

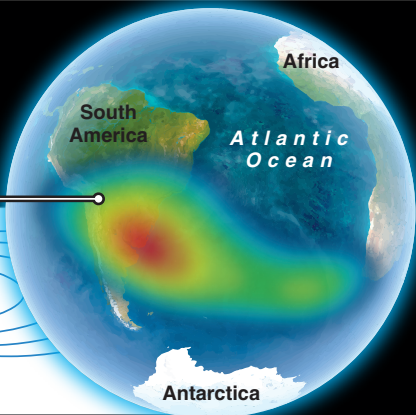
The “dent” in Earth’s magnetic field

NASA is monitoring a strange anomaly in Earth’s magnetic field – a vast region of lower magnetic intensity in the skies above the South Atlantic

SOUTH ATLANTIC ANOMALY (SAA)

Expanding weak spot in Earth’s magnetic field which appears to be starting to split in two

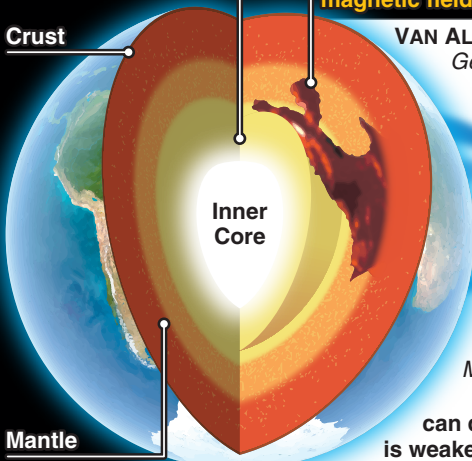
Anomaly poses little risk to life on Earth, but same can’t be said for spacecraft flying overhead



Magnetic field:
Protects Earth from
Sun’s charged particles

Outer core: Spinning liquid iron (5,000°C), creates Earth’s magnetic field

African Large Low Shear Velocity Province: Huge reservoir of dense rock 2,900km below Africa. Disrupts generation of magnetic field – weakening it



VAN ALLEN BELTS

Geographical axis

Charged particles from Sun held in stasis by Earth’s magnetic field



Magnetic axis

Inner belt: Charged particles can dip down where magnetic field is weaker, to around 200km from crust

Radiation threat: Low orbit satellites need to account for extra radiation when passing through anomaly as it can cause electronics to short out. For safety, many satellites are routinely shut down before entering it