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Interactive comment on "Building a Raspberry Pi School Magnetometer Network in the UK" *by* Ciarán D. Beggan and Steve R. Marple

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This manuscript presents details of a simple, low cost, magnetometer system suitable both for outreach activities in schools and for scientific monitoring of large amplitude geomagnetic disturbance events.

A clear description is given of the measurement system and examples of data collected from a number of locations across the UK are presented. An illustration of the scientific value of the data in monitoring the impact of the September 2017 geomagnetic storm is given, along with a very nice movie that is available through you tube.

The authors are to be commended for conceiving and carrying out this inspiring project! It provides a splendid example of how the public can be actively involved in real-world

geoscience. Furthermore the pitfalls and challenges inherent in such a project are clearly set out; this will be of great aid to those contemplating similar activities. The manuscript is both well written and appropriately referenced.

I recommend it be accepted once the minor points/suggestions listed below are addressed.

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1. Perhaps it may be useful to state the approx precision of the system and price (1.5 nT and 150 GBP?) of the system already in the abstract. This information is likely of great interest to many readers.

2. Section 2: Similar to a bicycle dynamo: please add a note that unlike a bicycle dynamo there is no permanent magnet in the core involved in generating the Earth's magnetic field, since the temperatures there are too high.

3. Section 2: 'the speed and density of the solar wind ... increases and energy is passed' -> 'the speed and density of the solar wind ... increases, and the interplanetary magnetic field is perturbed, resulting in energy being passed'

4. Section 2: 'generating large magnetic fields' -> generating relatively large magnetic fields (amplitudes up to 100-1000 nT)

5. Section 2.1 ' The current is directly proportional to' -> 'the current needed to produce saturation is directly proportional to'

6. Section 3: The magnetometer system consists of -> The Raspberry Pi school magnetometer system consists of

7. Section 3. 'true accuracy' Do you mean precision? Is this not a variometer without absolute measurement accuracy?

8. Section 3.1/ Fig 2. There is an offset in H between Rpi and GDAS1 early on 12th Sept of > 50 nT, any idea of the reason for this?

9. Section 3.1 'remove much of the error by backing-out the measured temperature through calibration. Has this been done? If so it might be nice to show the corrected version in Fig 3?

10. Section 4 'cover the UK in both latitude and longitude'. Perhaps a school in N. Ireland might also be of interest?

11. Section 5 'the aurora moves as far south as LER' Do you mean the magnetic signature of the aurora or the aurora as seen in visual observations?

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