Project Initiation Document

TESS Red Giant asteroseismic predictions with Kepler data - TRG

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Date: 31/05/17

Version History

V0.1 - Document created - 31/05/17

V1.0 - Document circulated to board - XX/XX/XXXX

# Introduction

## Background/Case

TESS needs to select Red Giants with the highest probability of detecting oscillations, in order to get the most useful data from the mission. This method is a potentially quick and robust way of making a selection.

## Costs and funds

Time

## Benefits

This method will be applicable for TESS, PLATO, K2 and CoRoT. Predictions can be made for these missions with minimal extra work.

# Project Definition

## Scope

To make predictions for Red Giant stars as observed by TESS, using adjusted Kepler data. Find correlations between asteroseismic parameters and detection probability in TESS.

## Exclusions

Only using Kepler data

## Deliverables

Produce a polynomial which can estimate the detection probability of Red Giants in TESS, given a set of parameters.

## Constraints

main time constraint: Data will need to be selected and fitted to identify modes

## External dependencies

## Assumptions

1. TESS light curves can be accurately estimated from Kepler data. 2. Modes can be fitted correctly. 3. The detection test is a reliable tool

# Project Plan

## Initial project plan/Milestones

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Label** | **Description** | **Start** | **End** | **Actual End** |
| Get data | Get sets of Kepler data to test and run the code on | 31.05.17 | 10.07.17 |  |
| Make like TESS | Remove white noise, change length of data set, add TESS noise, correct for change in bandpass | 10.07.17 | 01.10.17 |  |
| Detection test | Run the detection test | 01.10.17 | 01.11.17 |  |
| Code to run it all | Put the pieces together | 01.11.17 | 01.12.17 |  |

## Contingency

# Organisational structure

## Team

|  |  |  |
| --- | --- | --- |
| **Level** | **Title** | **Person** |
| Board | Project Manager | Mat Schofield |
| Board | Executive | Bill Chaplin |
| Board |  | Guy Davies |
| Team |  | Tom North |
| Team |  | Dan Huber |
| Team |  |  |
| Contributor |  |  |

## Filing structure

Git

# Communication and stakeholders

## Communication methods

email & Git projects

## List of key stakeholders

|  |  |  |  |
| --- | --- | --- | --- |
| Stakeholder | Interest | Needs | Attitudes |
| Andrea Miglio | Potential application for PLATO | To make the method valid for PLATO | Positive |
| Tiago Campante | Follow up from his detection work | NA | Positive |
|  |  |  |  |
|  |  |  |  |

# Reporting cycle

## Reporting periods

The first day of each month

# Risk assessment

## Risk log