Remarks

Once again, time was an issue in the experiment, and this resulted in splitting up into two separate groups to carry out measurements with different separation materials. When this was done, the time intervals and the distance between the scintillators that each group used were different. It was assumed that with sufficient measurements (i.e. noting the "volume" of the distance between the scintillators (distance separated x surface area over which cosmic rays were measured)) would still allow us to eventually analyze our data as a cohesive whole, but it would have been simpler overall to have had just one setup and work from there.

As in the last experiment, there were issues of other materials being inserted between the scintillators (for good reason: directly placing heavy cement/lead blocks on one of the scintillators could have crushed it). However, like the other material, it didn't seem to have much of an effect on the results, but for the best accuracy, the materials ideally should have been placed/suspended such that they were the only things between the scintillators.

Our report found that, as mentioned before, the materials had little effect on the rate of cosmic rays passing through the scintillators, with the exception of the rates measured by Cosmic Chris. If this experiment were to be repeated, more conclusive data would probably be obtained through several large changes. Instead of separating the scintillators by a small amount (less than a meter), they should be separated by large increments (at least several meters) and the different materials between them should also have a correspondingly greater thickness if any distinctions between them are hoped to be discerned. In addition to these spatial changes, the time of the trials should also be increased accordingly in order to obtain enough data points to be statistically conclusive one way or the other.

Aside from these major changes, several smaller ones would allow for increased efficiency and ease of interpretation. Having large sheets of materials with constant composition (flat wooden boards, "sections" of tile as opposed to dealing with the problem of cracks in stacking individual tiles together) would allow for better precision. Also, the sheets would ideally be big enough to cover the entire bottom scintillator: in our experiment, several kinds of materials were smaller than that, resulting in obtaining measurements only through one smaller area shared between the scintillators and the material, a potential problem relative to the placement relative to the photomultiplier tube (near tube vs. far from tube might get different readings, data points). Thinking big again, it would also be nice if, in the larger setup, we could have larger scintillators to obtain more data via increased surface area.

Although our experiment was fairly useful for determining the fact that small separations and the interference of fairly thin sheets of material (less than half a meter thick) between scintillators didn't affect the rate of cosmic rays, a follow-up experiment with the larger parameters mentioned might give different results that could be more significant in the long run (i.e., "how many cosmic rays are airplane passengers subject to relative to people on the ground," as opposed to "how many cosmic rays is the person on the ladder subject to relative to the people on the ground"). With the right equipment and enough time, a large scale experiment in this vein might be more conclusive than several smaller ones.