



**International  
Association of  
Geomagnetism  
and Aeronomy**



**Association  
Internationale  
de Géomagnétisme  
et d'Aeronomie**

## From the Sun and planets...to the Earth's deep interior

**IAGA's interests cover: HAZARDS**

Space weather and the effects of magnetic storms: damage to satellite systems, disruption of satellite communications, GPS errors, varying orbital drag on satellites, radio communication fadeouts, induced currents in power grids, corrosion in pipelines; electric and magnetic monitoring of earthquakes and volcanoes.

### ENVIRONMENT

Global change; climate change past and present; solar variability and global temperature change; tracing of pollutants; dam siltation; coastal dynamics; salinity mapping; water resources.

### MINERAL & OIL EXPLORATION

Sub-surface mapping and modelling; stratigraphy; dating of sedimentary rocks and mineralisation; hydro-carbon maturation; directional drilling.

### GEOLOGY

Tectonic reconstructions; continental drift; crustal structure and rock properties; stratigraphy; dating of rocks, ocean floor, and marine cores; archaeology.

### NAVIGATION

Magnetic compass corrections and navigation; surveying and direction-finding; orientation of satellites; guidance and detection systems; biomagnetism, animal navigation.

### HUMAN HEALTH

Effects of magnetic fields on humans: radiation exposure to astronauts and high-flying aircraft, biomagnetic effects of electromagnetic radiation.



1. Magnetic field lines generated by the Earth's core [Numerical simulation by Gary Glatzmaier & Paul Roberts] 2. Radial magnetic field at the core-mantle boundary, 1980.0 [Courtesy: Jeremy Bloxham & Andrew Jackson] 3. The International Geomagnetic Reference Field (Z, 2005.0) 4. Scalar magnetic anomaly map of the Earth [Courtesy: Stefan Maus] 5. Aurora oval [Dynamics Explorer view from space, copyright University of Iowa] 6. The Van Allen radiation belts [Courtesy of Windows to the Universe, www.windows.ucar.edu] 7. The Sun's corona [Copyright 2002 by Fred Espenak, www.MrEclipse.com] 8. The Sun as seen in extreme ultra-violet light [SOHO mission; courtesy of NASA/JPL/Caltech] 9. Other planets have magnetic fields [Courtesy of NASA] **Background:** influence of the Sun on the Earth's magnetic field in space [Courtesy: NASA]



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Union of Geodesy and Geophysics

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