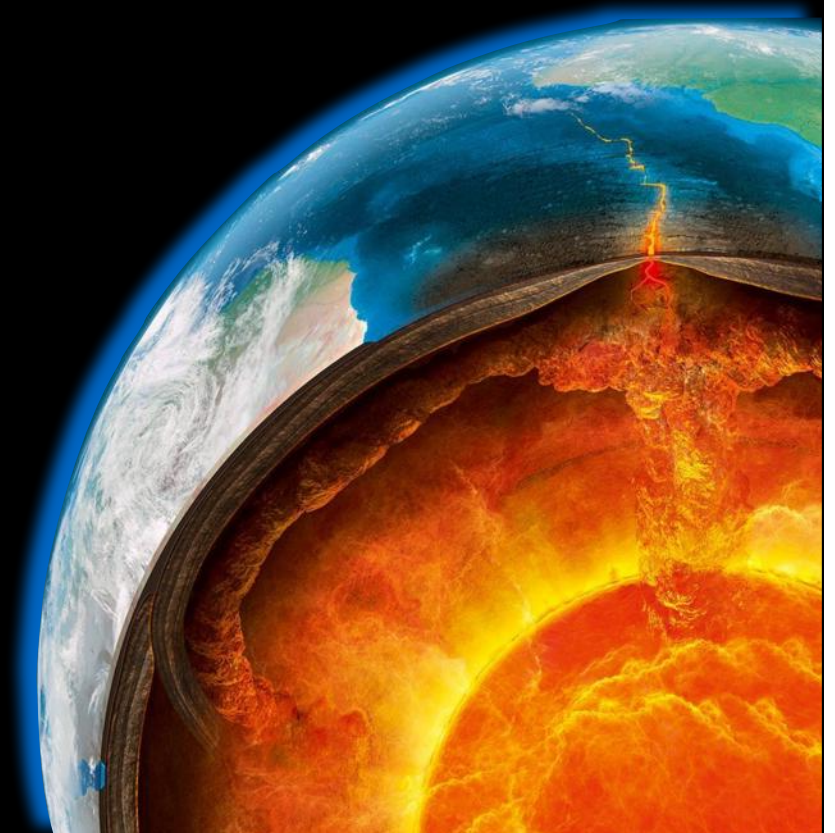


Spheres of the Earth

*What are the three spheres of the Earth
and their characteristics?*

Spheres of the Earth

- Atmosphere - layer of gases
- Lithosphere - layer of rocks
- Hydrosphere - layer of water
- Biosphere - layer of living things



Spheres of the Earth



Spheres of the Earth

- Exosphere - the outermost region of the atmosphere
 - With no clearcut boundary gases slowly “leak” out

Exosphere →



Spheres of the Earth

- Thermosphere - a region of the atmosphere where high-energy X-rays and UV radiation are absorbed
 - *Temperature Increases*

Thermosphere →



Spheres of the Earth

- Mesosphere - a region of the atmosphere where meteors burn up
 - *Temperature decreases*

Mesosphere



Spheres of the Earth

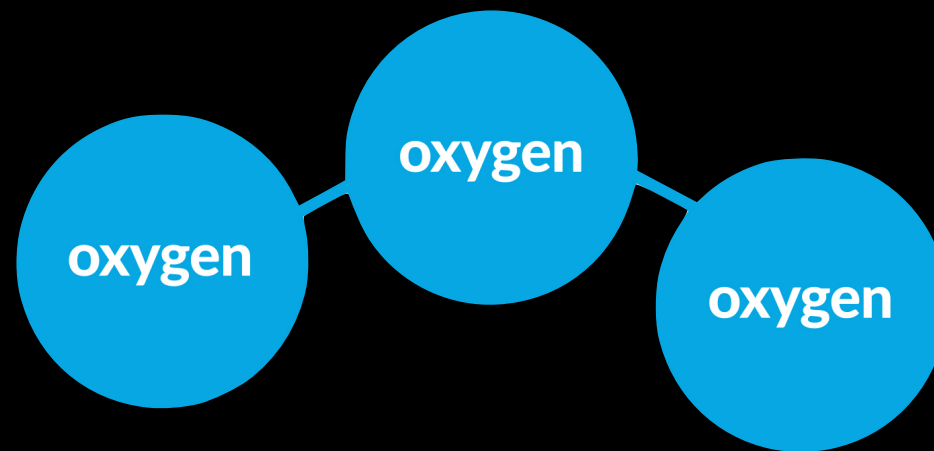
- Stratosphere - a region of the atmosphere that contains ozone
 - *Temperature increases*

