CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

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Project Number
S0610

Project Title
Sunspot Temperature Correlation using Sunspot and Northern Hemisphere

Abstract

Objectives/Goals
Can we predict future temperatures using the number of sunspots from 1856-2002, and the temperatures in the Northern Hemisphere during the same period?

Methods/Materials
computer

Results
We have correctly compiled a large amount of data with which to use as raw information to feed into the time series prediction program. We have used the data to create graphs that draw correlations between sunspot activity and temperatures in the Northern Hemisphere. We know that sunspots are on a cycle. The graphs show that the temperature in the Northern Hemisphere is increasing, especially in the last twenty-five years. In the same time period the graphs also show increased sunspot activity.

Conclusions/Discussion
The data from both the sunspots and the northern hemisphere temperature have been entered into the excel program and "checked, checked, and re-checked". The data in both categories range from 1856 to 2004. From that data and the graphs of that data, we have found out that not only is the temperature increasing, but the sunspots are becoming more active as well. That is a positive correlation. The average of the cycles of sunspots is nearly parallel to the average of the temperature data.
A correlation is when two or more different sets of data are nearly the same, or close to being the opposite. In other words, they vary in the same way. Correlation is measured on a scale of negative one to positive one. A positive one correlation means that there is an exact (or super close to it) relationship between the different sets of data. A negative one correlation means that the data is close to the opposite of the other data. This data is just as useful as positive one correlation data.
The work we have done so far has been disappointingly inconclusive. However, our next step is to complete studying the time prediction program and see if it will not only make a correlation between our sets of data, but also use the data to predict temperatures in the Northern Hemisphere. This program should tell us whether or not our hypothesis is correct.

Summary Statement
We are trying to predict future temperatures from sunspot data.

Help Received