



Issue/Goal

About a few years ago a new instrument was found at the observatory, the spectroscope. This hasn't actually been used and installed into any telescope yet so my goal was to familiarize myself with the instrument and later on implement it onto a 20 inch telescope for research purposes for future students.

Introducing research project

My first step in this research project was to familiarize myself with the spectroscope, what's inside of it and how it all works together. Then I had to get used to the software Rspec and CCDops that works with the Spectroscope. By using these softwares I had to determine the Pattern of the spectrum that was measured. After learning about all of this my next task was to implement the Spectroscope into the 20 inch telescope so that I can use all of my knowledge that I have learned and actually use it to gather light data from interstellar objects.



Before

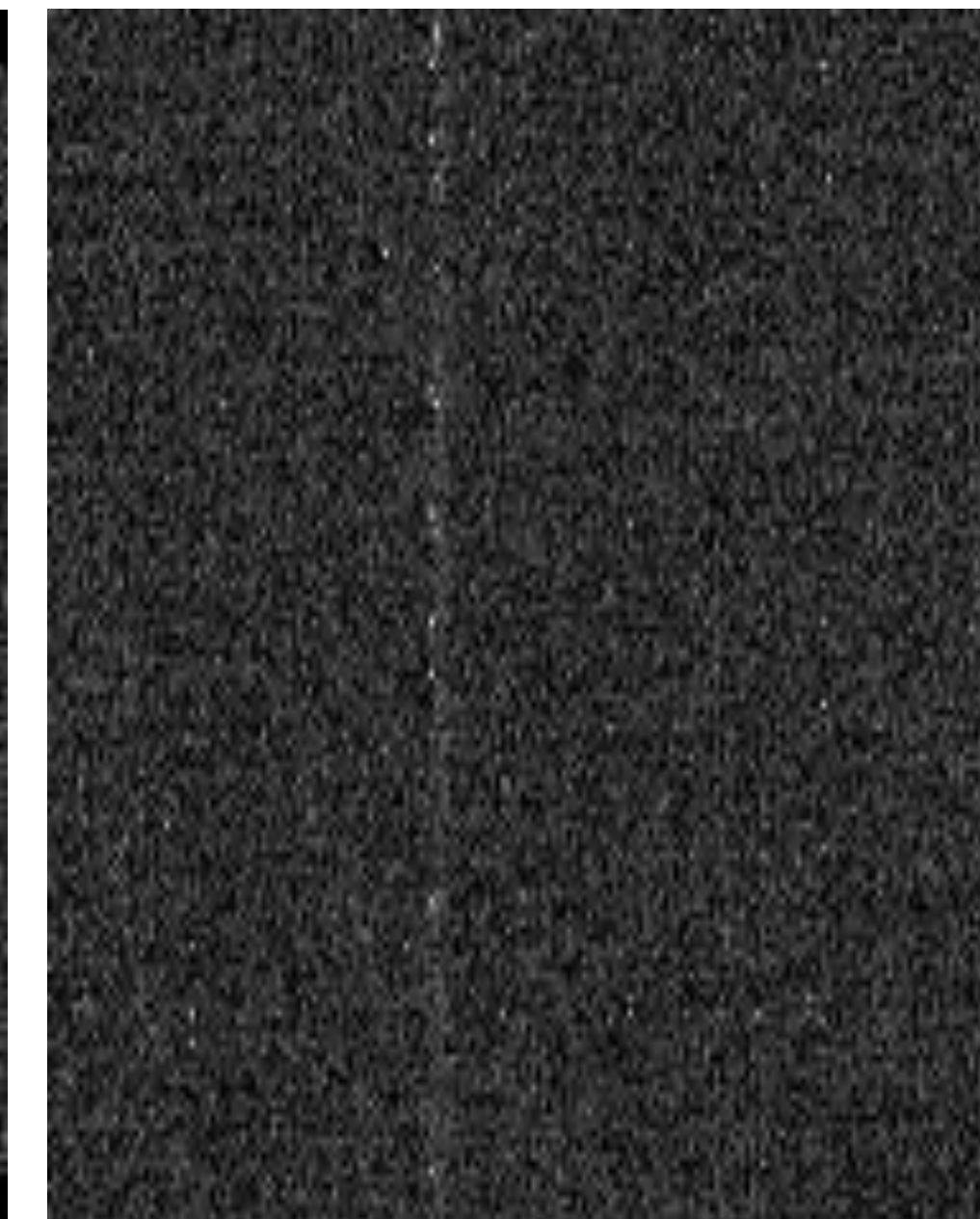
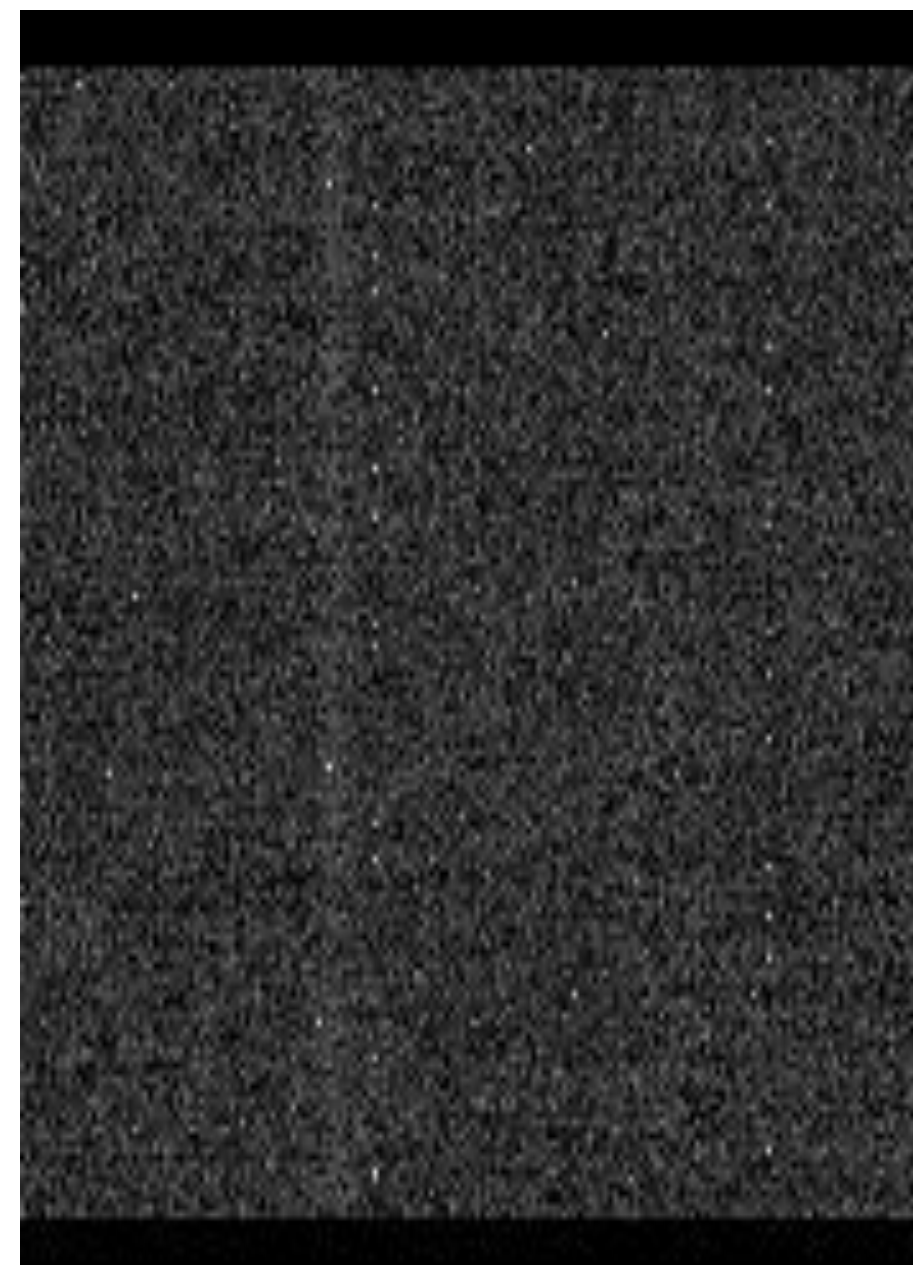
After

