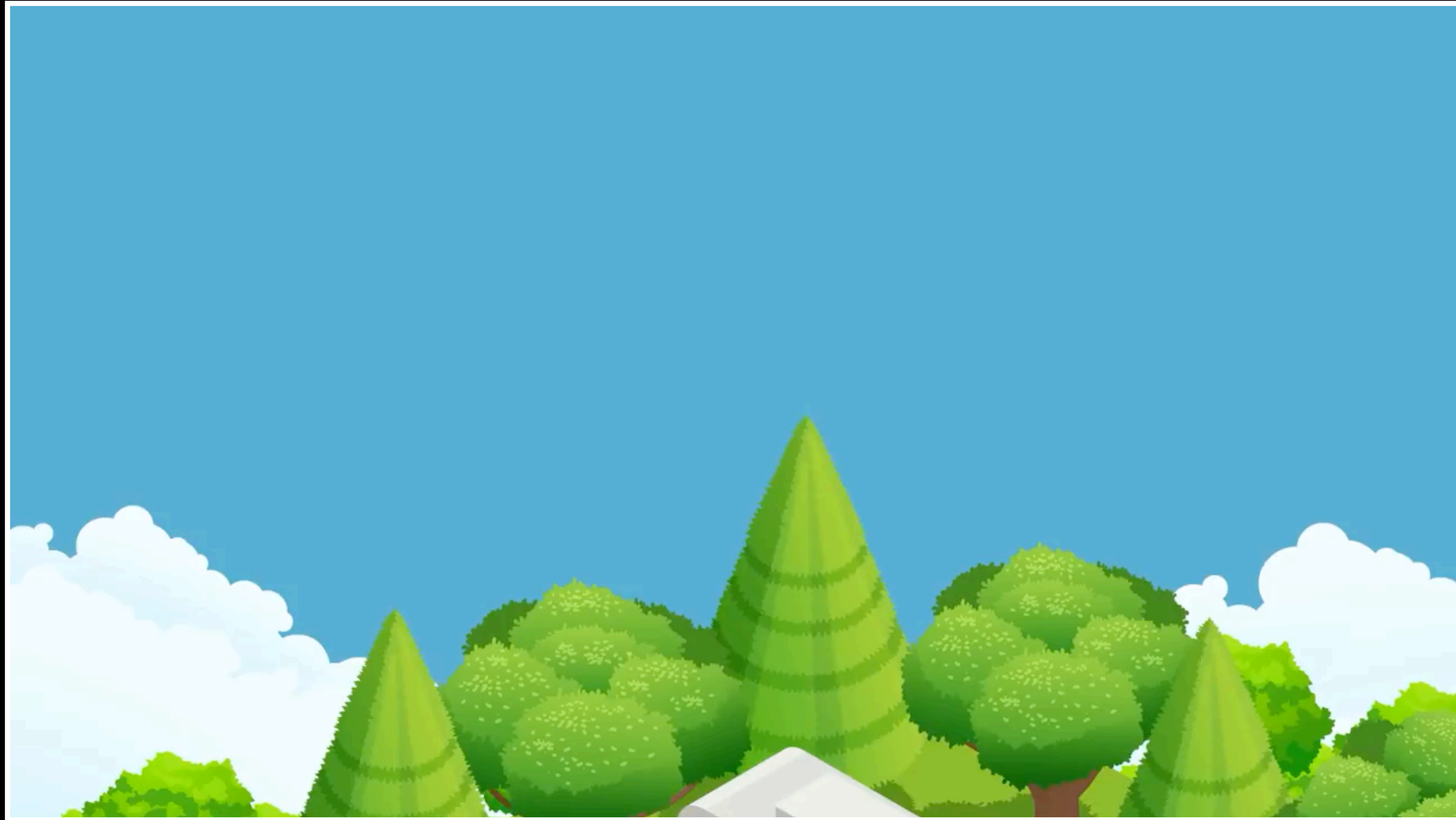


Spheres of the Earth

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

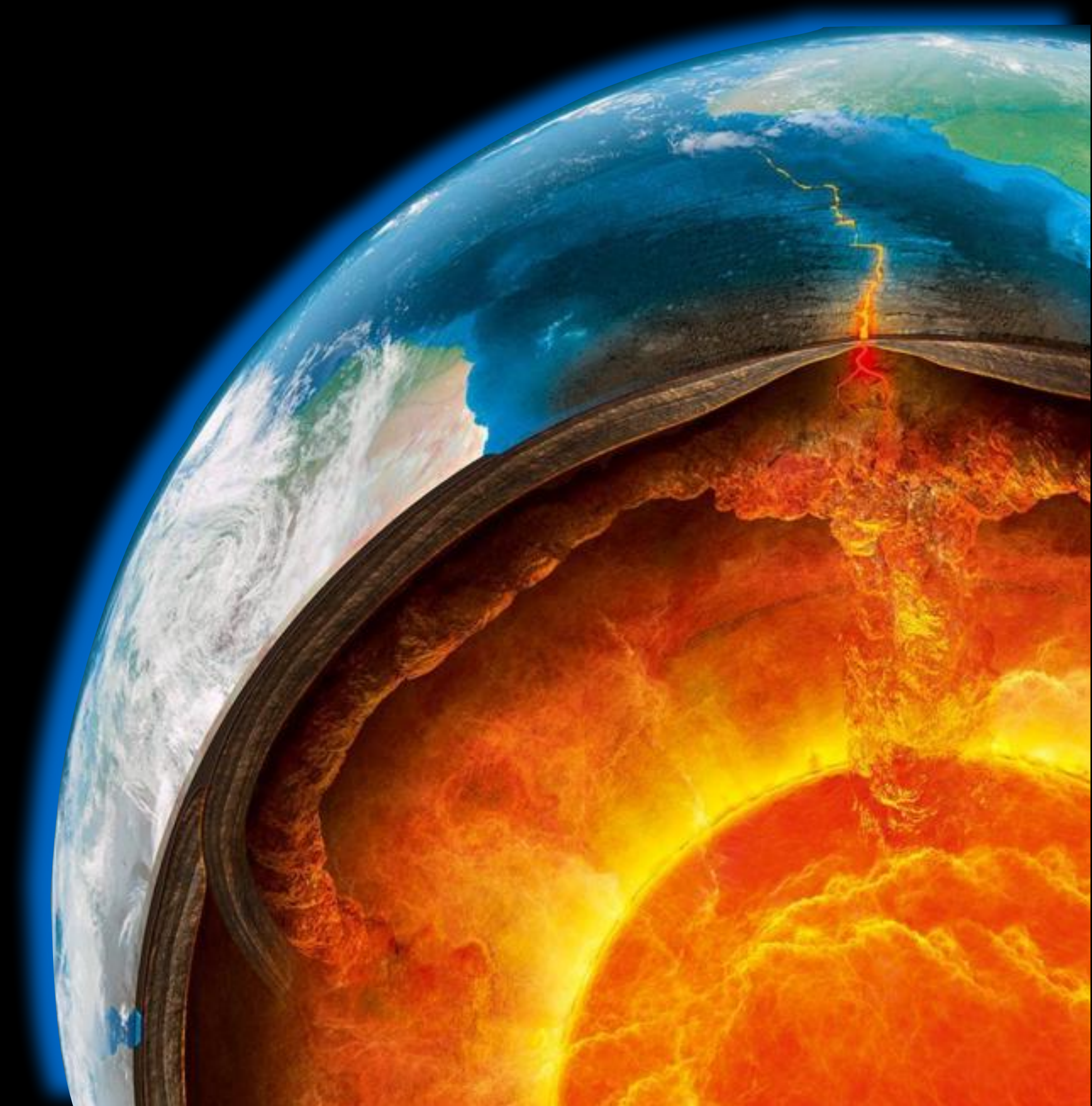


Phenomenon: Spheres of the Earth



Spheres of the Earth

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



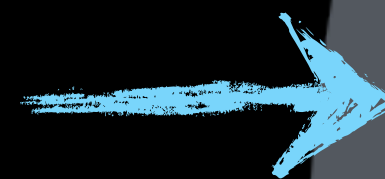
Spheres of the Earth



