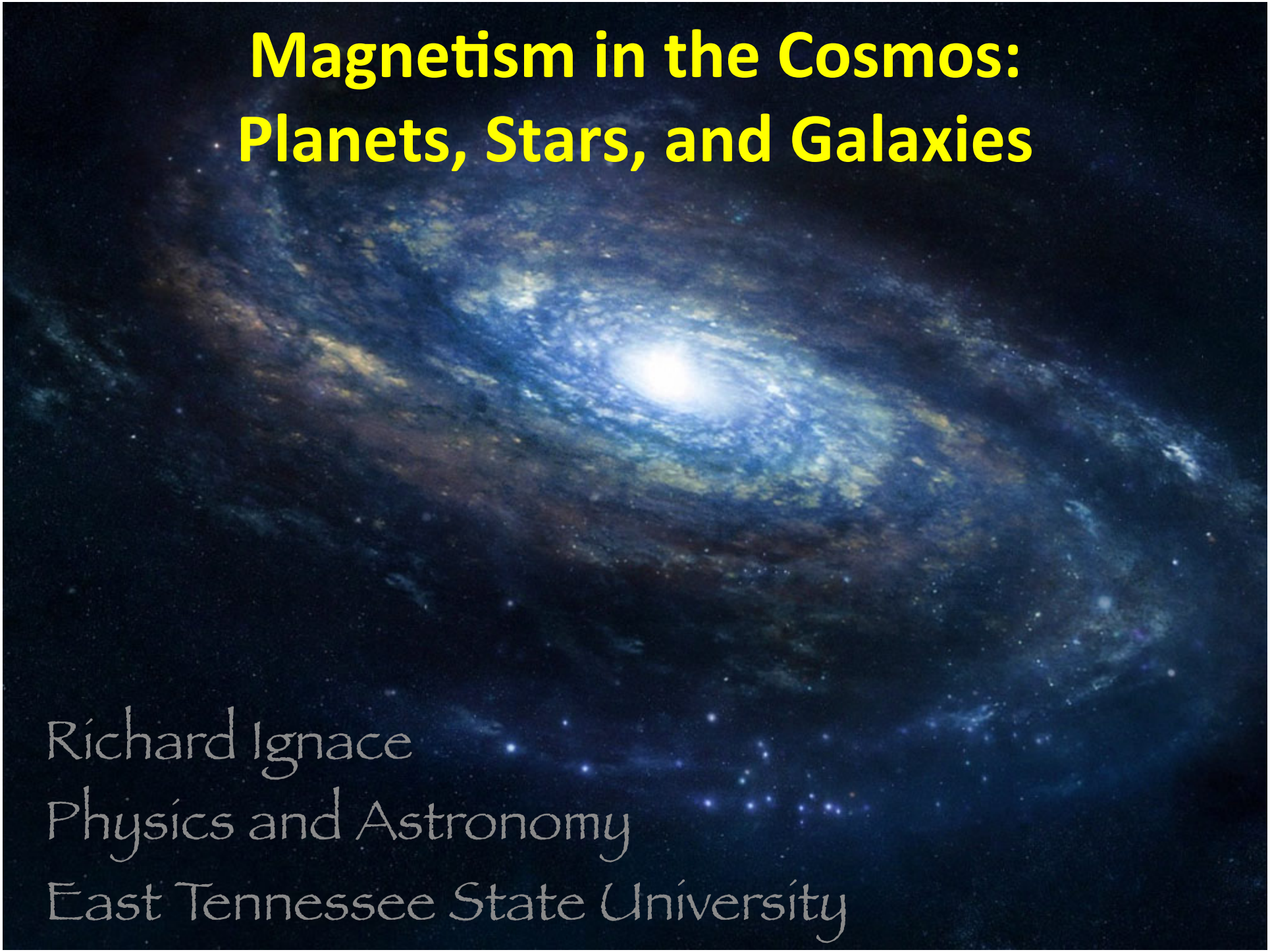
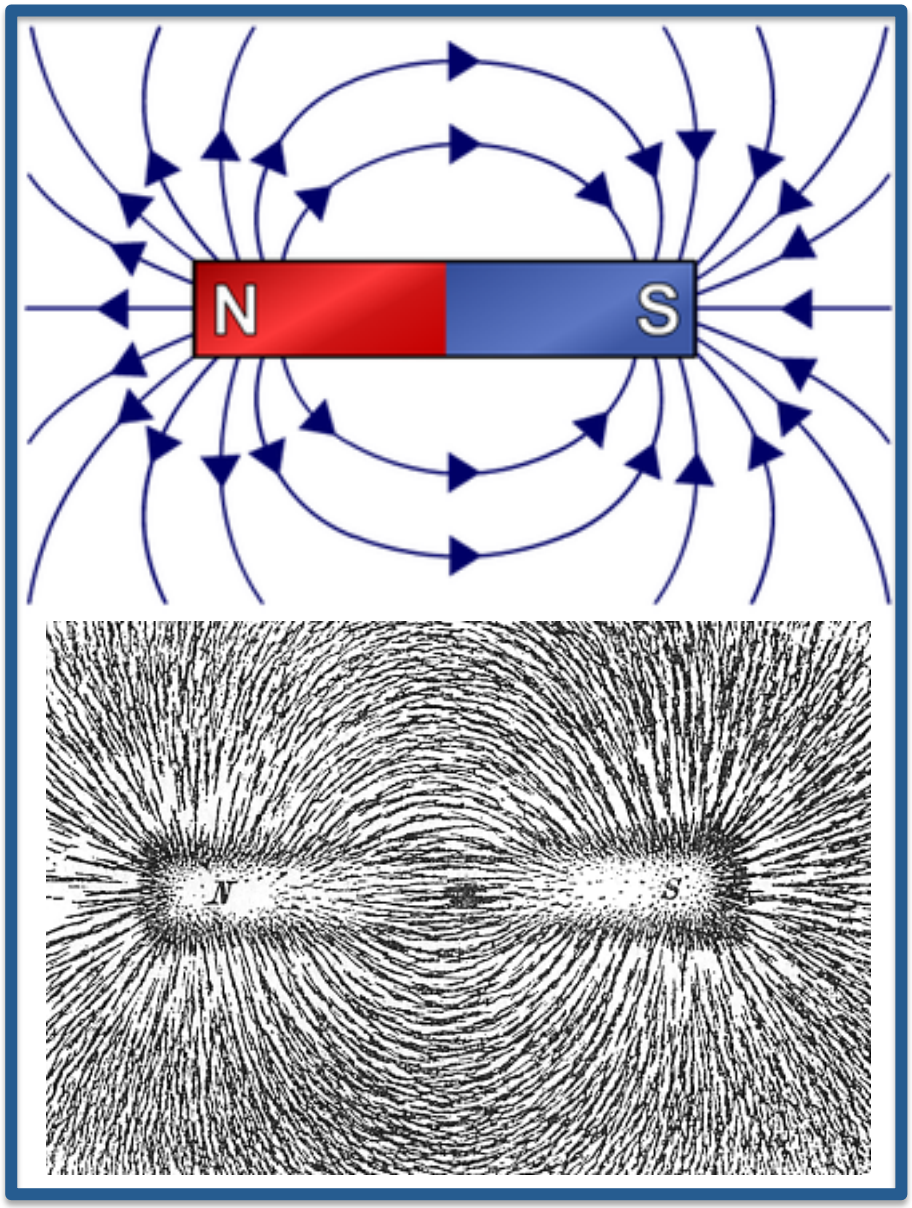
