Remarks:

It should be noted that these experiments were carried out in a relatively short amount of time. If time became less of an issue, more trials at different distances would have been carried out (i.e., more trials where the distance between the scintillators would be between 120 and 300 cm, or if additional trials were performed with much larger separation distances) in order to more precisely define the relationship between the rate of coincidences and the distance between the scintillators: with more data points, a graph might have been obtained, which might have led to the determination of a best-fit line and its corresponding equation, an equation which would better quantitatively describe the aforementioned relationship. Also, given more time, more trials at individual separation distances would have been performed, making the data more precise and reliable overall. With more time the trial length could have also been increased, once again providing greater precision, especially when scintillators were separated by a large distance (and consequently had a much smaller number of coincidences occur during the four-minute interval). The greater the number of coincidences recorded in the trials, the smaller the significance that the inevitable differences of a few coincidences between trials conducted at the same separation distance would have on the average rate of coincidences calculated at that distance. Finally, if time was a non-issue, the same set of scintillators, with their specific quirks and tendencies, would be used for all trials to minimize effects caused by innate differences between the sets.

The issue of maintaining the scintillators' horizontal relationship to each other (as on an invisible x-y plane) as the vertical distance between them was changing (moving one box along the z-axis), was brought up rather late, forcing the experimenters to resort to fairly simplistic, possibly inaccurate methods of responding to this challenge. Two segments of marked string allowed the top scintillator's position to be kept constant relative to the bottom one indirectly, through comparing its position to the wooden posts of the small separation device (see photos). It is more than likely that the posts themselves were not exactly straight and perpendicular to the scintillators, and as a result of this and other small measuring estimates and errors, it is likely that the horizontal relationship (x-y plane) changed, resulting in a change in the amount of surface area "shared" by the two scintillators, which would have affected the number of cosmic rays passing through both. Additional measuring tools such as a level might have been helpful in ensuring that the entire top scintillator was moved to a uniform height (i.e., parallel to the scintillator below it), and reference points with greater precision (i.e., if the posts on the small separation device were exactly the same width and were perfectly straight).

For both separation setups, in order to achieve separation some secondary interference between the scintillators could not be avoided: the large separation device required the top scintillator to rest on a metal shelf, while the small scintillator required the top scintillator to rest on two metal extensions. It is possible that these may have interfered with coincidences, from slowing the passage of some cosmic rays to completely absorbing others. Ideally, a setup which minimized contact between the separation device and the area above and between both scintillators would allow for the best representation of the rate of coincidences.

With respect to the oscilloscope data, the only data which could be obtained was that from photos taken in which both coincidence waves appeared on the screen.

Capturing such rapidly changing events on a personal camera was fairly difficult, and each trial yielded about one or two pictures from which data could be derived. Perhaps with some sort of computer program one could get a constant stream of the oscilloscope coincidence waves and take data from many to obtain better averages and representations of the data as opposed to basing results on just one or two instances from each four-minute trial.

Finally, a couple considerations whose effects on the data were probably fairly negligible, but worth mentioning: the experiment was conducted inside a laboratory building, so it is possible that, with the protective layers of a roof and floors, the number of coincidences measured inside as opposed to an outside location (with no such "impediments" to cosmic rays falling to earth), would be somewhat different. Also, it might be possible that there would also be a change in those numbers if the experiment had been carried out at different elevations (i.e. on different floors), as muons tend to decay and lose energy the further they have to fall.

This experiment provides some initial data that points to the presence of general trends in the relationships which were explored, but greater accuracy and precision is required before any results can be considered conclusive.