

May, Erin

Atmospheres of Circumbinary Planets

Circumbinary planets are unique from planets orbiting a single star due to the complex variation in irradiation that is received by the circumbinary planet. At least 9 such planets have been discovered by the Kepler mission, each with its own unique pattern of irradiation due to differences in the stellar and planetary orbits. This variation in irradiation may play an important role in shaping the temperature structures and circulation patterns in the atmospheres of circumbinary planets. Using models of varying complexity, we study the atmospheres of several circumbinary planets, covering a range of system parameters, in order to better understand how complex variations in irradiation may affect the planet's atmosphere. Results for the chosen systems are presented here.