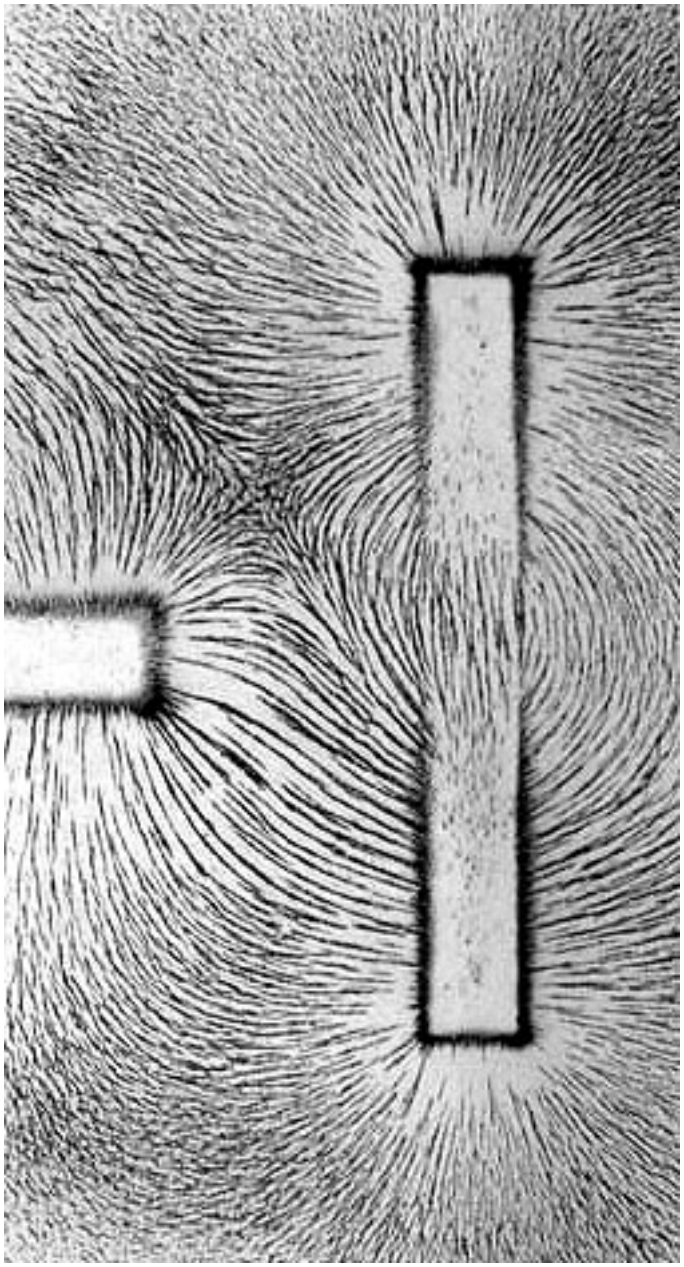


