The peculiar transit signature of CoRoT-29b

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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.

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