My Project:
Research on the effect of cosmic radiation at different latitudes using HiSPARC detectors

Pip Rudge

- Studying Maths, Physics, Psychology & Theatre Studies.

- Enjoy athletics and drama.

- Future - Physics at University.

What are cosmic rays?

What is HiSPARC?

My Objective – To find out if there is a link between latitude and the number of cosmic ray events and if so, why?

My 1st hypothesis – As latitude increases the number of cosmic ray events will increase.

My 2nd Hypothesis – The reason for this effect would be due to the Earth's magnetic field.

Reading background articles:

Cosmic rays

Data analysis

Practice analysis:

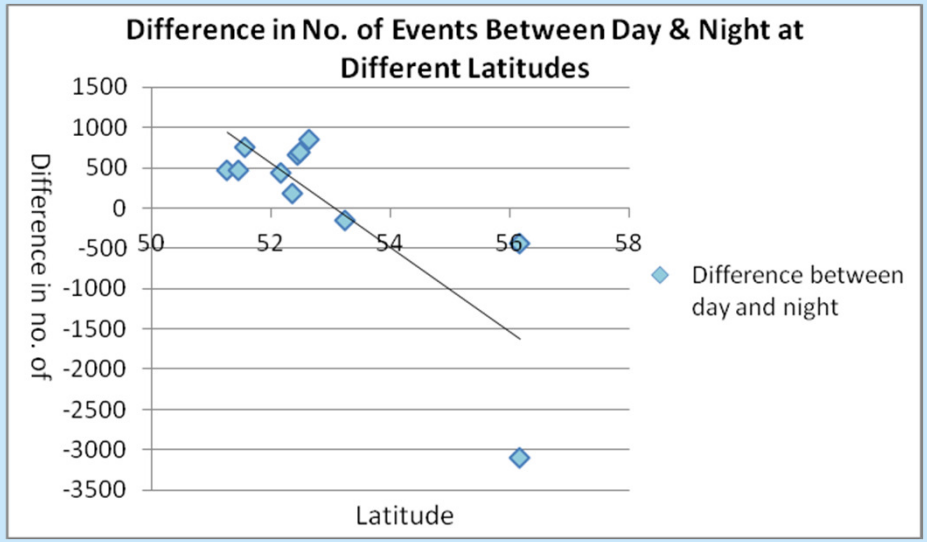
Winter-Summer variation

Day-night variation

Effect of pressure

Preliminary Analysis:

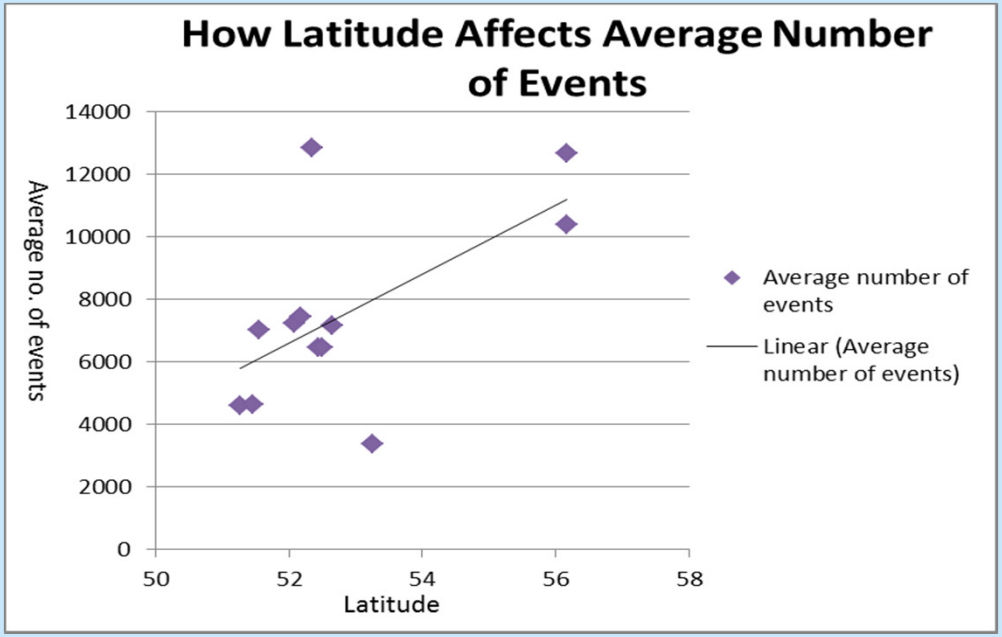
- Compare the difference between day and night at different latitudes.
- Different detector sensitivity.
- Analysed data from detectors with lowest and highest latitudes.



