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5/7/08
Adv. Physics

On the Detection of Rays from the Cosmos

Did you realize that you are being constantly bombarded by tiny cosmic particles? Cosmic rays radiating from space are constantly traveling through the earth's atmosphere. One of the smallest subatomic particles we have discovered so far is the muon. This is the most common cosmic particle to travel all the way to the earth.

The speaker yesterday demonstrated equipment that was able to plot a graph based on the amount of cosmic particles, mostly muons, to reach the detector plates. The muons originate from protons that disintegrate when they strike the atmosphere. This is called a "shower." The muons are usually the only particles leaving the shower that are small enough to penetrate the atmosphere. But where do these protons come from? What accelerated them to speeds great enough to break them apart when they strike other atoms in our atmosphere? This is not entirely known. It is thought that some high energy stars are capable of spinning protons out of them and sending them flying across the universe. Either way, these "free" accelerated particles are perfect for low-cost research.

The speaker's main goal was not simply to teach us about cosmic particles and their history, but also to explain to us that we did not need a multi-billion dollar particle accelerator to do simple detection experiments. Even though the particles we are dealing with are extremely small, so small they easily travel through almost any material, they do not require the most advanced equipment to detect. This may mean possible particle observation labs in future physics classes at Faith.