

Are distant exoplanets inflated?

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Abstract

Close-in exoplanets seem to be inflated compared to standard models. The question is whether this inflation is related to the short star-planet distance. After a brief review of the possible inflation mechanisms, I investigate, using CoRoT and Kepler data, whether this inflation holds for planets more distant to their parent star.

1. Introduction

Close-in exoplanets seem to be inflated compared to standard models. The question is whether this inflation is related to the short star-planet distance. It has been proposed that this inflation can be due to tidal effects induced by the parent star or to the heating of the atmosphere. In both cases the inflation should disappear for planets more distant from their parent star. By building a planet radius versus semi-major axis correlation diagramme, I show that this inflation is effectively correlated to the star-planet distance (see Fig 1).. Indeed, for planets with a large radius, corresponding to massive planets, the scatter in planet radius, based on CoRoT and Kepler data, has almost disappeared above 0.1 AU.

2. Figures

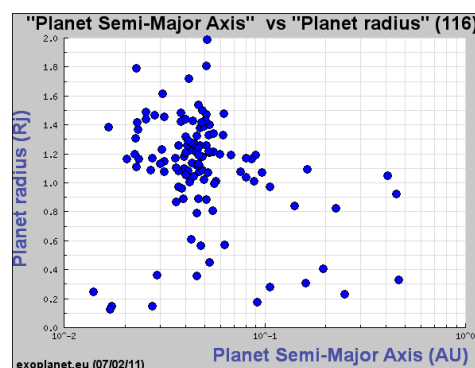


Figure 1: Planet radius versus semi-major axis.