- Difficult to find a suitable hypothesis.
- Discussion with Cristina Lazzeroni.
- Normalising data.
- Voltage of detector - doesn’t make significant difference.

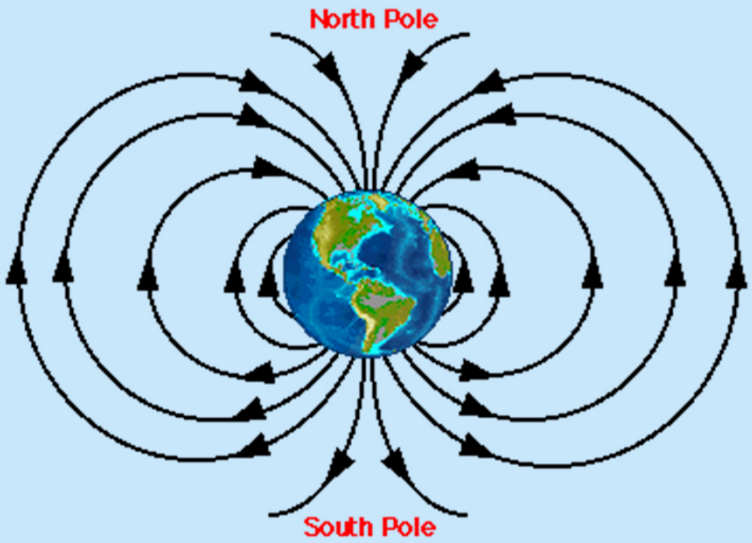
Main Analysis:

- Investigate the total number of cosmic ray events.
- 15 stations.
- July.

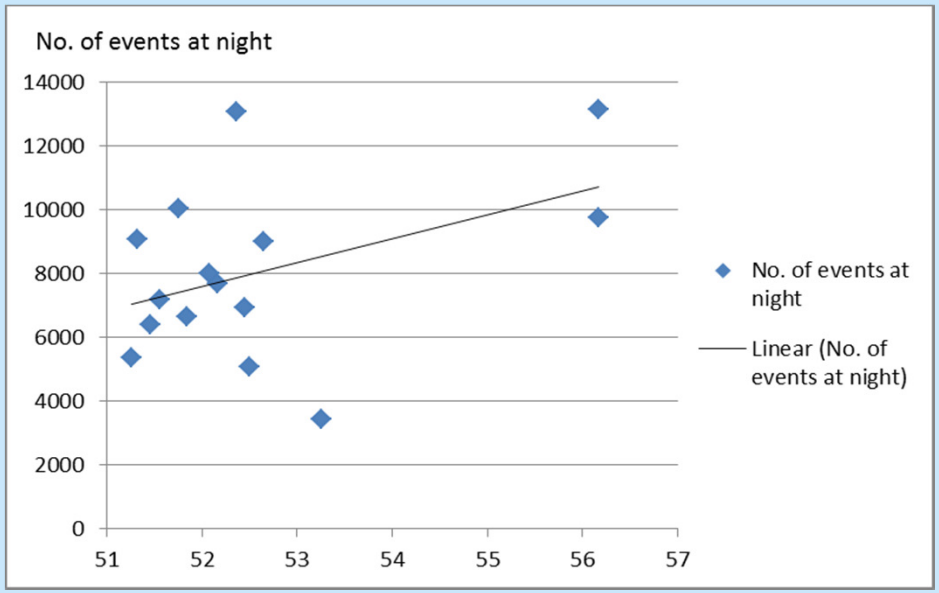


Possible Reasons:

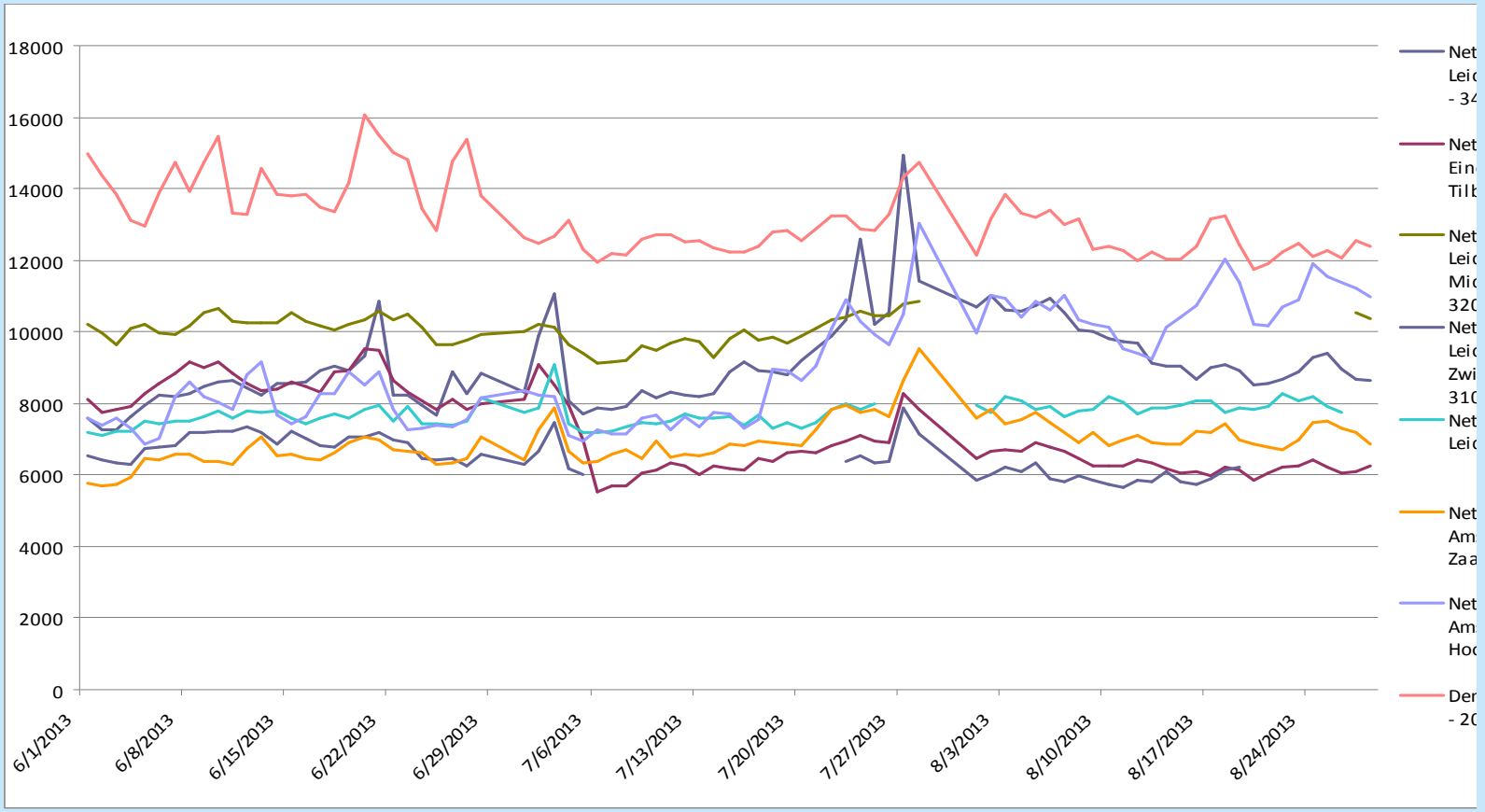
- Sun's Radiation
- Earth's magnetic field



- Only used data at night.
- Found a correlation of 0.4248.
- Further research needed.



•Plotted a graph of the number of events each day against latitude for 7 stations for 3 months – June, July and August.



- Did I meet my objective?
- Were my hypotheses right?
- Future work?

Thank you for listening

Questions?