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

Thermosphere





Burning up in the Mesosphere

Spheres of the Earth

- Mesosphere - a region of the atmosphere where meteors burn up

Mesosphere



Spheres of the Earth

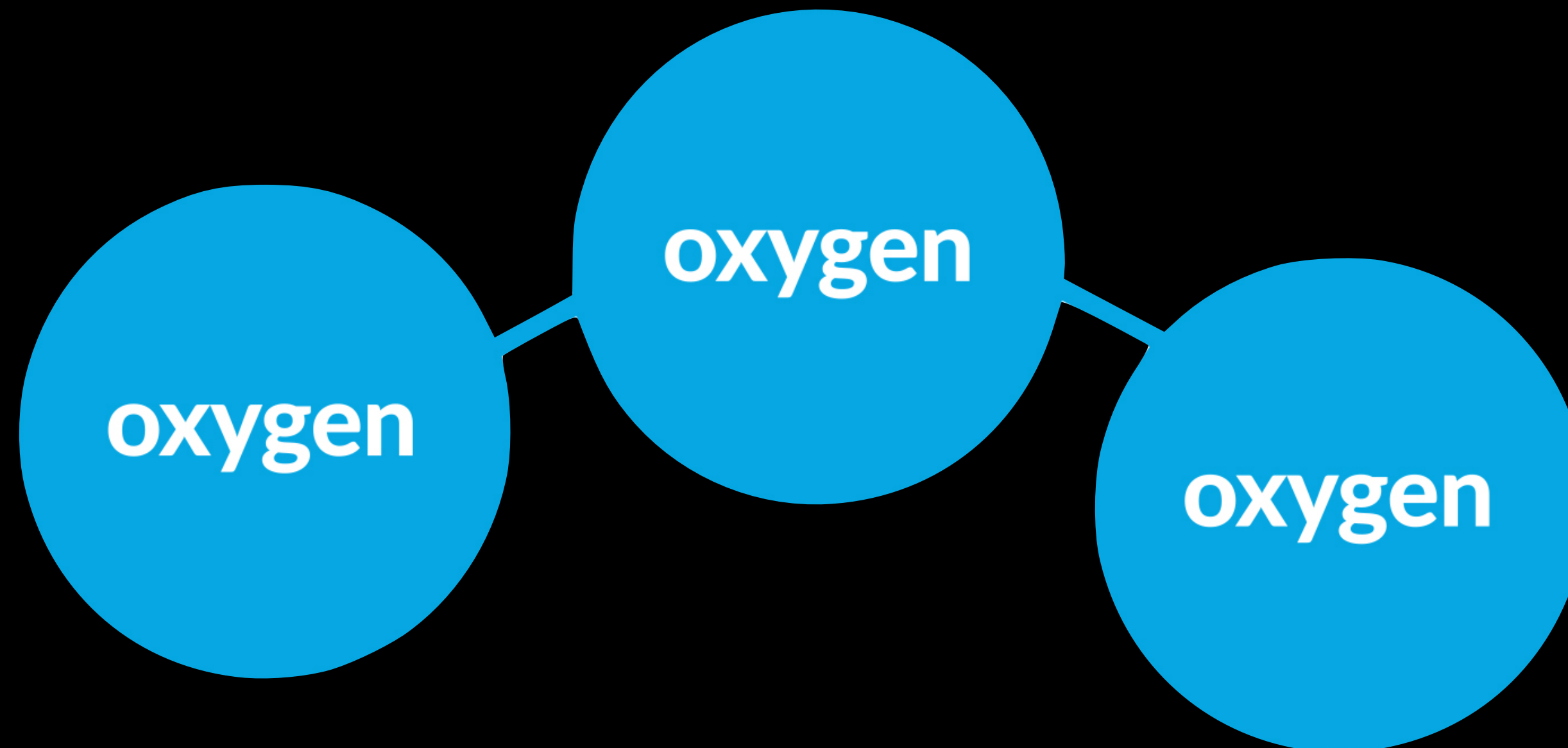
- Stratosphere - a region of the atmosphere that contains ozone

