Título/Title:

Explorando os dados científicos provenientes do satélite TESS da NASA

Orientador/Supervisor:

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Local do Estágio/Host Place:

IA-Porto

Descrição/Description:

The Transiting Exoplanet Survey Satellite (TESS) is a NASA space mission, launched in April 2018, that will perform an all-sky survey for planets transiting bright nearby stars. Furthermore, TESS's excellent photometric precision will enable asteroseismology, the detailed study of stars by the observation of their natural, resonant oscillations. Asteroseismology is proving to be particularly relevant for the study of solar-type stars (i.e., low-mass, main-sequence stars and cool subgiants), in great part due to the exquisite photometric data made available by NASA's Kepler space telescope and, more recently, by the repurposed K2 mission. In extending the legacy of Kepler/K2, the main goal of this project will be to perform an ensemble asteroseismic study of bright solar-type stars that reside in the solar neighborhood, making use of data collected by TESS. To that end, we propose an end-to-end project that will provide the student with skills in asteroseismic data analysis and stellar modeling techniques. The implications of this project are far-reaching. The proposed research will provide a well characterized sample of benchmark solar-type stars to be used in studies of exoplanetary systems and of the chemical evolution of the solar neighborhood, the latter of which will impact on Galactic archaeology studies.

Requisitos/Requirements:

Some previous knowledge of computer programming is required, preferably in Python.

Tipo/Type:

This is a closed project. Only Mariana Pouseiro Júlio and Bárbara Maria Teixeira Basto Soares can apply.