

## 1 INTRODUCTION

### 1.1 Motivation

The fundamental parameters of stars, such as their effective temperatures and metallicities, dictate their observed apparent properties, such as their luminosities and spectra. Hence, a full accounting of the effects of these parameters, and any physical stellar processes that impact on them, directly or indirectly, must be sought.

### 1.2 Thermohaline mixing

The first months of the project were dedicated to the study of thermohaline mixing. This effect was proposed by \*\*\*\*Ulrich (1972) and \*\*\*\*Kippenhahn et al. (1982) to explain anomalous chemical abundances at the surface of mature, \*\*\*\*low-mass red giant branch (RGB) stars. Specifically, the anomalies consist of an over-abundance of  $^{12}\text{C}$ ,  $^{16}\text{O}$  and  $^{14}\text{N}$ , together with a paucity of  $^7\text{Li}$  and  $^1\text{H}$ , in the stellar spectra. Taken together, these particular changes in these particular species indicate an interaction between the RGB fusion shell and the surface, i.e. a mixing effect, be

### 1.3 Differential extinction

## 2 CURRENT STATE OF THE FIELD

### 2.1 Thermohaline mixing

### 2.2 Differential extinction

## 3 RESULTS SO FAR

## 4 DISCUSSION

## 5 FURTHER INTENDED WORK