In Theory...

Weekly Report 9/18/17 to 9/24/17

As part of my ISM journey, I have the opportunity to come up with an original work and a final product that are projects related to my field of study. Astrophysics is unique because it actually has two subsections within itself: creation of equipment and formulating theories. In order to set my mind on one of these subsections, I have been doing a great amount of research in both subfields regarding what they do and anything else doing each would entail. However, learning anything is astrophysics is fairly difficult due to advanced concepts and levels of thinking. Nevertheless, I managed to find a few articles relating to both fields for my research assessment.

My second research assessment encompassed mostly on creating and gathering equipment, focusing on dark matter. This week, I worked on my second research assessment which was about a theory regarding the existence of metallic hydrogen inside of our sun. After this week, I am leaning more towards understanding and creating various theories. As for the theory, it was still a bit advanced in terms of the mathematics and physics behind the phenomena, but luckily it was still simple enough for me to follow along and look up terms that were puzzling. Thus, I gained loads of knowledge regarding various concepts and terminologies as well as the theoretics side of astrophysics. However, the most important idea I learned was how physicists take research and observations to formulate a theory. This process, at least for me, is really inspiring because I have always been in awe as to how scientists go from ground zero to an equation or an idea. However, this process from one idea to another is not linear, but rather a collection of ideas, all potentially answering a certain problem and with research,

disproving and proving certain proposals until only the solution remains. Even then, science and technology always get better, resulting in more accurate descriptions of our universe, which is precisely why I wanted to learn astrophysics in the first place: to help humanity understand the universe, one theory at a time.

Until next week,

Sahil Jain