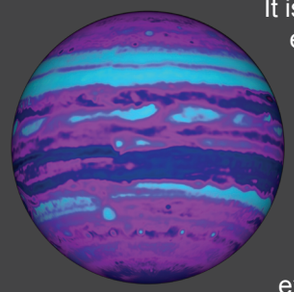
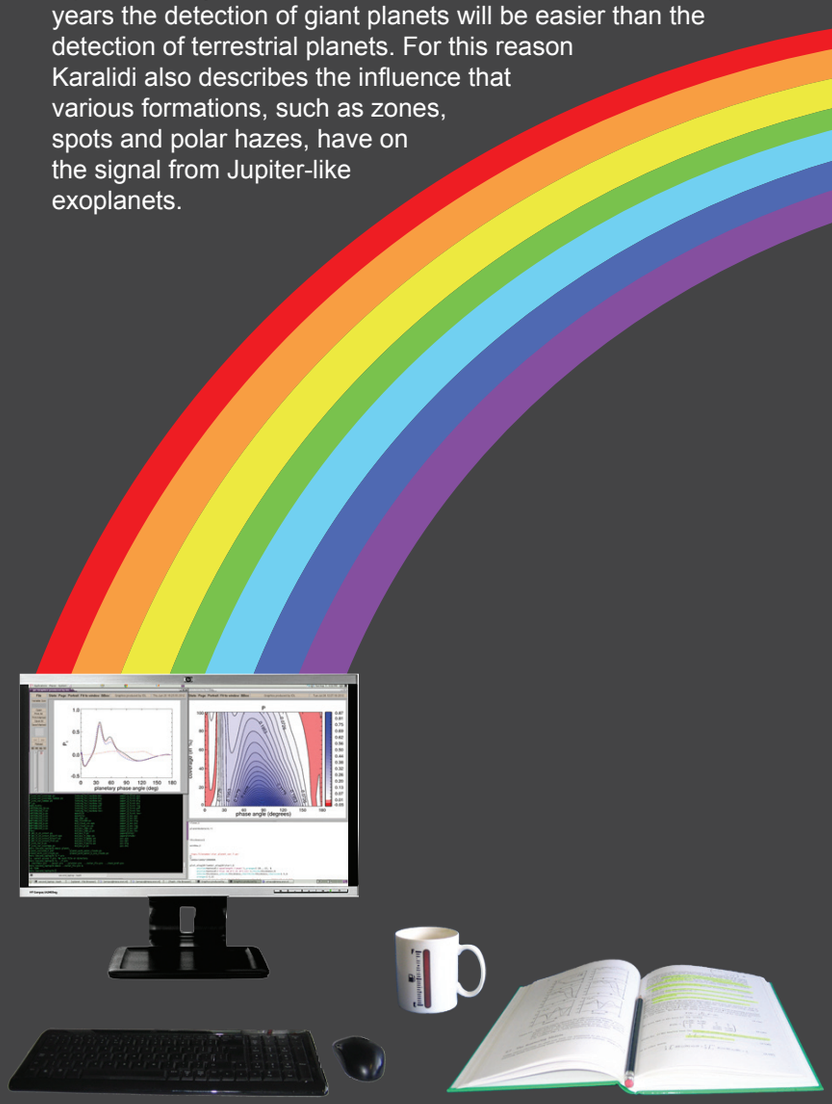


It is less than 20 years since astronomers discovered the first exoplanet orbiting a Sun-like star. In this short period more than 770 confirmed exoplanets have been detected. With so many exoplanets the next step is their characterization. What is their atmosphere made of? Does it contain water clouds? Is there water on the planetary surface? Could there be life on these planets? To answer all these questions good and reliable models are necessary for interpreting the signal we observe from the detected exoplanets.

In this thesis, Karalidi works with a numerical code to model the flux and polarization properties of starlight reflected by exoplanets with various forms of inhomogeneities. She shows that the rainbow, created by water clouds in the planetary atmosphere, is a powerful ally in our search for water clouds on other planets. In the upcoming years the detection of giant planets will be easier than the detection of terrestrial planets. For this reason Karalidi also describes the influence that various formations, such as zones, spots and polar hazes, have on the signal from Jupiter-like exoplanets.



ISBN 978-94-6108-416-3

T. Karalidi

Broadband polarimetry of exoplanets - modelling signals of surfaces, hazes and clouds

Broadband polarimetry of exoplanets

modelling signals of surfaces, hazes and clouds

THEODORA KARALIDI