Physics 460

Student: Clayton Hanson

Advisor: Nathan Moore

Term: Fall 2018

Credits: 1

Description: Clayton will be working on the small radio telescope that the department is working to refurbish. At present, the telescope is completely disassembled. This project will extend over several semesters. This fall, Clayton will concentrate on the two motors that control where in the sky the dish is aimed. The goad for this semester is to create an interface (Conceptual/mathematical and hopefully physical) that will map a given sky location to a pair of voltage signals that will drive the motors.

Goals:

1. How does the voltage/current provided to the motors control the motors motion?
2. How are the motors’ motions related to where the dish is physically pointed?
3. An Arduino (electronics) interface that will take physical location as input and drive the motors as output.

Assessment:

1. (75%) Clayton will need to attend regular meetings with Moore, make good progress on the project, and document his work.
2. (25%) Clayton will need to give a physics seminar in the late fall.

References:

1. MIT’s Haystack small radio telescope, <https://www.haystack.mit.edu/edu/undergrad/srt/index.html>
2. The Radio Sky and How to Observe it, Lashley
3. Physics 333 content