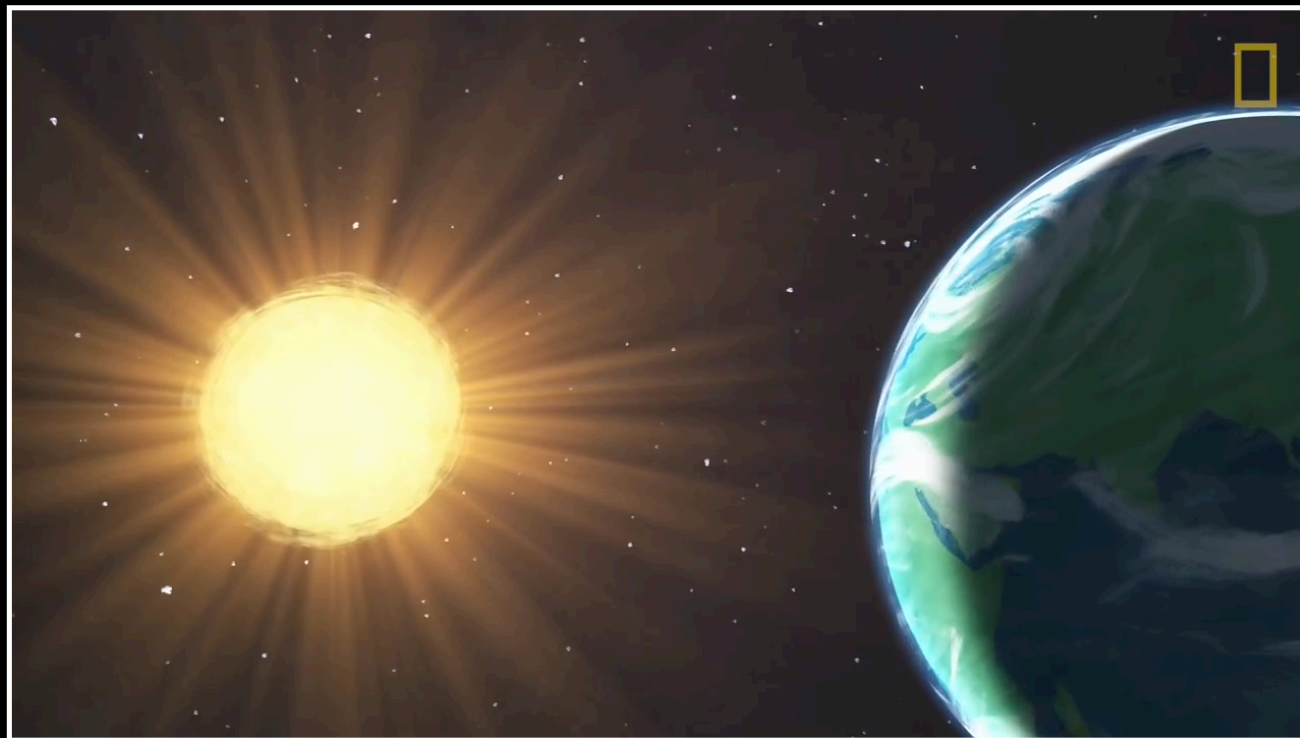
Stratosphere →



Spheres of the Earth

- Ozone - molecules that absorb harmful ultraviolet [UV] light





The Ozone Hole

