
The peculiar transit signature of CoRoT-29b

Juan Cabrera*¹ and Cest Corot Exoplanet Science Team²

¹German Aerospace Center (DLR) – Institute of Planetology - DLR Rutherfordstr. 2 12489 Berlin,
Germany

²Centre National d'Etudes Spatiales (CNES) – CNES – 18, Av. Edouard Belin, 31055 Toulouse, France

Abstract

We present here the characterization of the planetary system CoRoT-29. CoRoT observations show a transiting planet with a very peculiar asymmetric light curve. We will discuss the interpretation of this unusual transit signature and the consequences that it has for the planet, for the star, and for the origin and evolution of this singular planetary system. The constraints from the light curve and from the ground-based follow-up effort suggest that CoRoT-29 was a multiple system in the past. At some point, the inner planet was engulfed by the star, increasing its angular momentum, while the orbit of the present transiting planet was later circularized until it reached its present configuration. CoRoT-29 is an excellent system to test the theories explaining the origin of hot-Jupiters, whose diversity makes their origin still a matter of debate.

*Speaker