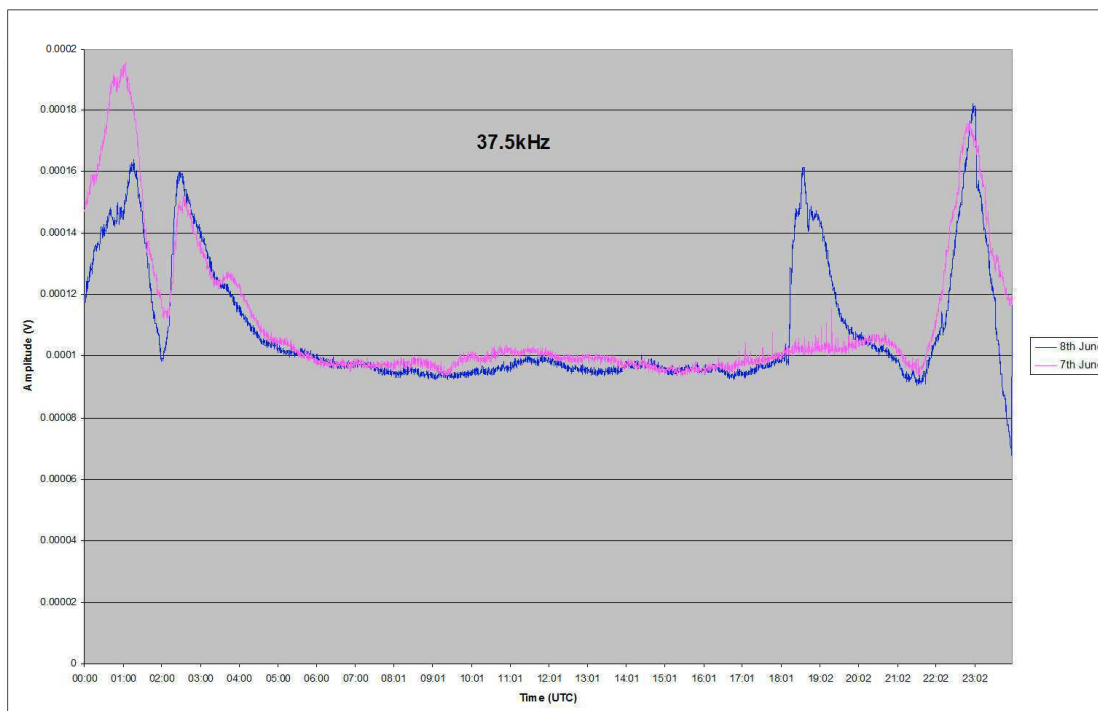
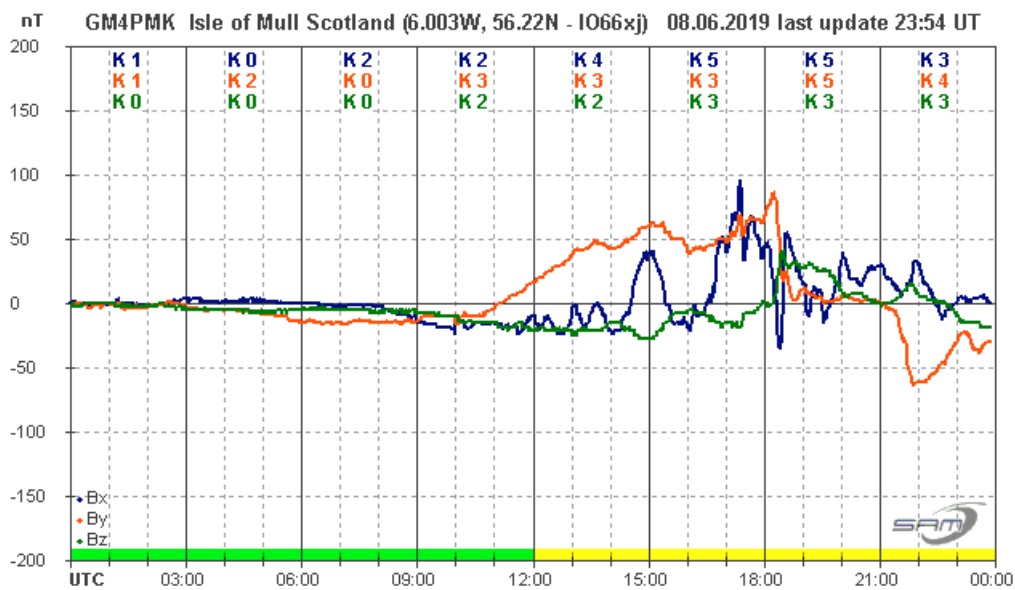
### VLF flare activity 2005/19.