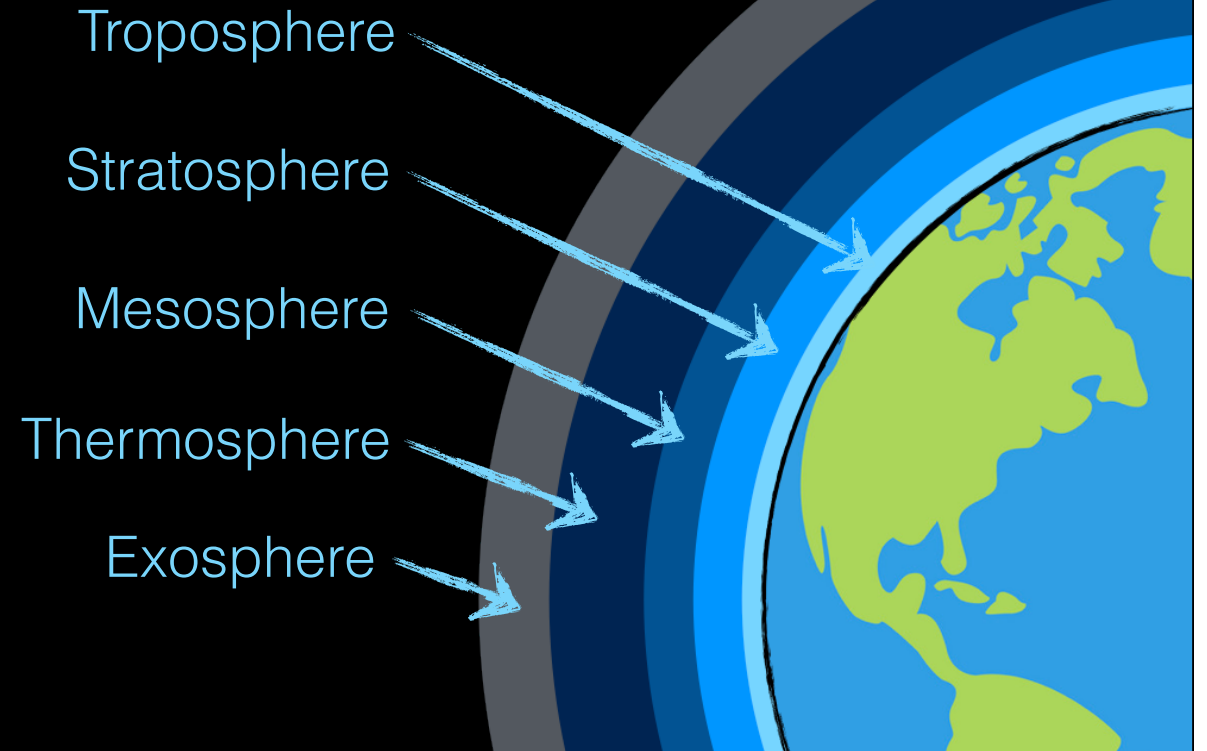
Spheres of the Earth

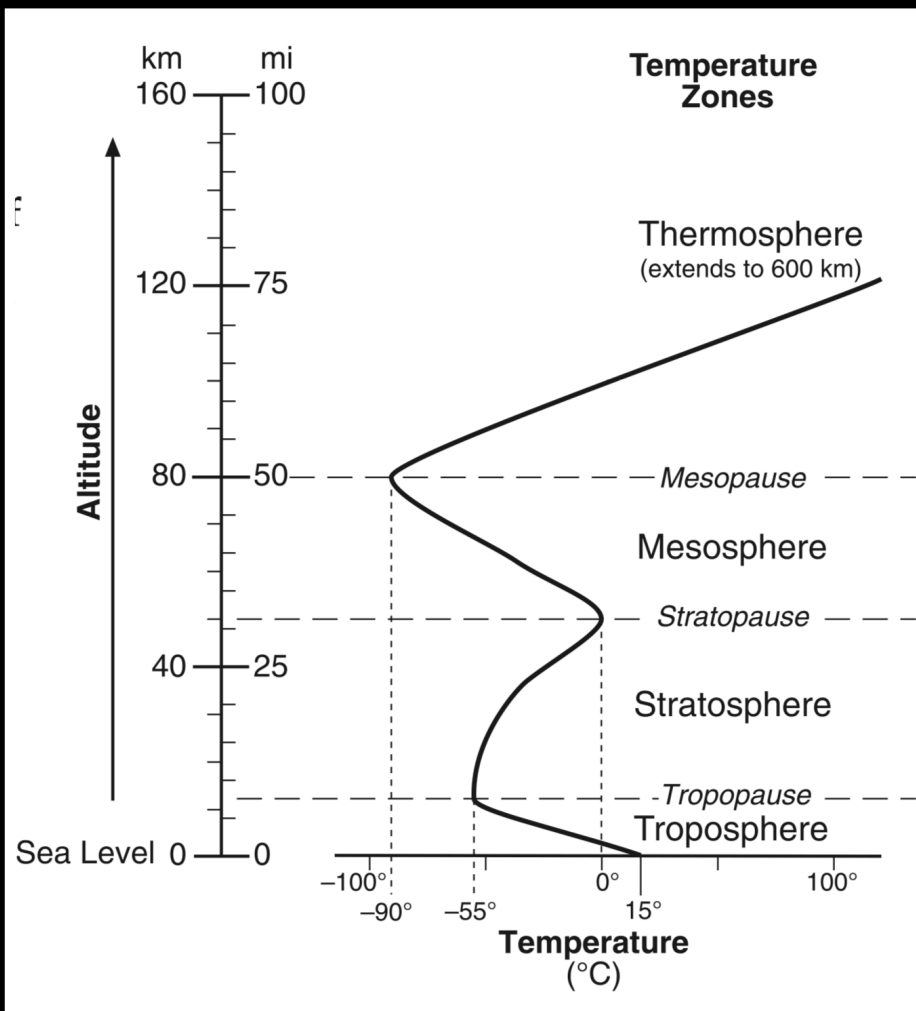
- Troposphere - the lowest portion of the atmosphere where weather occurs
 - *Temperature decreases*

