Geophysical Research Abstracts
Vol. 21, EGU2019-17616, 2019
EGU General Assembly 2019

Uranus and Neptune thermal evolution

Ludwig Scheibe, Nadine Nettelmann, and Ronald Redmer
Institute of Physics, University of Rostock, Rostock, Germany

Uranus and Neptune have highly different intrinsic heat fluxes. This is surprising since they share a large number of very similar observed values such as mean density, surface temperature and atmospheric composition. Here, we present new Uranus and Neptune evolution calculations for a wide range of varied input parameters such as water equation of state, albedo or solar irradiation and show that those parameters can have considerable influence on the cooling behavior. We also discuss the influence of a possible radiative boundary layer between the H/He-rich outer envelope and the ice rich inner envelop on the resulting present heat flux.