

Título/Title:

Determination of sulphur abundances in the HARPS-GTO planet search sample

Orientador/Supervisor:

Elisa Delgado Mena (IA-Porto) elisa.delgado@astro.up.pt

Descrição/Description:

This project consists in deriving sulphur (S) abundances in a sample of ~1000 stars (150 of them having planets) by using spectral synthesis with the spectral code MOOG. The student will have to develop a simple code that compares synthetic and observed spectra to determine the best fit (with chi2 method or other) in the two small wavelength regions where there are sulphur atomic lines. Once the abundances are derived we will be able to study the Galactic Chemical composition of this element, compare to other elements with similar nucleosynthesis and with models, compare the evolution with age and finally see if there are any differences between stars with and without planets. Furthermore, this element is also useful to help constraining planetary interiors (apart from other more important elements such as Mg, Si, C, O and Fe).

Requisitos/Requirements:

The candidate should have some experience in basic programming.