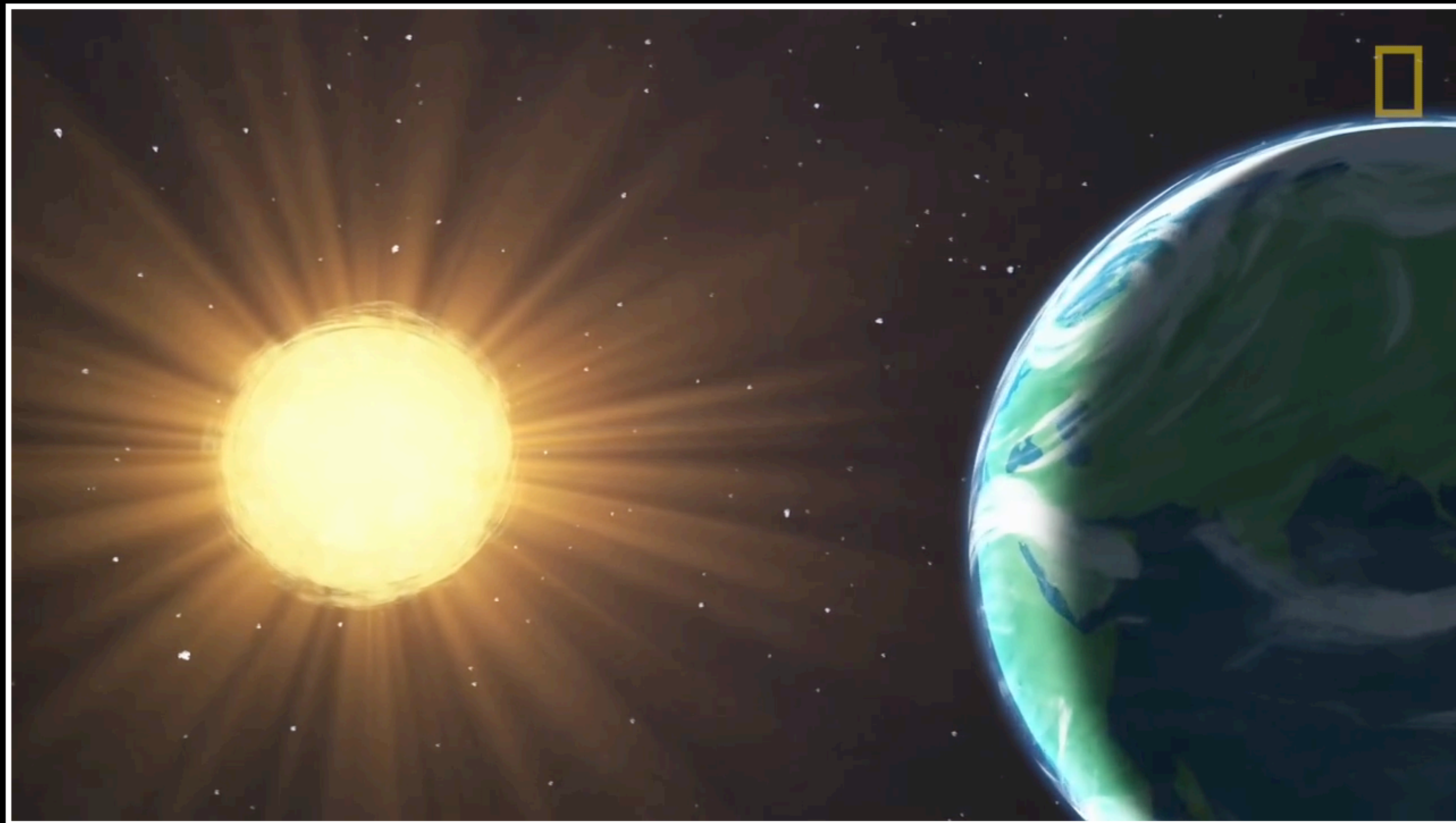
Stratosphere



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

Troposphere



Spheres of the Earth

Troposphere

