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Numerical Modelling of Planetary Dynamos SABINE STANLEY, Department of Physics, University of Toronto — Magnetic field observations by spacecraft missions have provided vital information on planetary dynamos. The four giant planets as well as Earth, Mercury and Ganymede have observable magnetic fields generated by active dynamos. In contrast, Moon and Mars only have remanent crustal fields from dynamo action in their early histories. The study of planetary dynamos has recently expanded to include new bodies. First, paleomagnetic records of meteorites hint that early solar system planetesimals had dynamo generated fields. Second, the diversity of recently discovered extrasolar planets has initiated a study of new planetary interior conditions and what these mean for the feasibility and morphology of dynamos in these bodies. Here we review numerical dynamo simulations of planetary bodies. We focus on planets other than Earth, however will appeal to Earth in a comparative sense. We will concentrate on models that have been tailored for specific planets or have addressed non-Earth-like magnetic field characteristics of planetary bodies.

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