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Stellar XUV radiation impact on atmospheric mass loss from close-in gas giants

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Close-in gas giants are subject to strong atmospheric heating due to absorption of stellar XUV radiation. This leads to the development of expanded atmospheres and hydrodynamic blow off conditions which can lead to high atmospheric loss rates from these planets. Additionally, Roche lobe effects can dramatically enhance the atmospheric erosion for exoplanets orbiting at distances < 0.02 AU. Since astrophysical observations of young stars indicate much larger XUV fluxes than stars with the age of our present Sun, we present results of hydrodynamic modelling of these atmospheres for changing XUV fluxes ranging from 0.1 to 4 Gyrs. We discuss the effects of these heating process for different stars with known close-in gas giants like HD209458, HD189733, HD179949 and others.