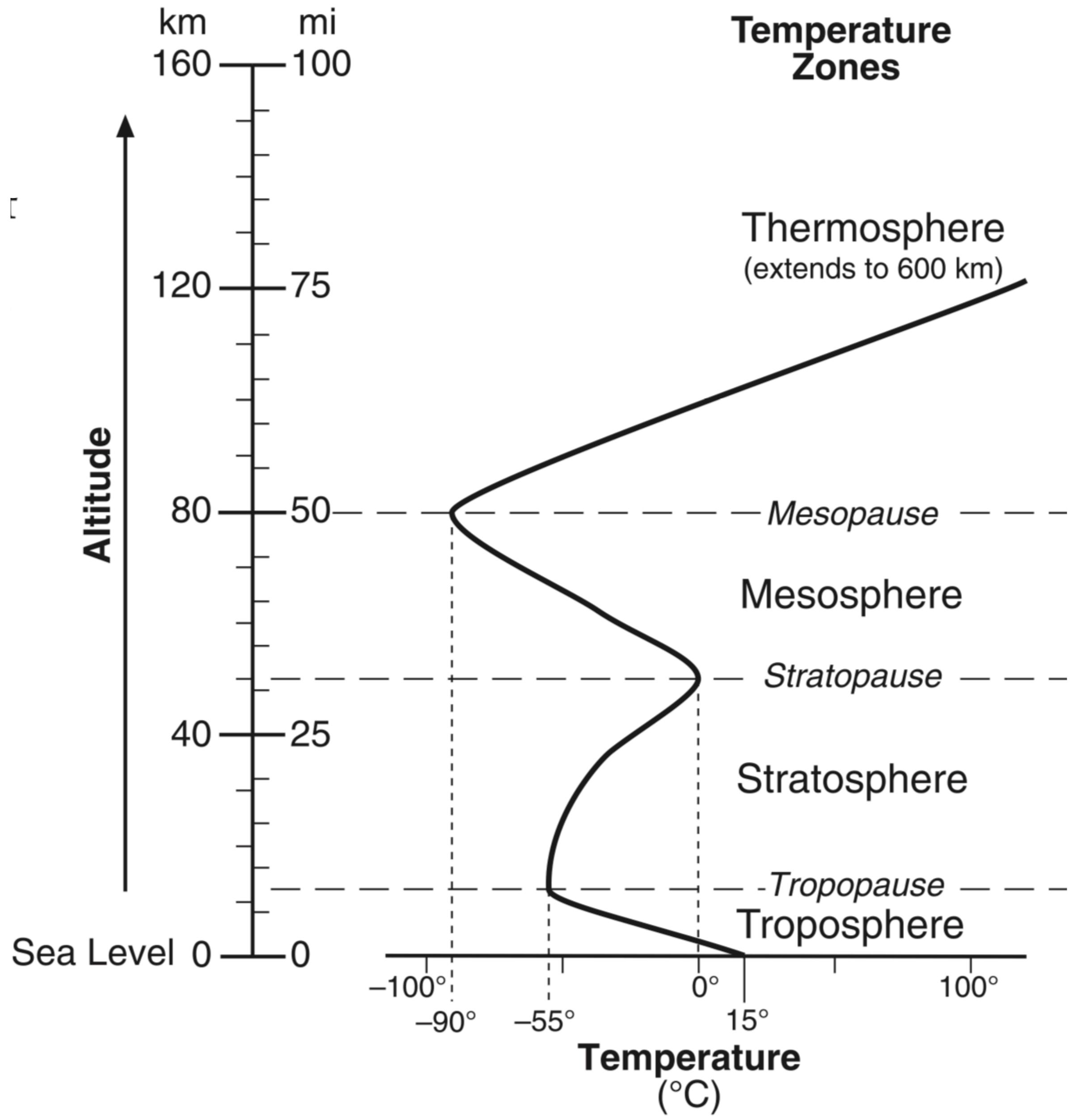
Stratosphere

Mesosphere

Thermosphere

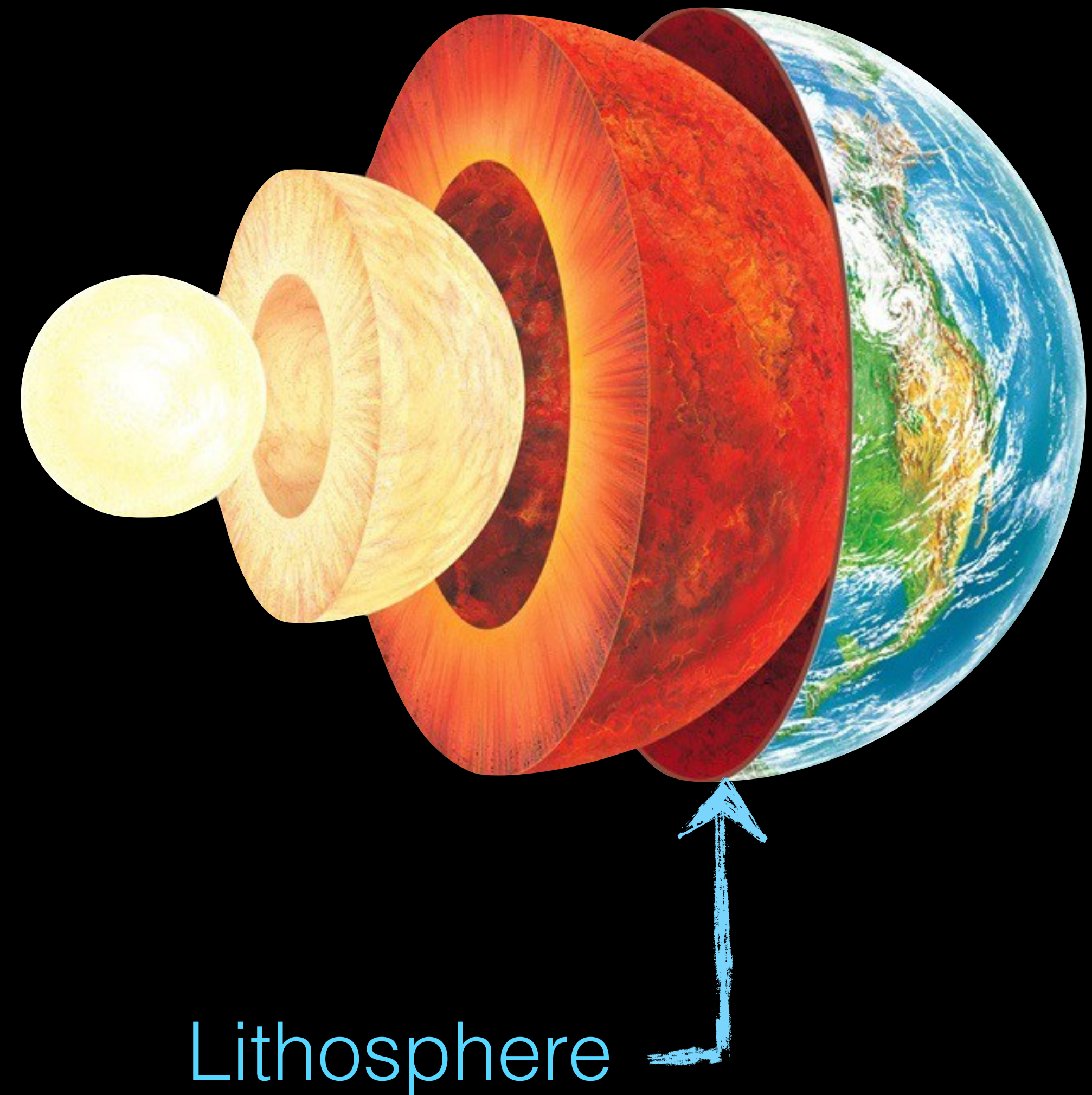
Exosphere