Magnetism in the Cosmos: Planets, Stars, and Galaxies

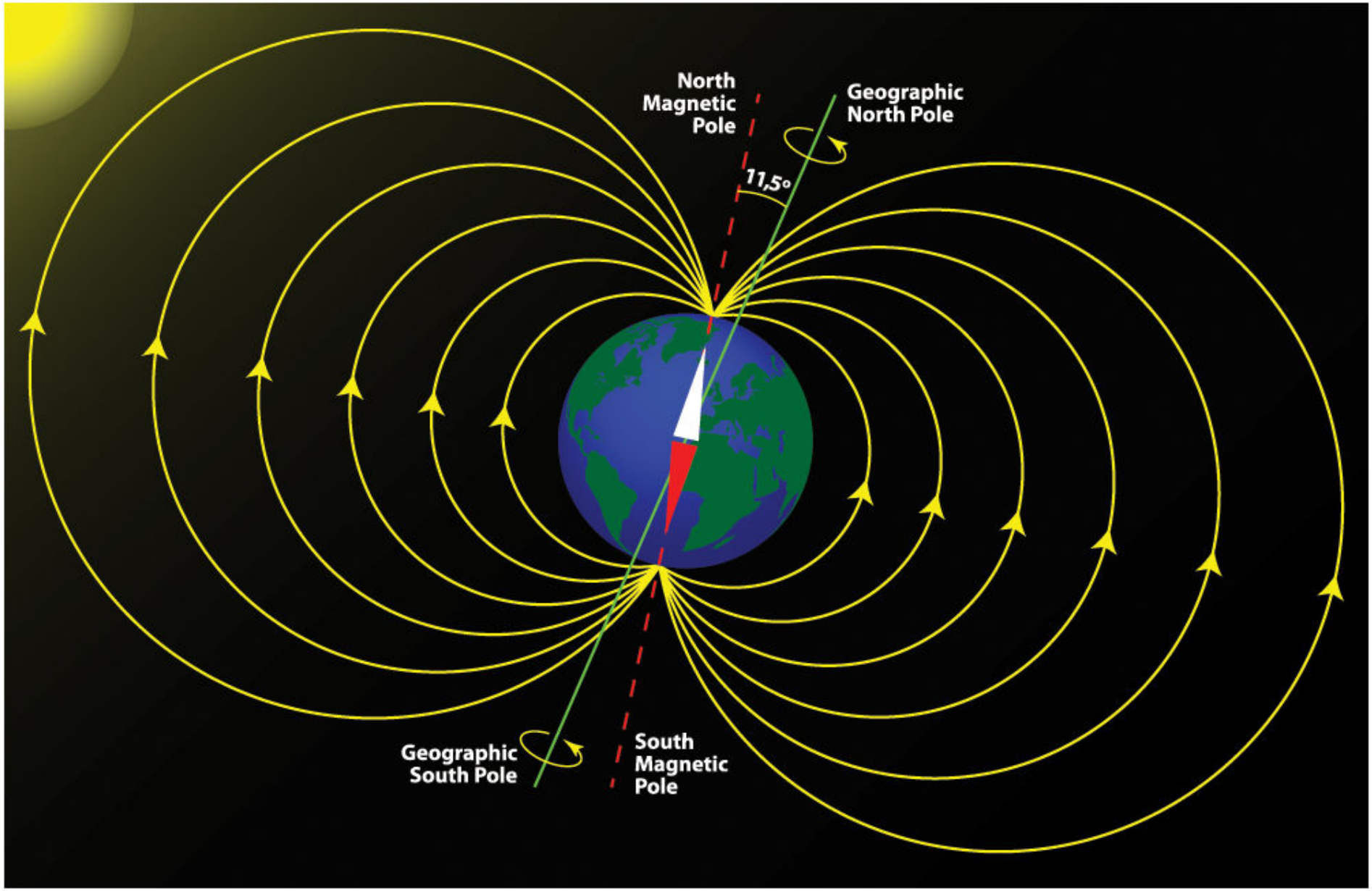
Richard Ignace
Physics and Astronomy
East Tennessee State University