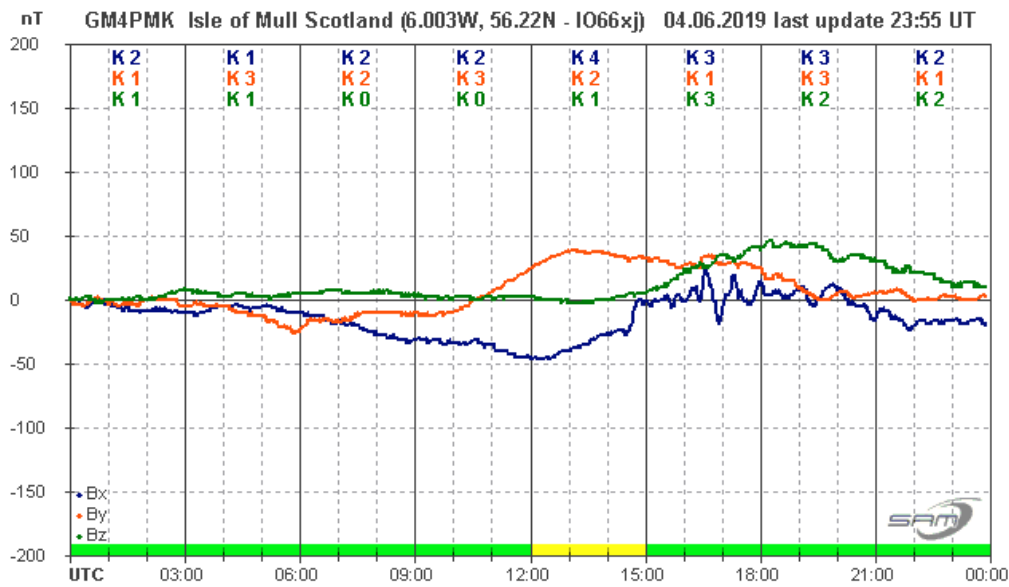
The X-ray flux recorded by GOES-15 has been flat at A7 to A8 for the entire month of June. There was a B2.2 flare shown on the 1<sup>st</sup>, but barely noticeable above the background. It is therefore not surprising that we have not recorded any SIDs this month. The 23.4kHz signal has again been off-air for most of the month, with just a few short bursts of activity.

### MAGNETIC OBSERVATIONS.

June was also fairly quiet magnetically, with just a few disturbances from coronal holes. There was also a small CME recorded on the 8<sup>th</sup>, caused by the decay of a solar filament on the 3<sup>rd</sup>. This is well shown in the magnetic recording by Roger Blackwell, and also caused a transient in the 37.5kHz signal recorded by Mark Edwards:



Roger's chart appears to show the initial shock at about 10UT, with a very strong transient just after 18UT matching the blue (Bx) trace in Mark's recording. For comparison, the pink trace is the recording for the previous day. The disturbance faded out in the early hours of the 9<sup>th</sup>.

