

CHART Protocol for Observing the Milky Way Galaxy

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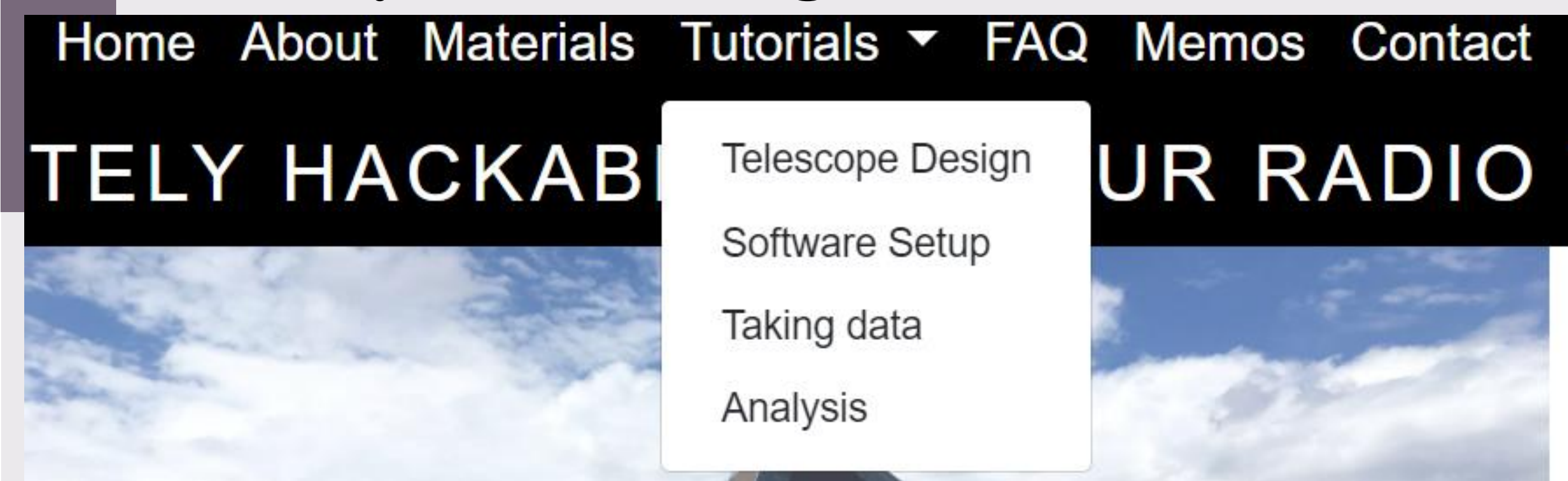
Abstract

CHART stands for Completely Hackable Amateur Radio Telescope, and it is used to collect signals from the Milky Way Galaxy. This project began so that other students can make their own radio telescopes with less expensive materials, making it more accessible for all. The goal for my project was to create a protocol for other students to be able to follow and recreate the experiments. The protocol will include setting up the horn (telescope), pointing it in the correct direction, having it at the correct angle, having the software set up and everything correctly plugged in, and a goal for the data collection. This will allow for consistent results with the telescope, eliminating possible outliers. The protocol has been used and tested by at least two other students and is now posted on the CHART website online for others to use and follow.