Troposphere



Spheres of the Earth



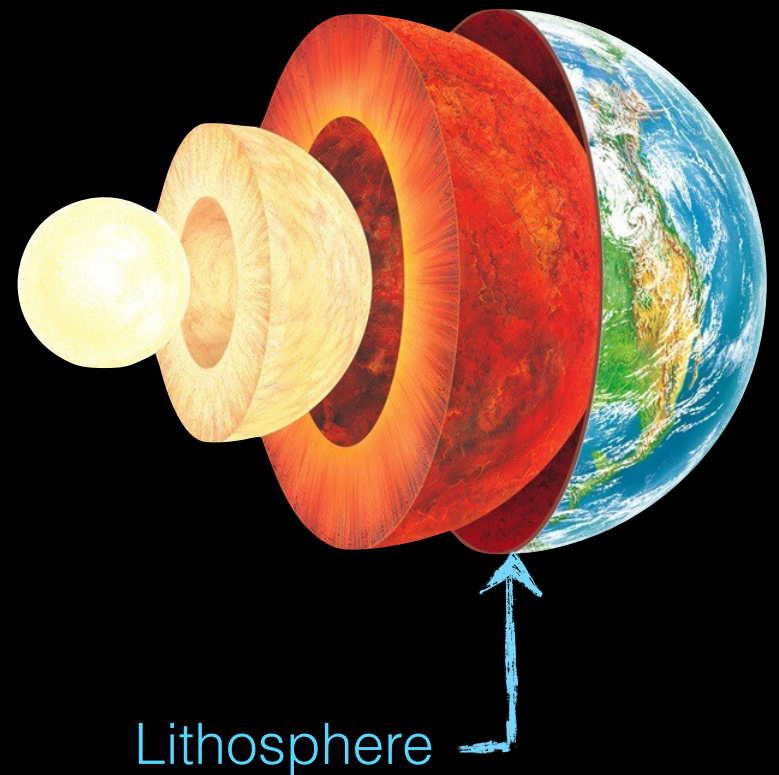


Earth Science Reference Tables

Selected Properties of Earth's Atmosphere

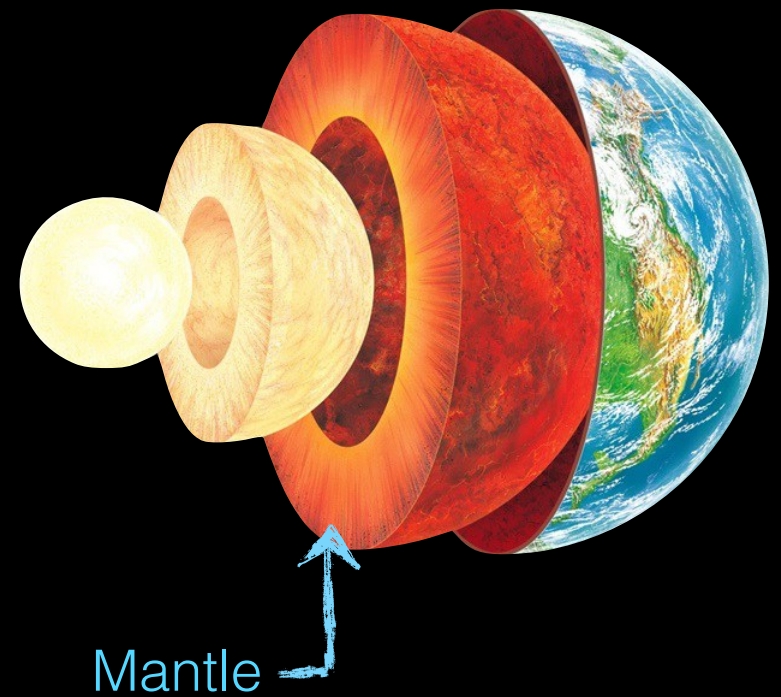
Spheres of the Earth