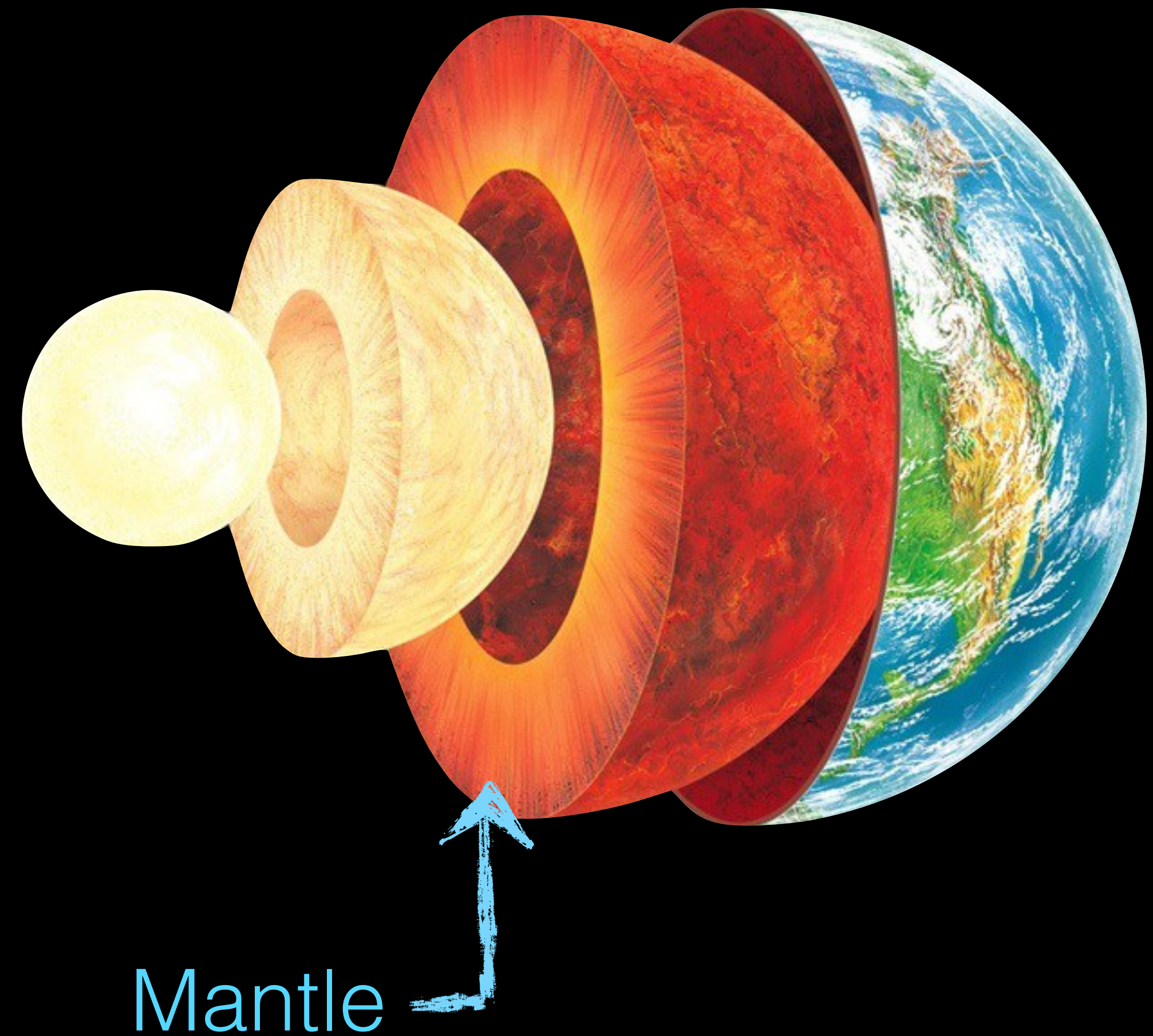
Spheres of the Earth

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



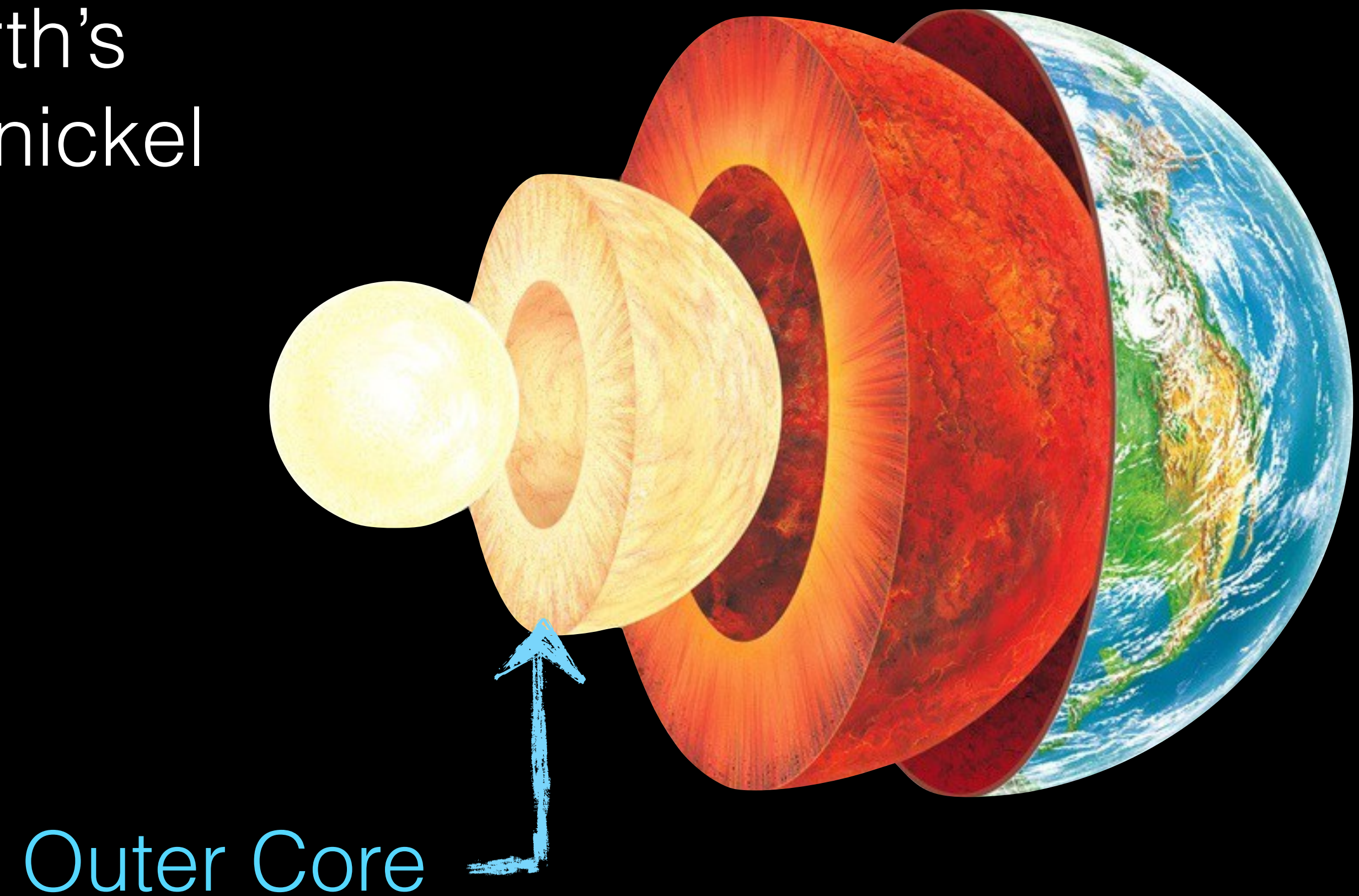
Spheres of the Earth