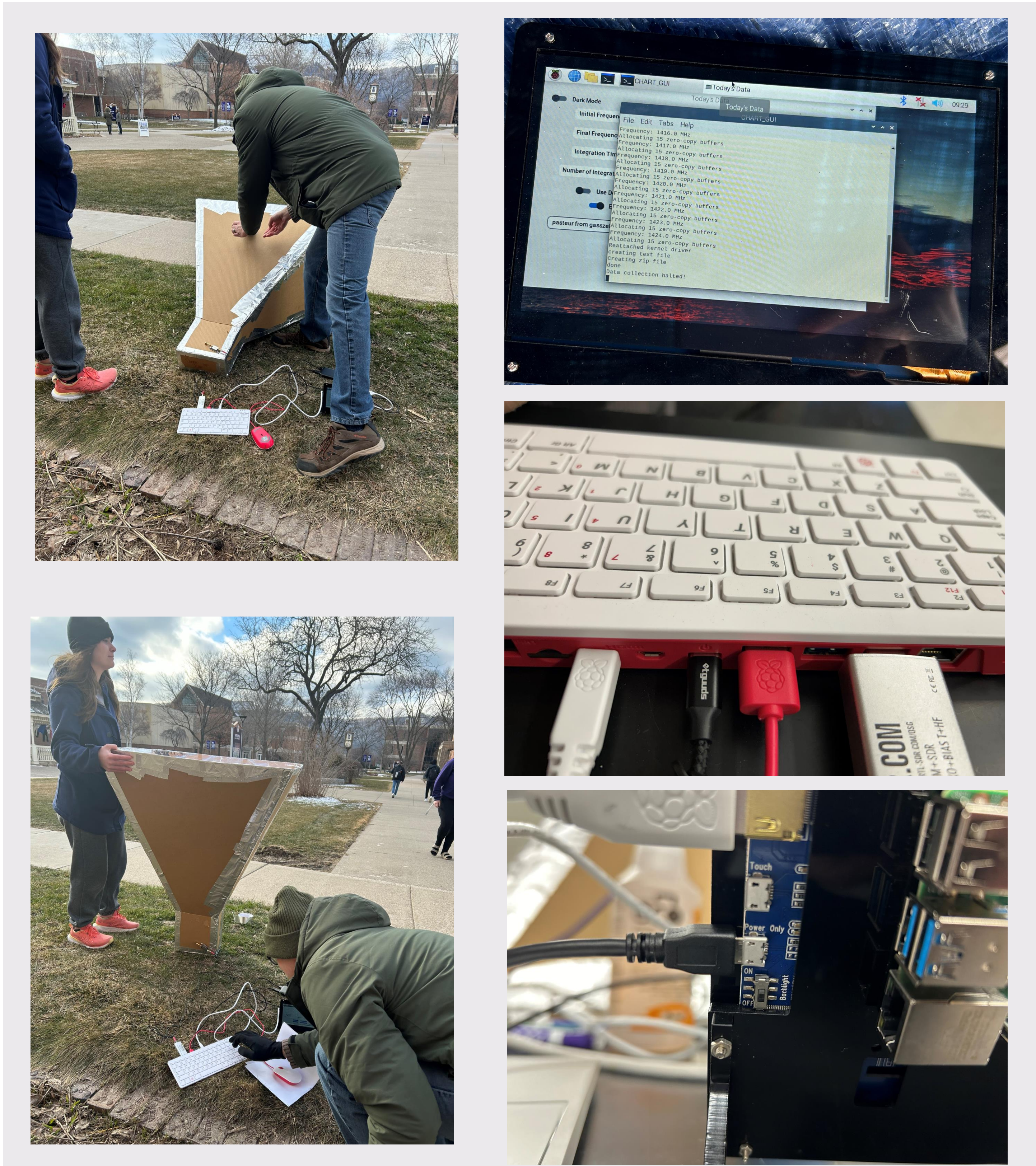
Introduction

I wanted to create protocols for some of the tasks needed to use the horn and collect data. Currently, there isn't any specific protocol on the website for people to follow, so there is no guarantee of correctly collecting the data or it being consistent. But, more importantly, those without any experience don't have the ability or knowledge to take data at all.



With the work that I have done, I will put it on the current website under the tutorials section. This will allow anyone using the website to work through the experiment and obtain consistent results. Also, this will give students a way to record their data while they are outside.

Distribution



Procedure

With the protocol created, there are sections for planning, packing, setting up the horn, recording the data, and taking notes in the field. There are two versions of these documents—online and printable—so they are easily accessible.

Testing

When it comes to testing the protocol, other students at WSU have tested it, as have various students from ASU. This allowed me to make any clarifications, fill in gaps, and prepare everything for the website.

If you are interested in learning more about CHART and the work that others have done on this project, there is a published website online that allows you to explore this information at <https://astrochart.github.io/index.html>, or you can reach out to me at sammy.schneider@go.winona.edu

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