Magnetism

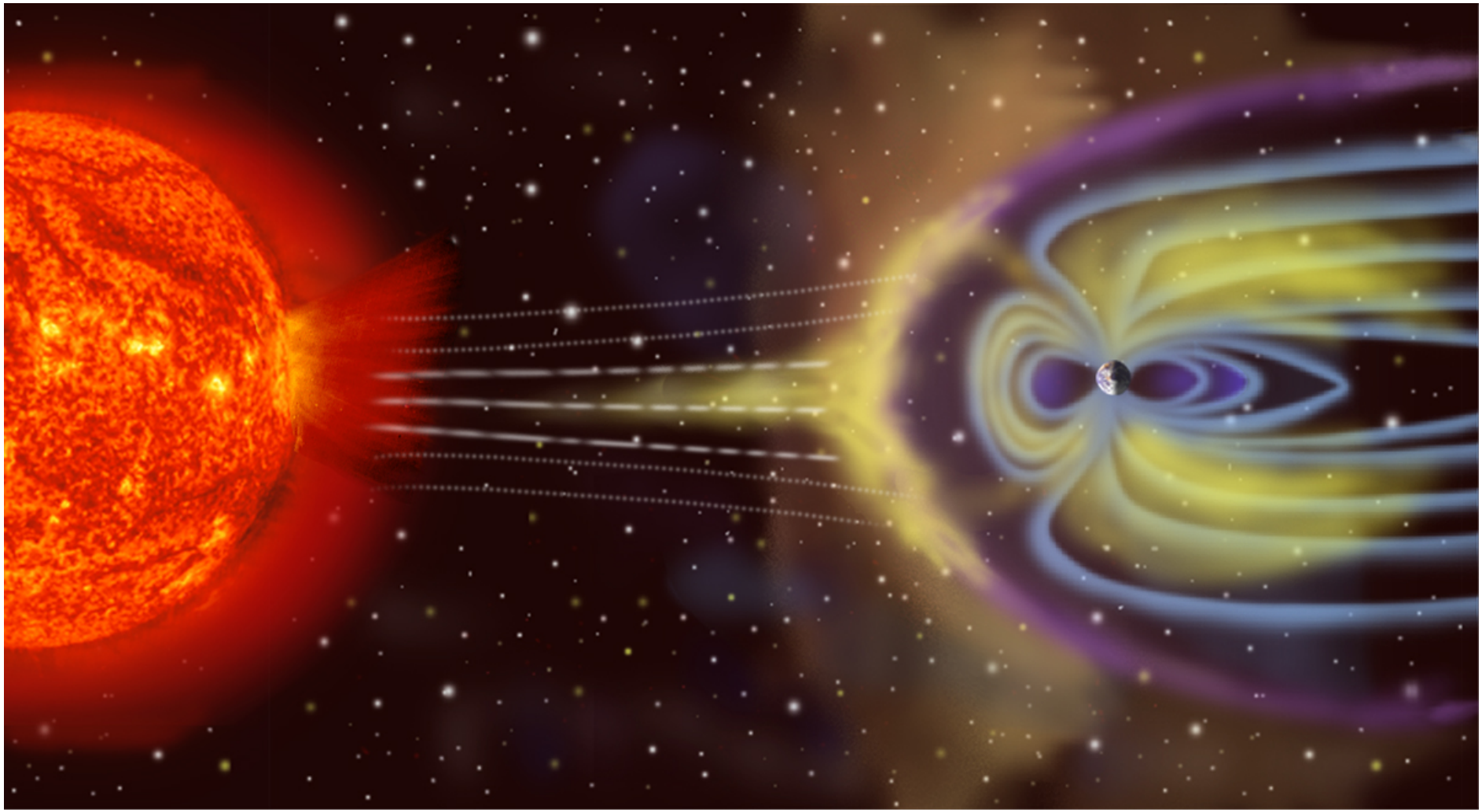




Planetary Magnetism

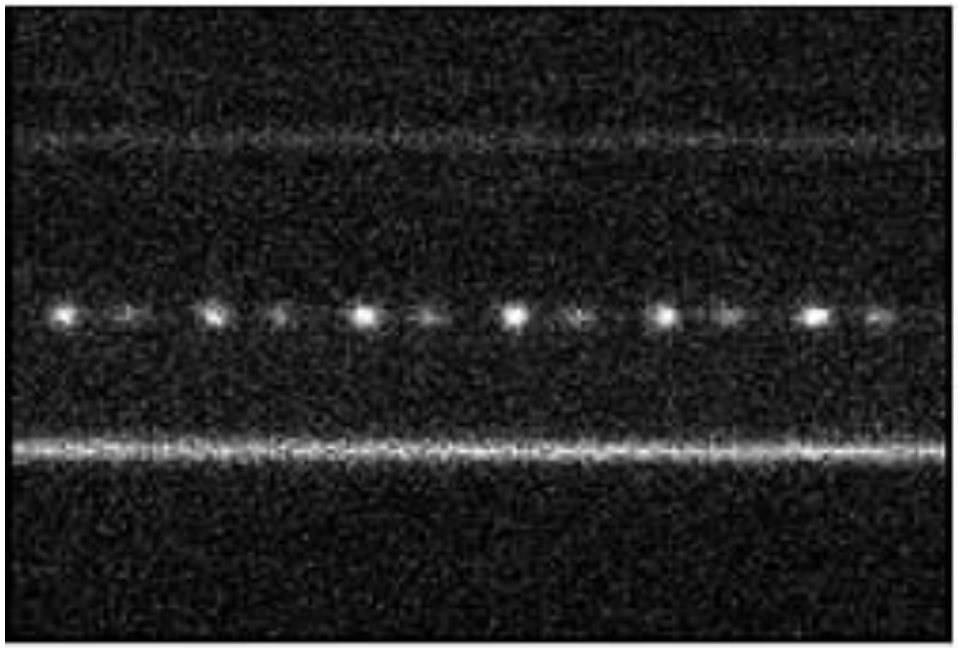


Planetary Magnetospheres

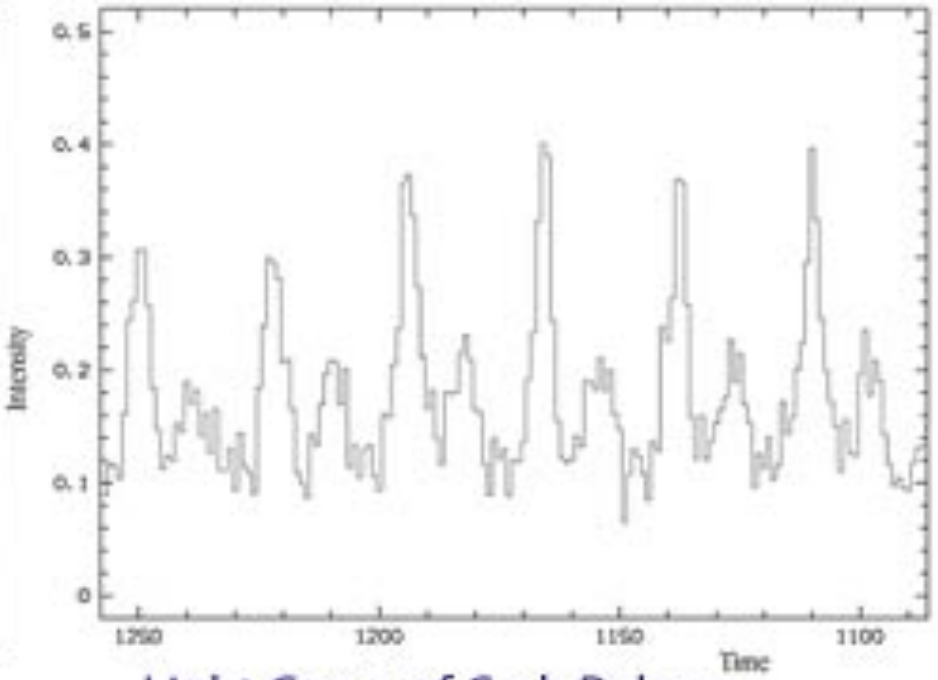


Pulsars:

Rapidly rotating neutron stars



Time Sequence of Crab Pulsar

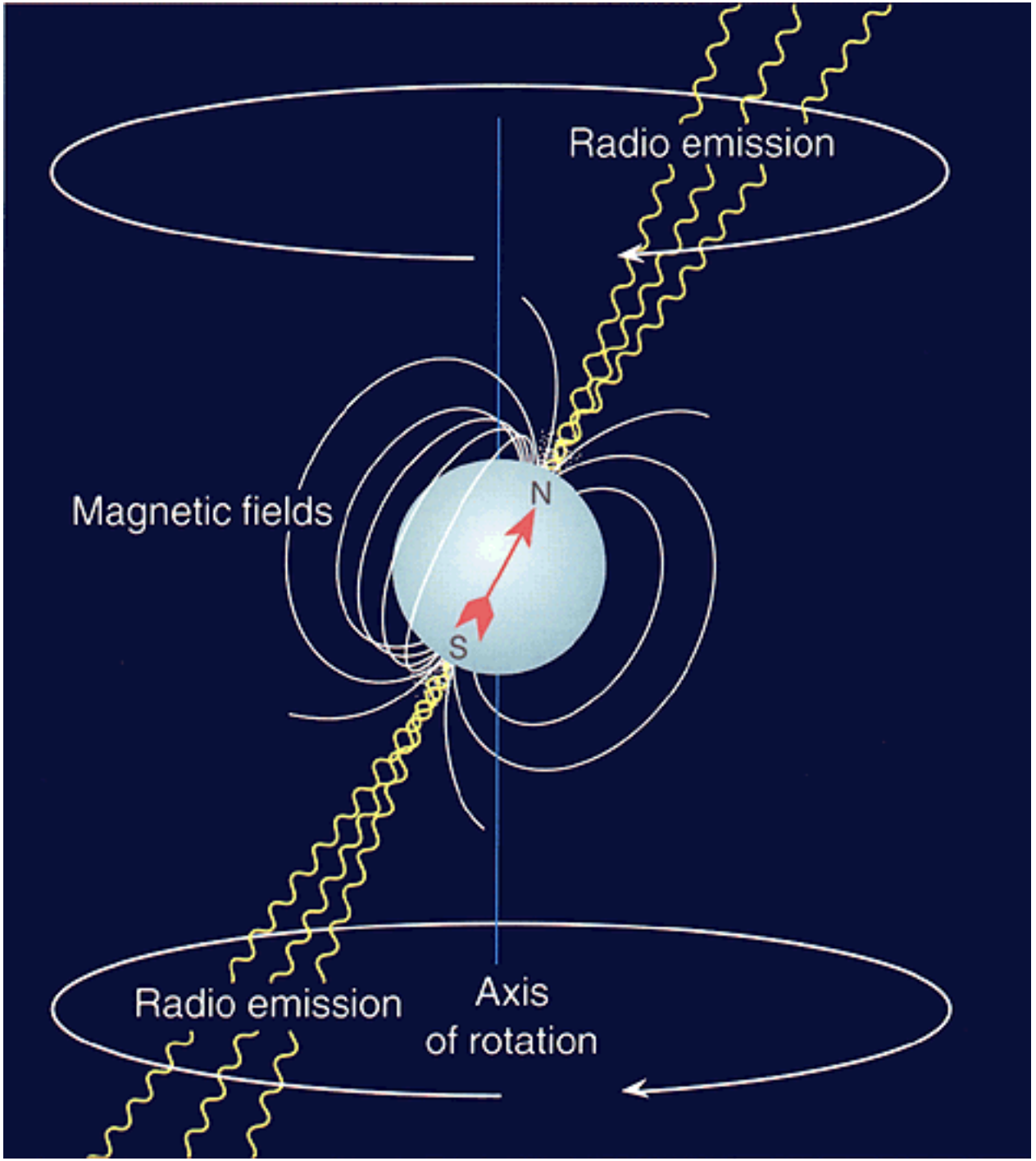


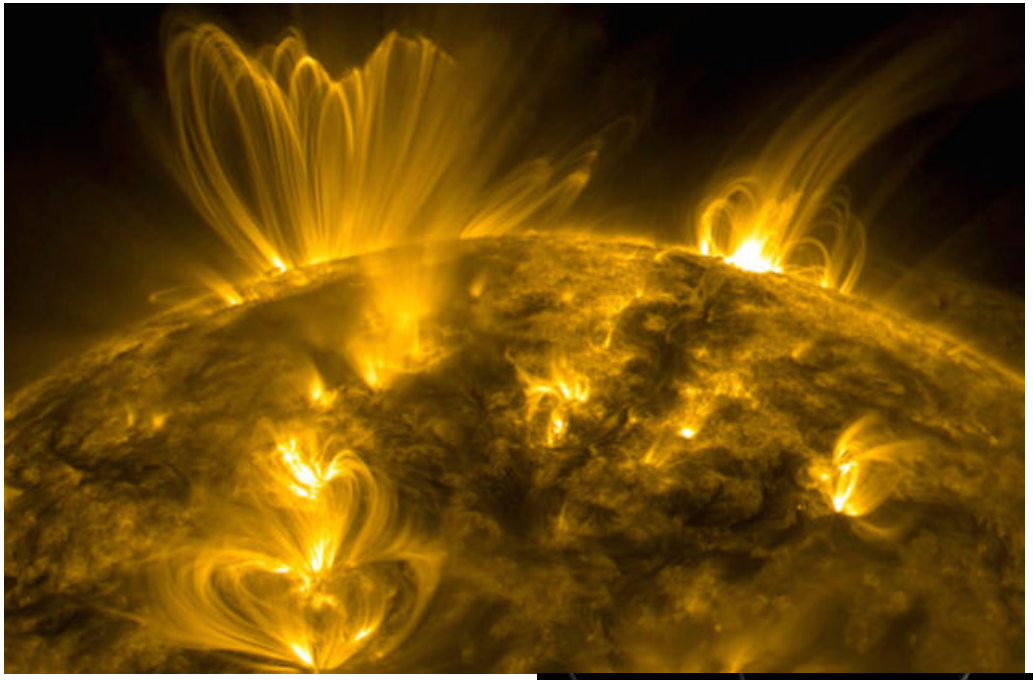
Light Curve of Crab Pulsar

(VLT KUEYEN + FORS2 + FIERA) © ESO