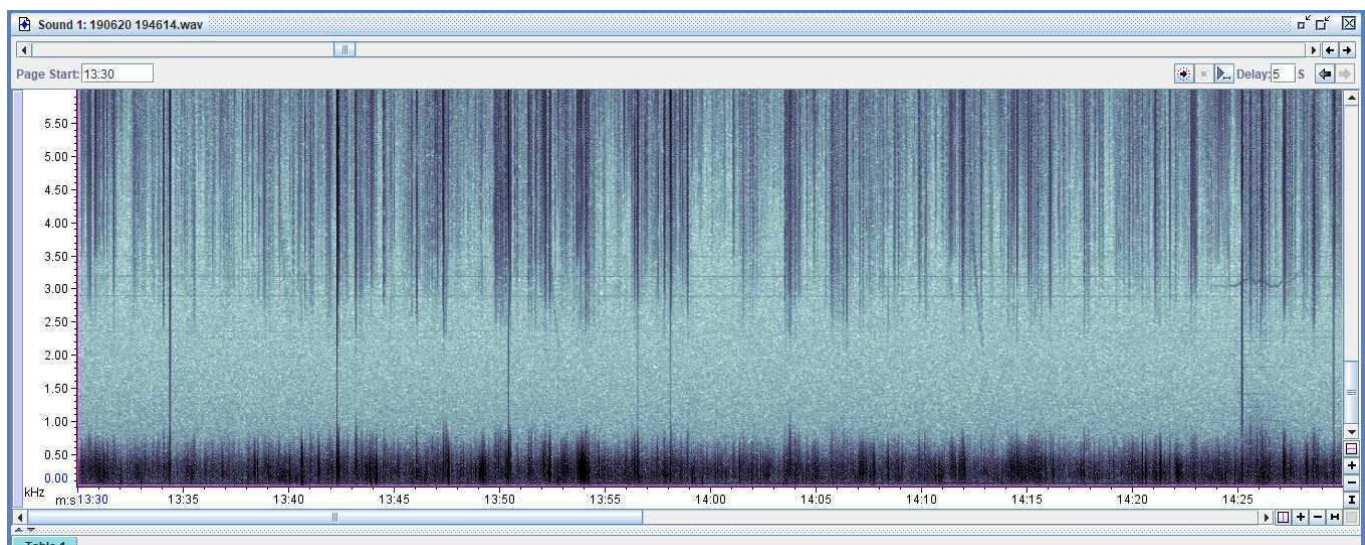


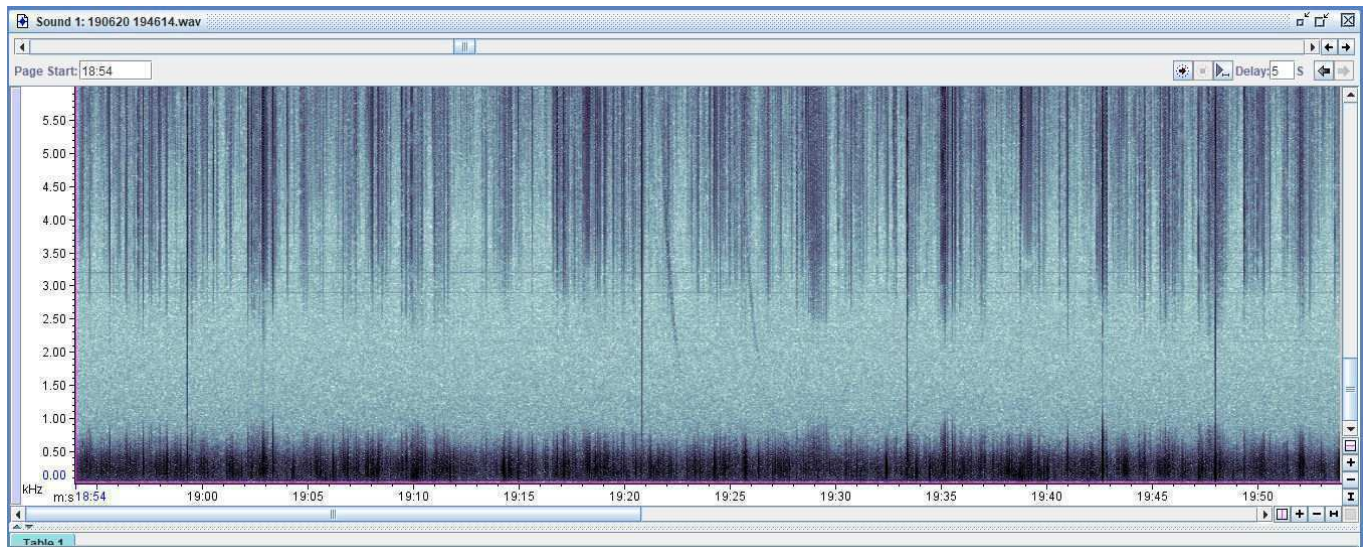
This recording By Roger shows a much smaller disturbance on the 4<sup>th</sup>. There were also some minor disturbances seen on the 13<sup>th</sup>, 14<sup>th</sup>, and 30<sup>th</sup>, all from a scattering of small coronal holes.

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

### ATMOSPHERICS.

Colin Briden has again been making some recordings of VLF atmospherics, this time from a location near the west coast of Mull. This is a very remote location, well away from local electrical interference. The nearest mains being over 4km away. Recordings were made over 56 minutes until a rain shower stopped play. Falling rain drops can carry quite a large electrical charge, and were producing signals of their own. Recording started at 19:46:14UT, chart timing shown in minutes and seconds on the horizontal axis.





Listening to this on headphones, the signal below 1 kHz was particularly strong, and is noticeably different to that show in last month's report. There is some minor interference from the battery powered recording equipment, a difficult problem to avoid. Towards the right-hand end of the first chart is a gliding tone from about 14m24s to 14m28s into the recording. The second chart appears to show a multi-path whistler between 19m20s and 19m30s into the recording. Seventeen whistlers in total were recorded during the 56 minute listening period. Colin is planning on continuing this work, so it will be interesting to see how activity responds to changing solar activity. At the moment solar activity is very low, with a blank sun visible most of the time. Predictions vary as to the length / depth of the minimum and the activity level of cycle 25. Some sources suggest more activity by the end of the year. We will soon know!