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



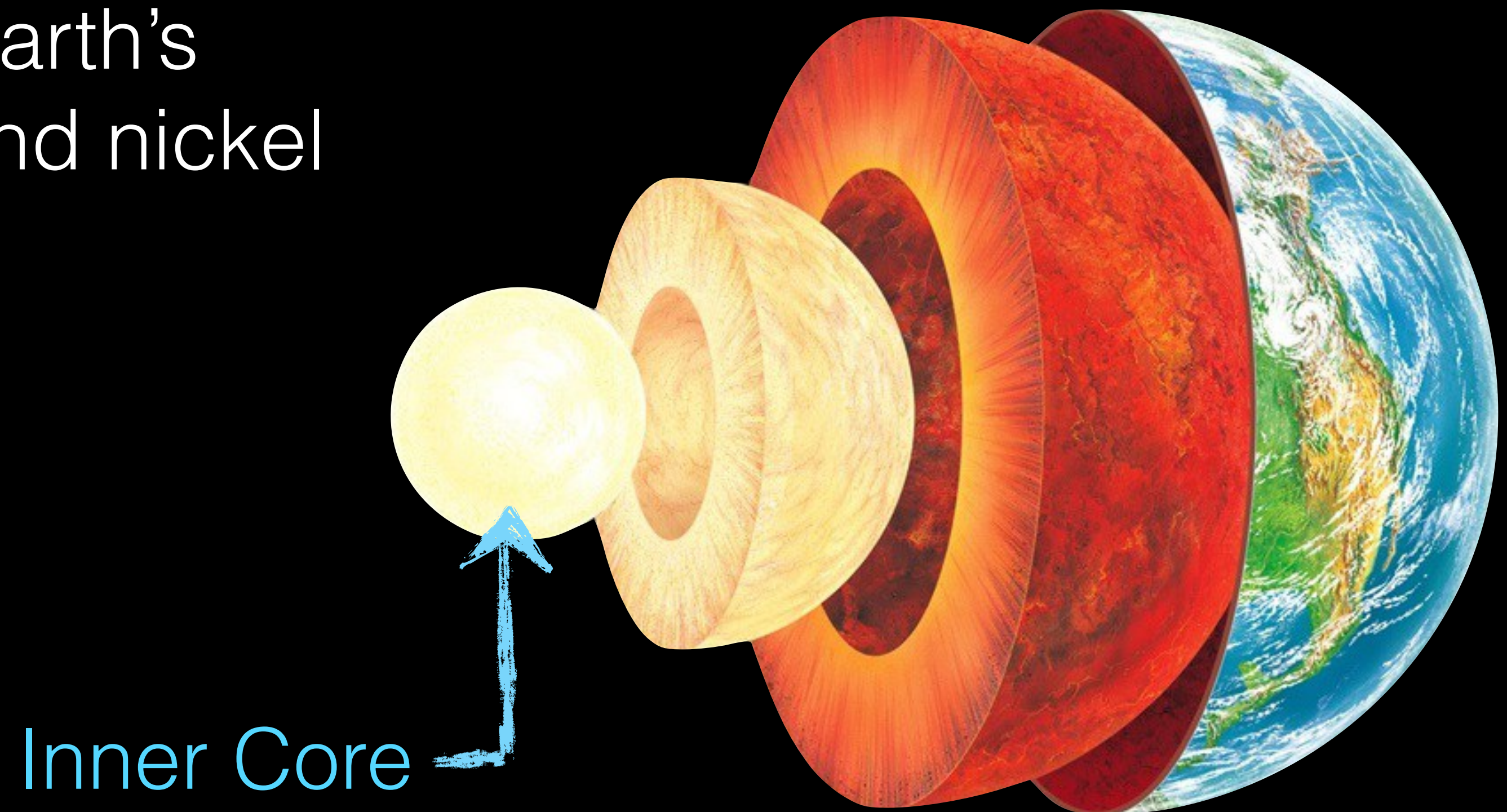
Spheres of the Earth

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