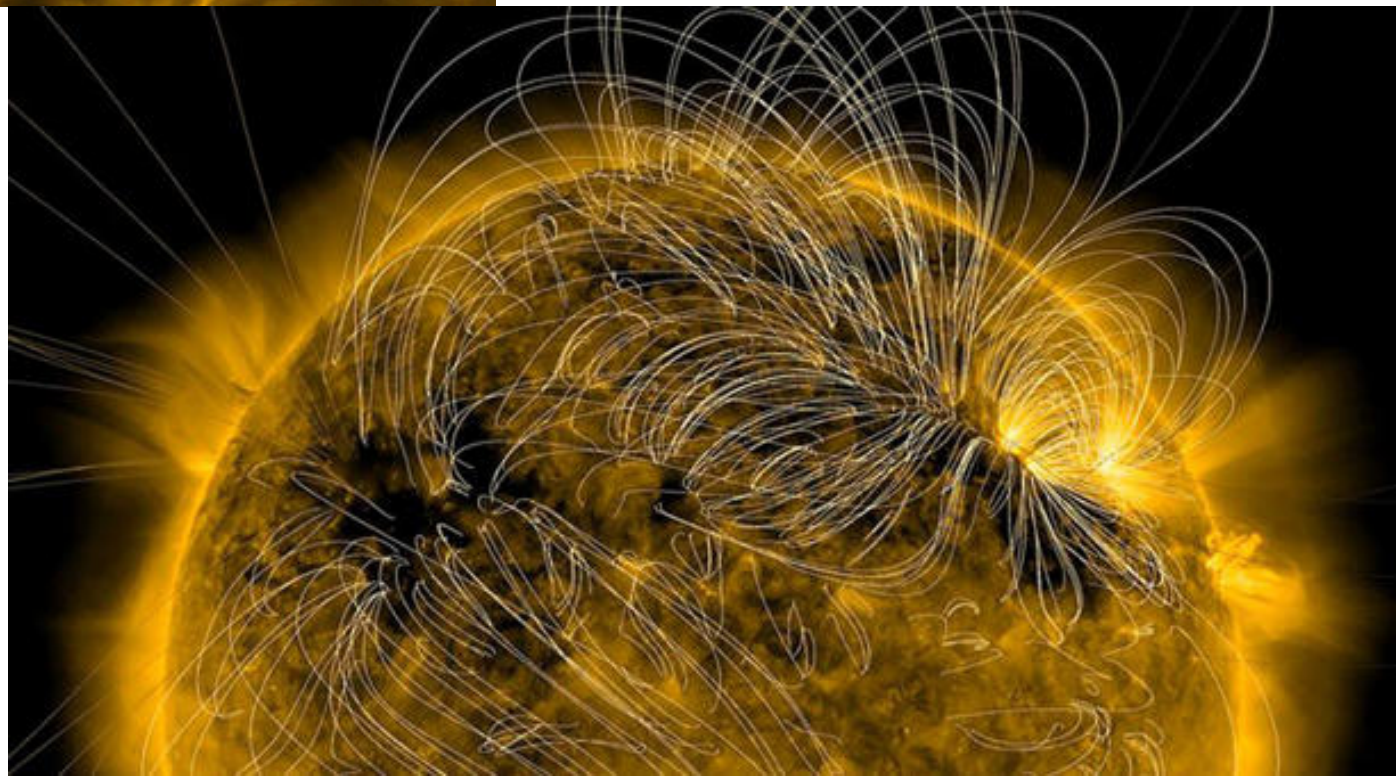
"Light House" Effect:

Strong magnetic fields lead to beaming of radiation along the magnetic axis, which is inclined to the spin axis.

