



Could CoRoT-7b a remnant of an evaporated gas or ice giant?

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We investigate the thermal mass loss of the CoRoT discovery CoRoT-7b (4-7 earth masses) using an energy limited approach with proper heating efficiencies considering Roche-Lobe effects and exosphere formation times. We place hypothetical exoplanets with characteristics of Jupiter, Saturn, Uranus, and Neptune at the orbital distance of CoRoT-7b (0.017AU) and study the influence of the mean planetary density on the thermal mass loss. We find that if we let evolve a hydrogen-rich Jupiter or Saturn class object, these can not loose such an amount of mass that CoRoT-7b would result in a rocky residue. Even if we start with a hydrogen-rich hot Uranus or Neptune type object, the remaining mass after two Gyr (estimated age of the host star) is not comparable to the mass of CoRoT-7b. If we assume unrealistic but possible starting parameters for a hydrogen-rich low density Sub-Neptune class object, a remaining mass of CoRoT-7b would be possible. Anyway, the most likely scenario is that of CoRoT-7b starting as a rocky planet possibly loosing a thin hydrogen atmosphere.