



Thermal and magnetic evolution of exoplanets

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The last years have shown that the universe hosts diversely structured planets with variable planetary masses. In our current study we focus on the question how planetary mass and the core to planetary mass ratio influence the thermal evolution of exoplanets. Here we use parameterized 1D thermal evolution models, assuming a temperature and pressure dependent viscosity in the mantle. We investigate the thermal evolution of planets either in the plate tectonic or in the stagnant lid regime with varying sizes between 0.1 and 10 earth masses. We also consider the possibility for these planets to generate a magnetic field. We investigate for instance how the planet's thermal evolution does depend on the initial thermal conditions for large planets when including pressure dependence into the viscosity laws.