CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY

Name(s)
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Project Number
J0713

Project Title
Geomagnetic Storms on GPS Devices

Abstract

Objectives/Goals
I want to see how geomagnetic storms affect GPS precision.

Methods/Materials
I used a Garmin GPS device, NOAA Space Weather Now, and a computer. I went on Google maps to find the precise coordinates of my location. Every Monday, Wednesday, and Saturday, I took three tests measuring my coordinates. Then, I checked on NOAA to see if there was a storm. If there was a storm, I marked the font red. Then, I compiled the data into graphs.

Results
My results showed that on average, the storm days were off more than the non-storm days. The coordinates were off on average 24 feet.

Conclusions/Discussion
From this, I conclude that geomagnetic storms do interfere with GPS reception. Therefore, when using a GPS, it is impossible to know how accurate the coordinates are. I would also like to test wether cellphone reception is affected by geomagnetic storms.

Summary Statement
My project was done to find if Geomagnetic storms in the ionosphere affect handheld GPS device precision

Help Received