- Lithosphere - the rigid outer part of the Earth consisting of the crust and upper mantle



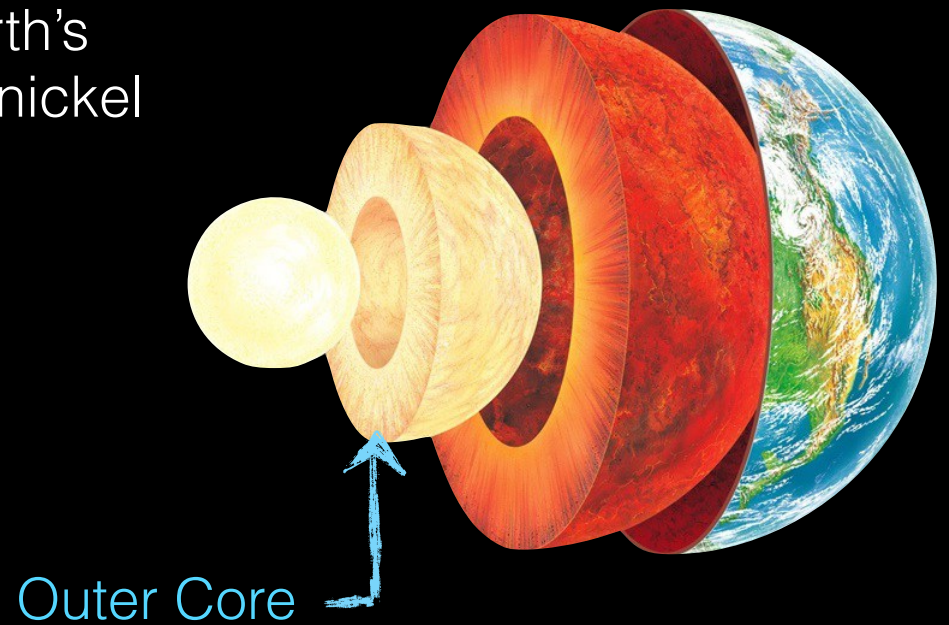
Spheres of the Earth

- Mantle - largest portion of Earth's interior [80% of Earth's total volume]