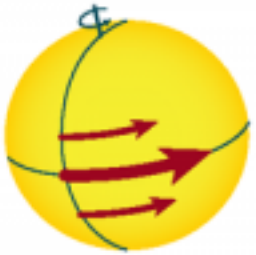




Solar Magnetism

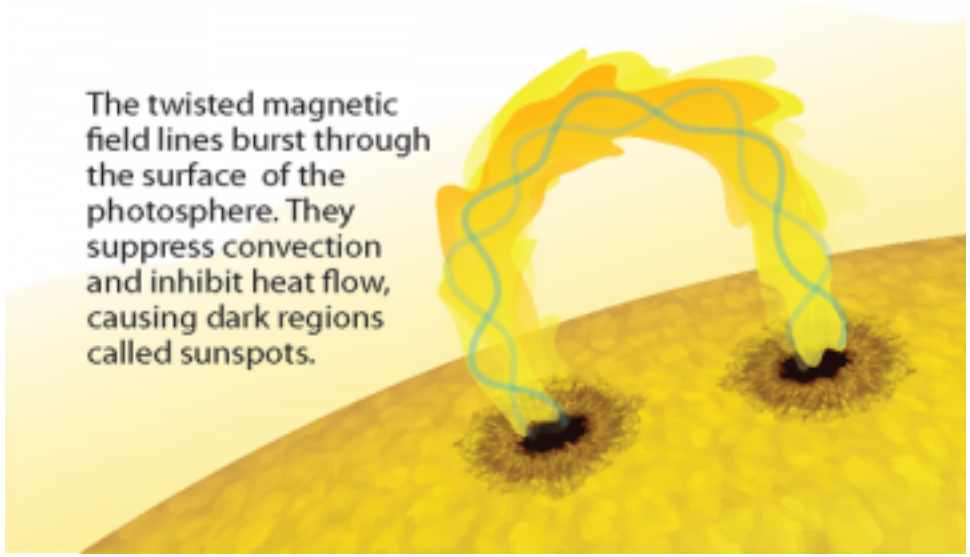


Magnetically Guided Plasma Columns

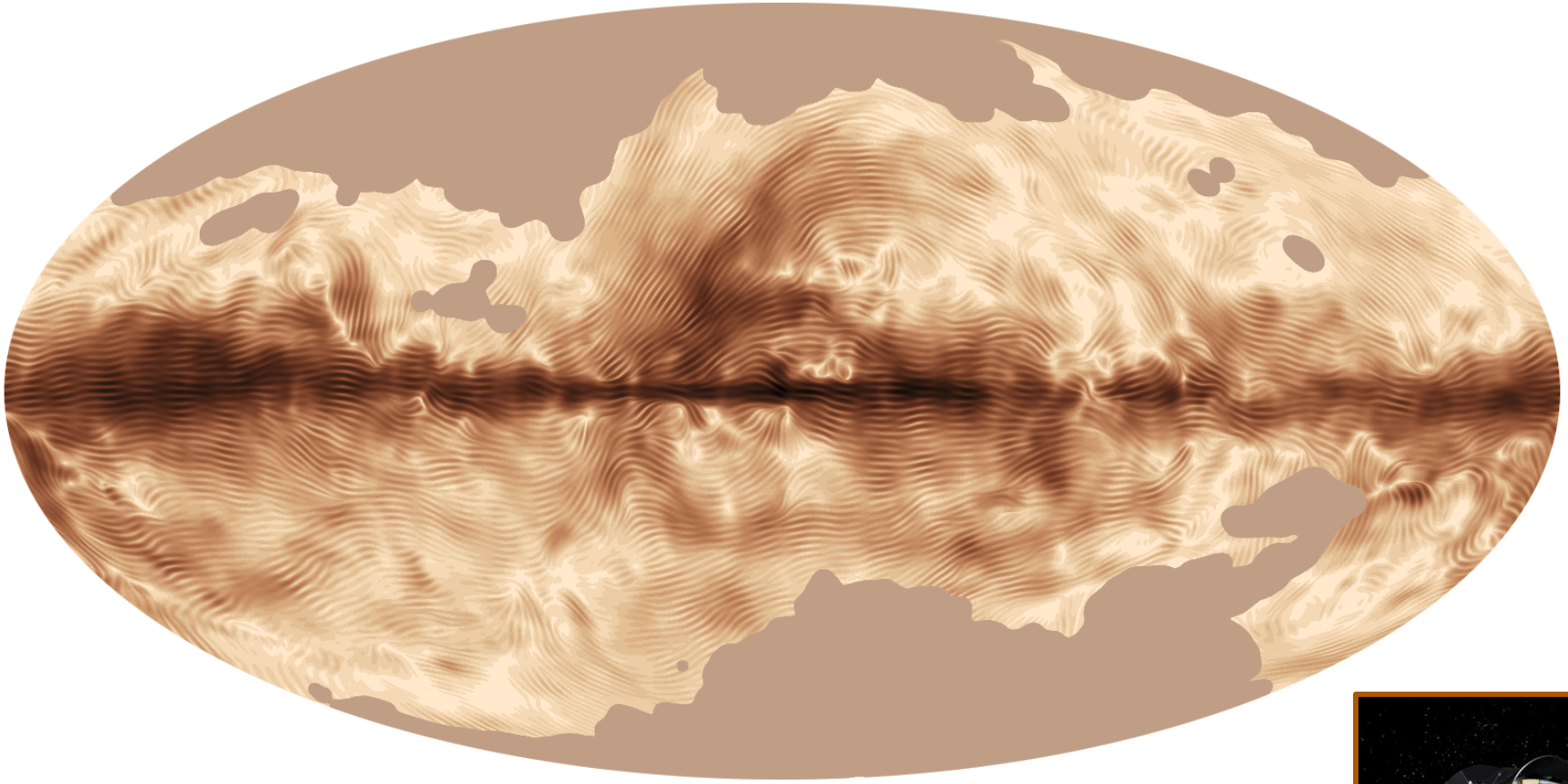


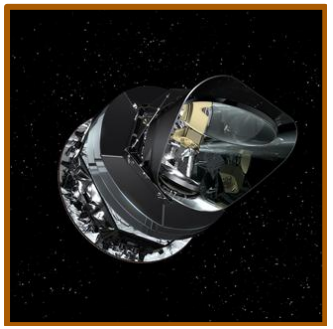
The sun experiences differential rotation; it rotates faster at the equator than at the poles.

