Project Plan

Plan

This project builds upon work already carried out over the summer period. An IDL program was written over summer which built the foundations for this project. The IDL program written over summer was a prototype IDL program for finding the boundaries of a sunspot. This project will build upon the IDL program using a number of algorithms and methods to improve and expand on the summer work.

Below is a table with a list of milestones and dates of when they are to be completed along with a brief description of what the job entails. A risk assessment will be submitted separately.

To Do	Description	By When
IDL program boundary algorithm	Make sure IDL program is detecting boundaries with satisfactory accuracy eliminating false identities.	End of Week 1
Download one complete data set for a sunspot	Download complete data set for one sunspot on Holly.	Midweek Week 2
Plan another IDL program for uncurling the sunspots	Research and implement a method to uncurl the sunspots to provide further evidence to back up results.	End Week 2
Write uncurling sunspot method into existing program	Add the new method into the previous code to allow for two different methods to be able to compare the two methods.	Midweek Week 3
Download another data set for a sunspot whilst working on the first data set	Start analysing the first data set using the IDL program and download another data set whilst this is occurring.	End of Week 3
Plan the construction of the wavelet analysis IDL program	Prepare all the foundations for the wavelet analysis IDL program such as deriving the maths and constructing the variables.	End of Week 4
Write the wavelet analysis IDL program	Write the code for the wavelet analysis program making sure it compiles and runs without any errors.	End of Week 5
Analysing data using wavelet analysis	Once the program has been compiled, use the already analysed data and perform wavelet analysis.	End of Week 6
Prepare introduction, theory and background for the main report	Start writing the introduction, theory and background of the main report whilst the data is being analysed.	End of Week 7
Prepare presentation	Start writing up presentation PowerPoint and making sure results are ready to be implemented and presented.	End of Week 7

Analyse final output data and prepare it for implementation into report	Once the data has been analysed by Holly, prepare the graphs and data to look tidy ready for implementation into the final report.	End of Week 8
Write up method for experiment into report	Write the method section of the final report	End of Week 9
Implement results into final report	Import the results of the experiment into the final report and comment on what was found	End of Week 10
Finalise Final Report	Finish the report making sure all references are accounted for and all sections are complete.	End of Week 11
Download and analyse more sunspot data	Continue downloading and analysing sunspot data whilst Holly is idle.	Continuous

Resources

For this project, access to a computer with an IDL licence and an internet connection is required. Also access to the departments UNIX cluster (Holly) is required for downloading and storing the large amount of data for the sunspots and analysing them. The only external resource required is access to NASA's Solar Dynamics Observatory's data archive to download the sunspot data.