Natalia Abreu, 2020

Research Statement

Where I began: My research question is: what environmental challenges do we face while getting closer to the sun? Getting to this final question was a struggle and a lot of working through obstacles. I wanted to research something space-related, however astronomy is a little complex to research because so much is unknown, and the universe is huge. My initial question was “can space expansion affect how close we are getting to the sun?” Then it shifted to “can the expansion of the universe affect time?” These are fascinating questions, but are a little too complex to find answers and research that is not a paragraph long. My final question involves both space and our environment, which are two things that I am deeply interested in.

What I found: My research was interesting and fun, if we disregard all the articles I found that were not free. Doing deeper research, I discovered some global issues I did not know existed because of the sun. For example, warming oceans, and extreme events because of temperature rise. I based my research on this problem that I discovered in a NASA website regarding global climate change. I wanted to understand the foundation of the problem, which is our beautiful sun that provides energy and sunlight to our planet. In the first article, I discovered that the earth is getting hotter because the sun is getting brighter. I already knew that all stars go through a process called “the life cycle of a star” before dying and becoming a black dwarf, however this process takes a long time. Our sun is young and is in the main sequence so it needs to get brighter, hotter, and bigger before cooling down and becoming a black dwarf aka dying. In addition, because the sun is getting brighter, many global issues are tied to it. The article also speaks about how scientists believe that the sun has changed its state and is stronger than ever. In addition, during my research I came across this article that talked about coral bleaching, which is another way to say that corals are dying. I always found corals beautiful but I did not know that they were essential for our survival and that they are at risk. Corals protect us from waves, storms, and floods by forming barriers to protect the shoreline from waves and storms. They also help to prevent loss of life, property damage, and erosion. But because of warming oceans, many corals have died and many disasters have occurred - for example, in 1998 the strongest El Niño happened, which devastated many cities and left a lot of people without a home.

What happens next: I am interested in researching how we can prevent natural disasters such as el Niño, which was a rare event according to scientists. I also want to investigate what further problems we might face because of the sun, and how we can prepare for it. There are countless environmental issues because of global warming that affects every living thing, from the smallest of organisms to the bigger ones. Because we do not know so much about the ocean, the same as the universe, I guarantee there will be many research papers that will come regarding this problem.