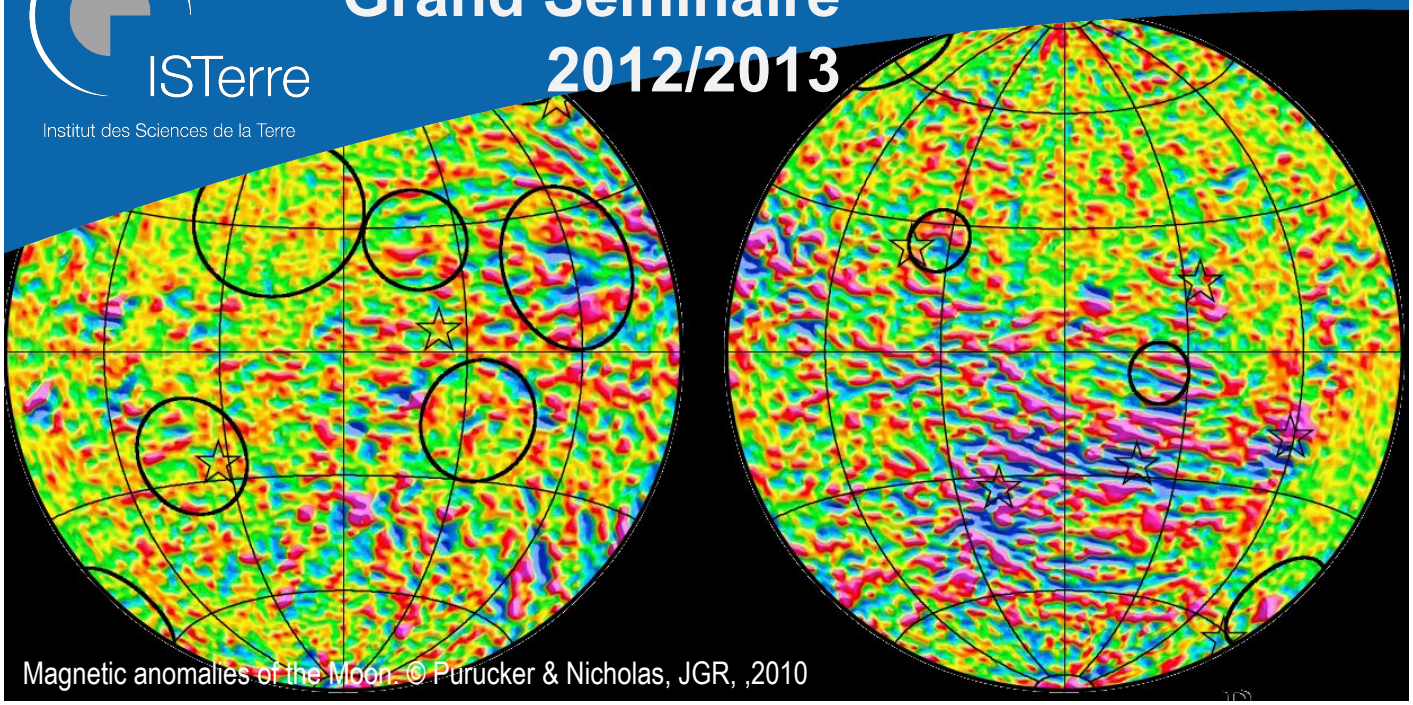
ISTerre
Institut des Sciences de la Terre

Grand Séminaire 2012/2013



Magnetic anomalies of the Moon, © Purucker & Nicholas, JGR, ,2010

Magnetic 'fossils' from Mercury and the other terrestrial planets and moons

Michael PURUCKER NASA Goddard Space Flight Center, USA

We determine minimum and maximum limits for the presence of a fossil remanent magnetization in Mercury's crust, based on an approach which first models and removes fields from Mercury's offset dipole, it's magnetopause, cross-tail current, and cusp, and near-planet fields of external origin but unknown provenance. The minimum field of crustal origin is 11 nT at 300 km altitude, and it is spatially coincident with, or closely associated with, the northern rise within the Northern volcanic province. This magnetic field is deduced from both radial and theta components of the observation, and the two components are consistent. The field magnitude, and the deduced magnetization, is significantly smaller than that measured at Earth, but larger than fields measured at Earth's moon. The direction of the remanent field is in the opposite sense to the present main field direction, implying field reversals in the past.

Jeudi 27 septembre 2012 à 11h

Salle de conférences d'ISTerre

OSUG-C, 1381 rue de la piscine, Campus Universitaire
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