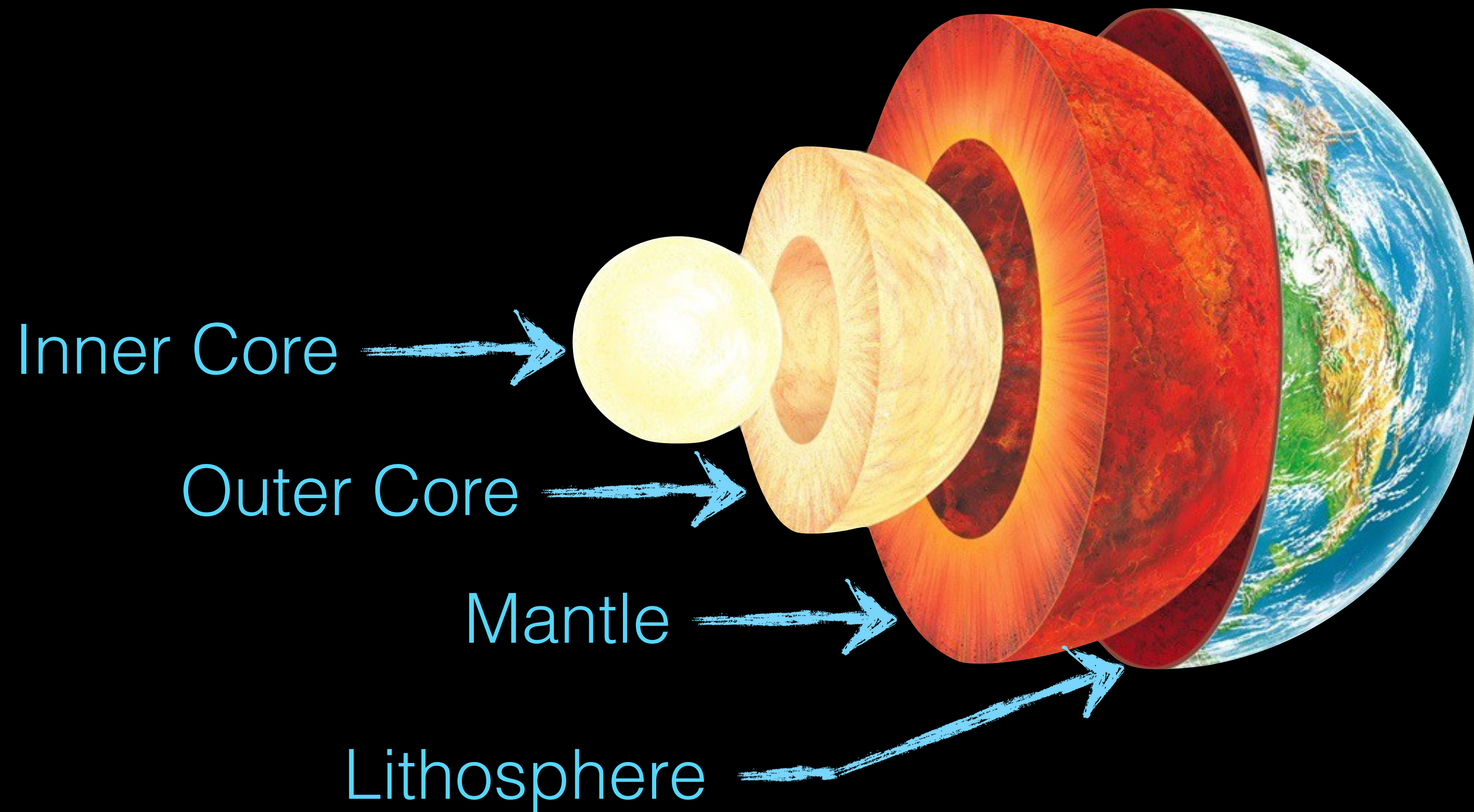


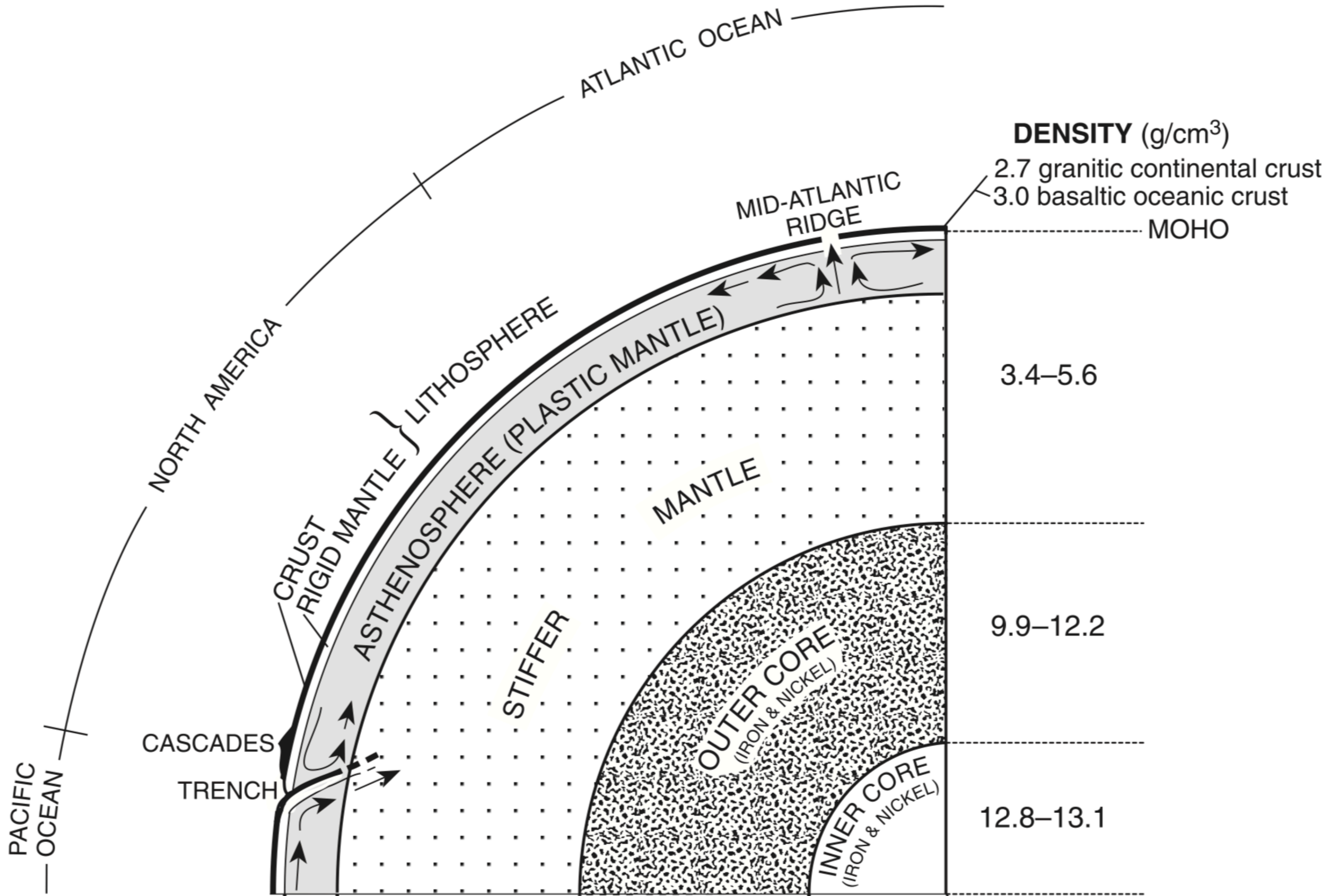
Spheres of the Earth

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



Spheres of the Earth





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

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