

# CSE 485 Semester Report

## Team 1, Friday 10:30am

Connor Alfheim

Ryan Dougherty

David Ganey

Dylan Lusi

Joseph North

Ben Roos

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Project sponsors: Dr. Judd Bowman and Dr. Danny Jacobs

Project description: A virtual observatory for the Murchison Widefield Array radio telescope.

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# 1 Executive Summary

## 2 Introduction

### a Project description

This semester, we produced a Web site that functions as a data browser for the MWA telescope’s observations. It allows a user to log in with their account and select a date range using selectors at the top of the page and see a list of telescope observations that happened in that range (or scheduled observations that will happen, if the range extends into the future). Specifically, the user can see the observation ID (the unique identifier for the observation in the system), the observation name, and who scheduled the observation. Additionally, the user can see a graph that shows the status of the telescope’s data pipeline over that date range. This graph shows the total observation hours scheduled for the telescope versus how many hours have actually been observed, and how many hours’ worth of observation data have been transferred from the telescope to databases at MIT.

### b Purpose of project

The motivation for this project was to make improvements upon the existing site, which lacked some key features the MWA researchers really wanted. They wanted a site that would allow them to monitor the status of the telescope in real time, annotate and share data sets,

create discussions about the data through forum-style discussions, and write custom queries that allow them to see the data they want, all on an intuitive Web platform. Ultimately, the goal for this project was to build a more dynamic, collaborative, and customizable site.

## **3 Scope**

### **a Original Definition**

### **b Change of scope and reason for change**

## **4 User Overview**

### **a Use case diagram**

### **b Description of actors**

### **c Use cases/user stories**

## **5 Project Plan**

### **a First semester**

### **b Second Semester**

## **6 Development Approach**

## **7 Design Overview and Decisions**

## **8 Technology and Tools**

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## **9 Preliminary results**

## **10 Problems and risks**

## **11 Summary of Tasks**

### **a Connor Alfheim**

#### **i Team Presentation**

#### **ii Report**

#### **iii Product**

#### **iv Initialization Document**

#### **v Team Management**

### **b Ryan Dougherty**

#### **i Team Presentation**

#### **ii Report**

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- iii Product
- iv Initialization Document
- v Team Management

## c David Ganey

- i Team Presentation
- ii Report
- iii Product
- iv Initialization Document
- v Team Management

## d Dylan Lusi

- i Team Presentation
- ii Report
- iii Product
- iv Initialization Document
- v Team Management

## e Joseph North

- i Team Presentation
- ii Report
- iii Product
- iv Initialization Document
- v Team Management

## f Ben Roos

- i Team Presentation
- ii Report

- iii Product
- iv Initialization Document
- v Team Management

## 12 Conclusions

- a Success So Far
- b Lessons Learned
- c Future Work