

Título/Title:

The phases of exoplanets

Área/Area:

Exoplanets

Orientador/Supervisor:

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Local do Estágio/Host Place:

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Descrição/Description:

The different phases of the moon are due to changes in the configuration of the Moon, the Sun and Earth. Whether the Moon is full, new, in its first or its last quarter depends on which fraction of the Moon is visible from Earth. More specifically, it depends on the visible fraction of the Moon which is also illuminated by the Sun. The side of the Moon that is illuminated by the Sun is called its dayside. As the Moon, extra-solar planets have phases. During their orbital motion around their host star, the visible fraction of their dayside varies. These variations, called phase-curve, can be detected by space telescopes like the NASA-Kepler telescope. The shape and amplitude of the phase-curve can tell us about the reflective properties and mass of exoplanets.

The objective of this project is to modify an already existing code to allow the detection of this effect. Then the student will apply it to data collected with the NASA-Kepler telescope to infer the mass and reflective properties of an exoplanet.

Requisitos/Requirements:

The project does not require prior knowledge of astronomy and/or exoplanets. The candidate is expected to have working knowledge of the computer programming language Python, since the code he will have to modify is written in this language.