CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY

Name(s)
Vikram Kalahasthi

Project Number
J1910

Project Title
Orbits and Objects: The Influence of Gravitational Pull on Celestial Objects

Abstract

Objectives/Goals
The objective of my project is to see if a star's gravitational field strength would have any effect on the elliptical path of the comet that orbits the star.

Methods/Materials
I used an iron bolt, fish hook weighing scale, stand (desk lamp), disk magnets, a pushpin, floss/string, and a flat iron wrench. First, I made an oscillating pendulum using the desk lamp, floss, and iron bolt. Then, I found the magnetic field strength of each magnet. Next, I made a measuring chart using 21 concentric circles. Finally, I rotated the bolt in the influence of magnets and traced its path using 4 groups - 4 magnets, 8 magnets, 12 magnets, and no magnets.

Results
I found out that the most elliptical orbit was caused by the strongest magnet, and the least elliptical path was caused by no magnets.

Conclusions/Discussion
The strongest magnet caused the most elliptical path. The results mean that if the star has a strong gravitational pull, the comet that orbits the star will have a very elliptical path and vice versa.
By creating a model, a prediction can be made on when a comet will hit Earth.

Summary Statement
The central focus is how stars of different gravitational pulls affect the path of the comet that orbits the star.

Help Received
Father helped buy materials.