Team Number: ALCS-2

School Name: Aldo Leopold Charter School

Area of Science: Space and earth

Project Title: Why is there something rather than nothing

● **the definition of the problem:**
Why is there less anti- matter than matter? Why was anti-matter disappearing in the creation of the universe? If the answer of anti-matter was discovered it would change how we think of time and space. I am going to try modeling how and why there is less anti-matter in the universe. My program will be written in net logo to give me insight on the project then move to java. The program will be simulating milli-seconds after the Big-Bang and the destruction of matter and antimatter in the creation of our universe. My goal is to have a feasible suggestion to why we see what we see.

● **Your plan for solving the problem computationally:**
My plan is to code a simple design of particles hitting and then “dying” on Netlogo. I have researching and found out that Python would be a great platform to use for scientific simulation like this project. Python seems to be easy to get around and is very easy to use with mathematical equations which i will need especially gravity.

● **A description of the progress you have made up to this time**. I have gotten a simple program with netlogo i haven't had enough time with the project due to School and college. Next semester i will have more work done on it. So far i have particles of positive and negative which come from a dense center and expand out. If the particles touch they do die but they all die quickly and i know this is due to not have mathematical equations.

● **the results you expect to get.** I do not expect to finish my goal mainly because no one has successfully simulated a complete model of the bigbang that does result in anti-matter losing. I have been researching on particle flipping in which if a particle is shot at high speed or given enough time they have been seen to flip there signs from positive to negative. This research may help me with my coding of the simulation. My goal for this project is not to win nor to lose because my real goal is to gain in knowledge.

Works Cited

Los Angeles Times. Los Angeles Times. Web. 10 Dec. 2016.

"Did the Universe Come from Nothing? - CSI." CSI. Web. 10 Dec. 2016.

"Is Anti-matter Matter Going Backwards in Time?" Quantum Field Theory - Is Anti-matter Matter Going Backwards in Time? - Physics Stack Exchange. Web. 10 Dec. 2016.

Krauss, Lawrence Maxwell. A Universe from Nothing: Why There Is Something Rather than Nothing. New York: Atria Paperback, 2013. Print.

"The Origin of the Universe." Stephen Hawking. Web. 10 Dec. 2016.

Sorensen, Roy. "Nothingness." Stanford Encyclopedia of Philosophy. Stanford University, 28 Aug. 2003. Web. 10 Dec. 2016.

"A Universe from Nothing?" A Universe from Nothing? | The Institute for Creation Research. Web. 10 Dec. 2016.

"| Explore." | Explore. Web. 10 Dec. 2016.