What I learned

Besides learning about the spectroscope and the whole research project itself, I have also picked up a lot of skills that are extremely useful for me in the future. I got really good at managing my time efficiently and effectively and I have also gotten better at making a schedule and being more organized. Another very important skill that I learned from this was having a better work ethic, so along with school, clubs and work I managed to get all my hours for this research project and all of these skills that I took from this research is very important and useful in the future. In order to have a successful career and future having a good work ethic, and time management will make life much easier.

Why it's Important

A spectroscope, in general, is pretty important and useful in the astronomy department. So a spectroscope splits starlight into component colors. And the spectrum that we measure from the starlight, or really any interstellar object can give us a lot of information. This information can give us the Temperature, composition, and velocity of the object being measured. We can also determine if this interstellar object that is being measured is coming towards us or away from us, so if we have a measured spectra of an interstellar object that is coming towards us we can tell because the pattern of the spectra will shift to the right.



Future Work

This research project was really interesting to me because of how related related this was to the field that I am hoping to go in the future. This was really my first hands-on experience with something relating to my field so it was really good to actually put all the knowledge that I have taken from previous school work and put it into an experience like this.

Impact

I successfully got myself familiar with the function of the spectroscope and how it all operates. I got to learn software and how to read the spectrum and determine the material of the light that I am measuring. Also after a lot of tedious adjustments we eventually found the slit image in the spectroscope and we got a sharper image of it after focusing it. Unfortunately due to timing and technical issues I have not successfully gotten to implement the spectroscope into the telescope yet.



Acknowledgement

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