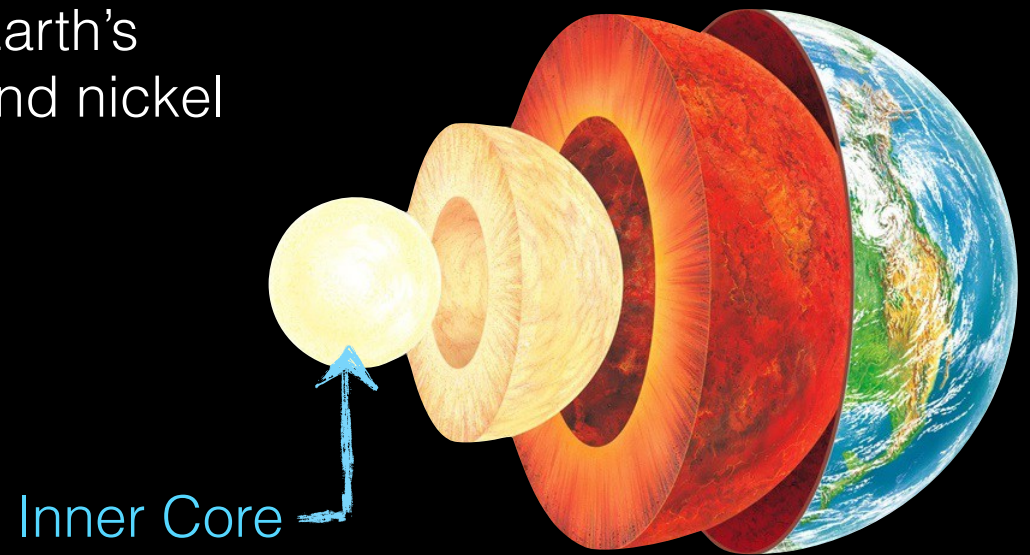
Spheres of the Earth

- Outer Core - liquid layer of Earth's interior composed of iron and nickel

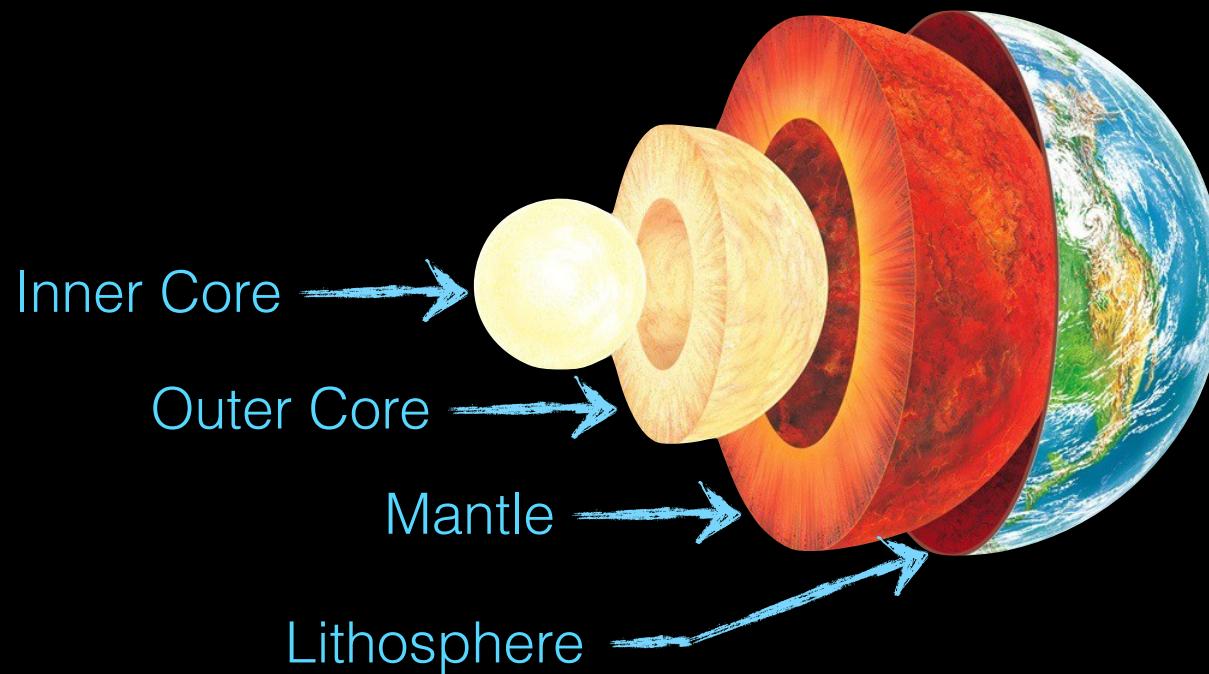


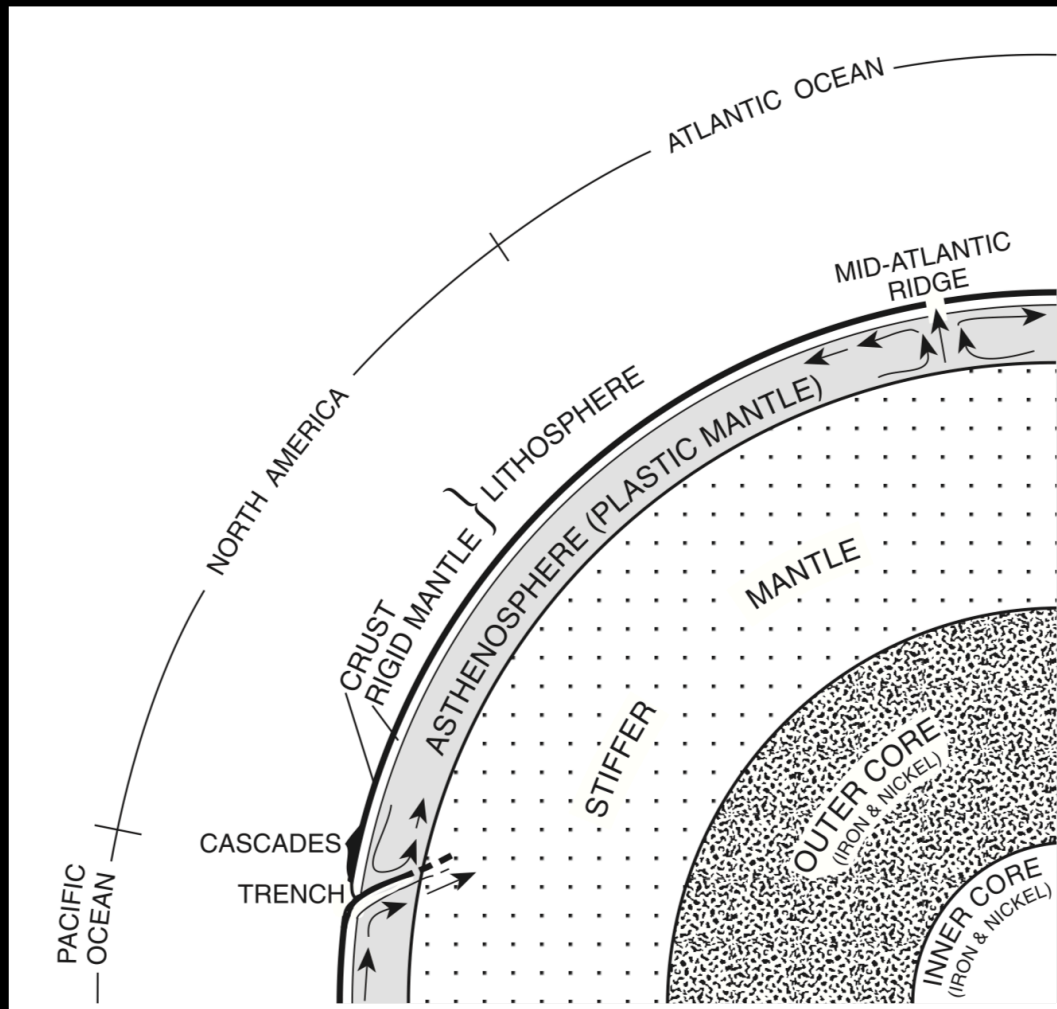
Spheres of the Earth

- Inner Core - solid layer of Earth's interior composed of iron and nickel



Spheres of the Earth





Earth Science Reference Tables

Inferred Properties of Earth's Interior

Average Chemical Composition of Earth's Crust, Hydrosphere, and Troposphere

ELEMENT (symbol)	CRUST		HYDROSPHERE	TROPOSPHERE
	Percent by mass	Percent by volume	Percent by volume	Percent by volume
Oxygen (O)	46.10	94.04	33.0	21.0
Silicon (Si)	28.20	0.88		
Aluminum (Al)	8.23	0.48		
Iron (Fe)	5.63	0.49		
Calcium (Ca)	4.15	1.18		
Sodium (Na)	2.36	1.11		
Magnesium (Mg)	2.33	0.33		
Potassium (K)	2.09	1.42		
Nitrogen (N)				78.0
Hydrogen (H)			66.0	
Other	0.91	0.07	1.0	1.0