The sun's magnetic field lines become twisted as it rotates.

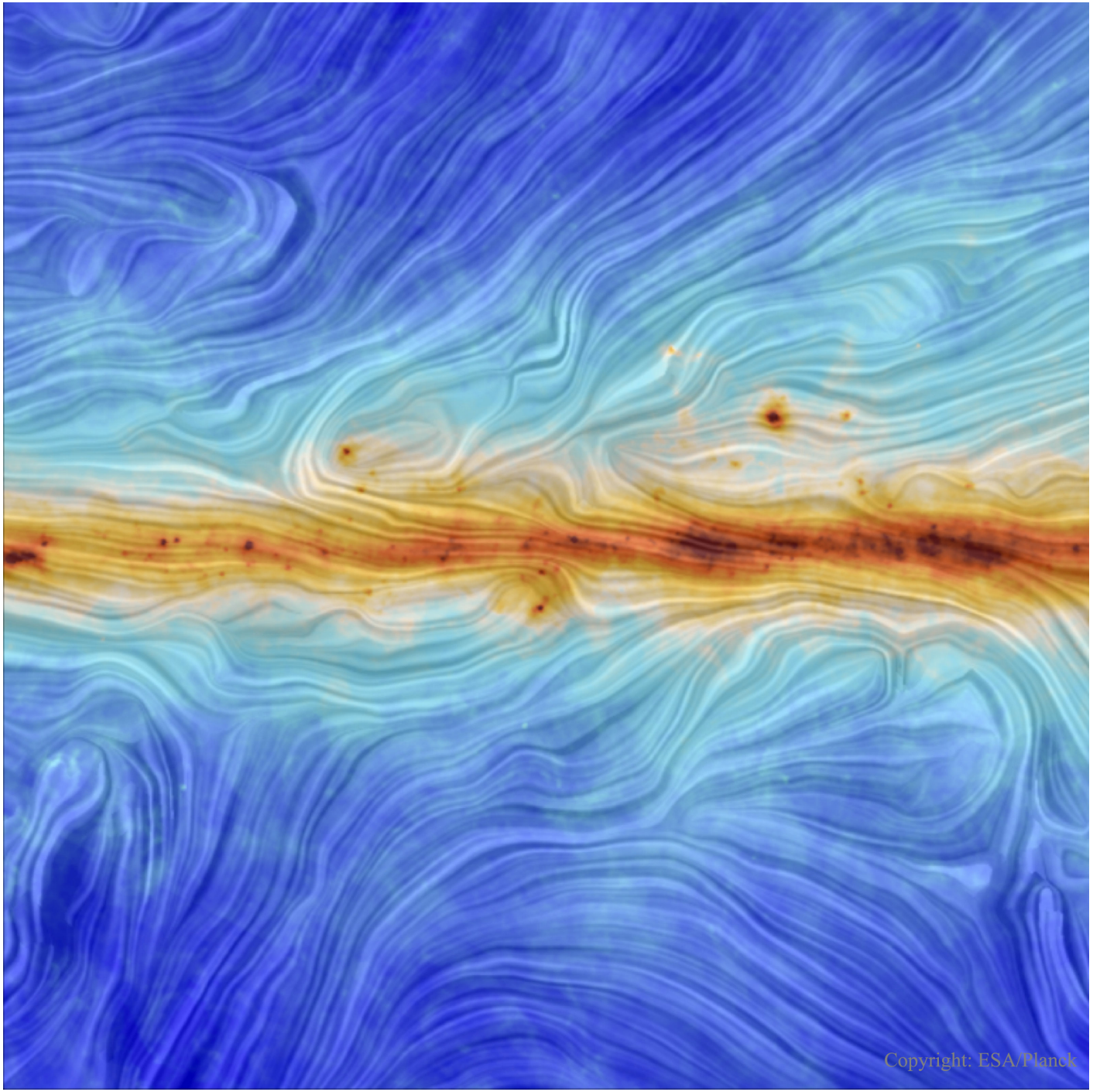


Planck's view of magnetism in the Milky Way Galaxy





European Space Agency (ESA)



Magnetic fields
toward the
Galactic core


QUESTIONS?
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