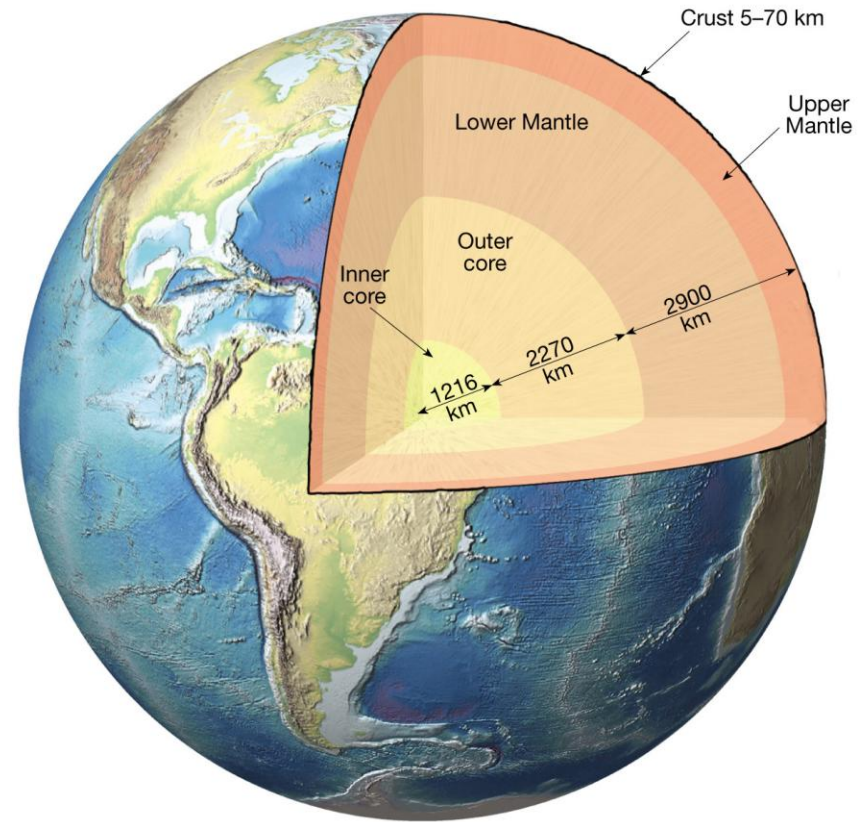


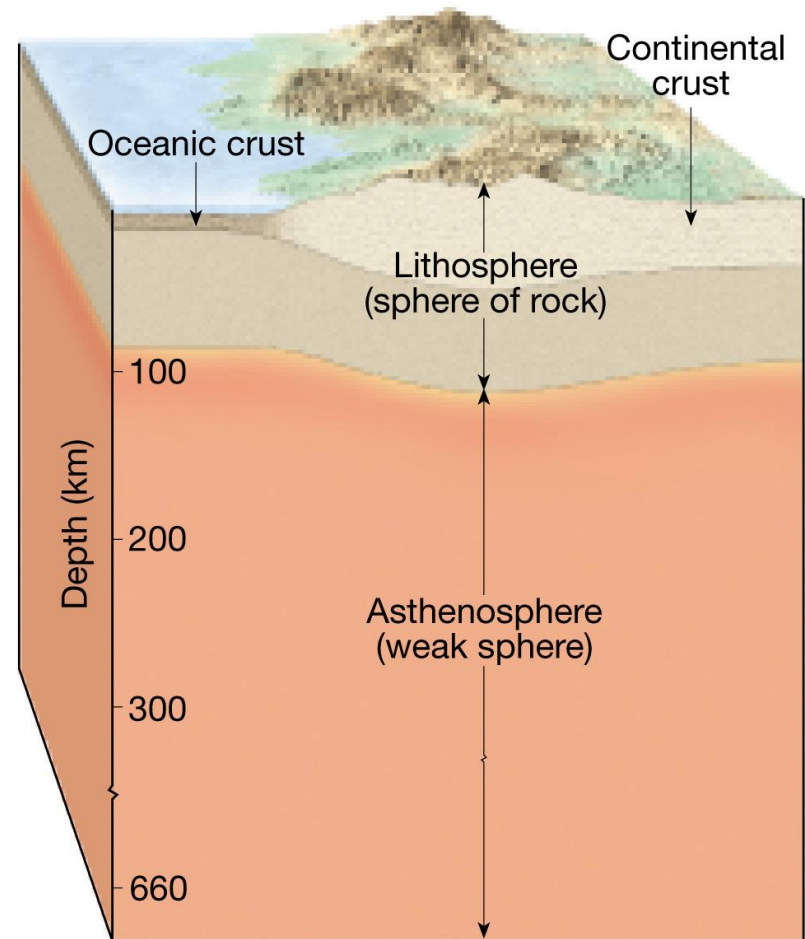
Layers of the Earth's Interior

- Earth consists of four main layers:
 - Inner core: solid iron
 - Outer core: liquid iron
 - Mantle: mostly solid rock
 - Crust: mostly solid rock; less dense than mantle

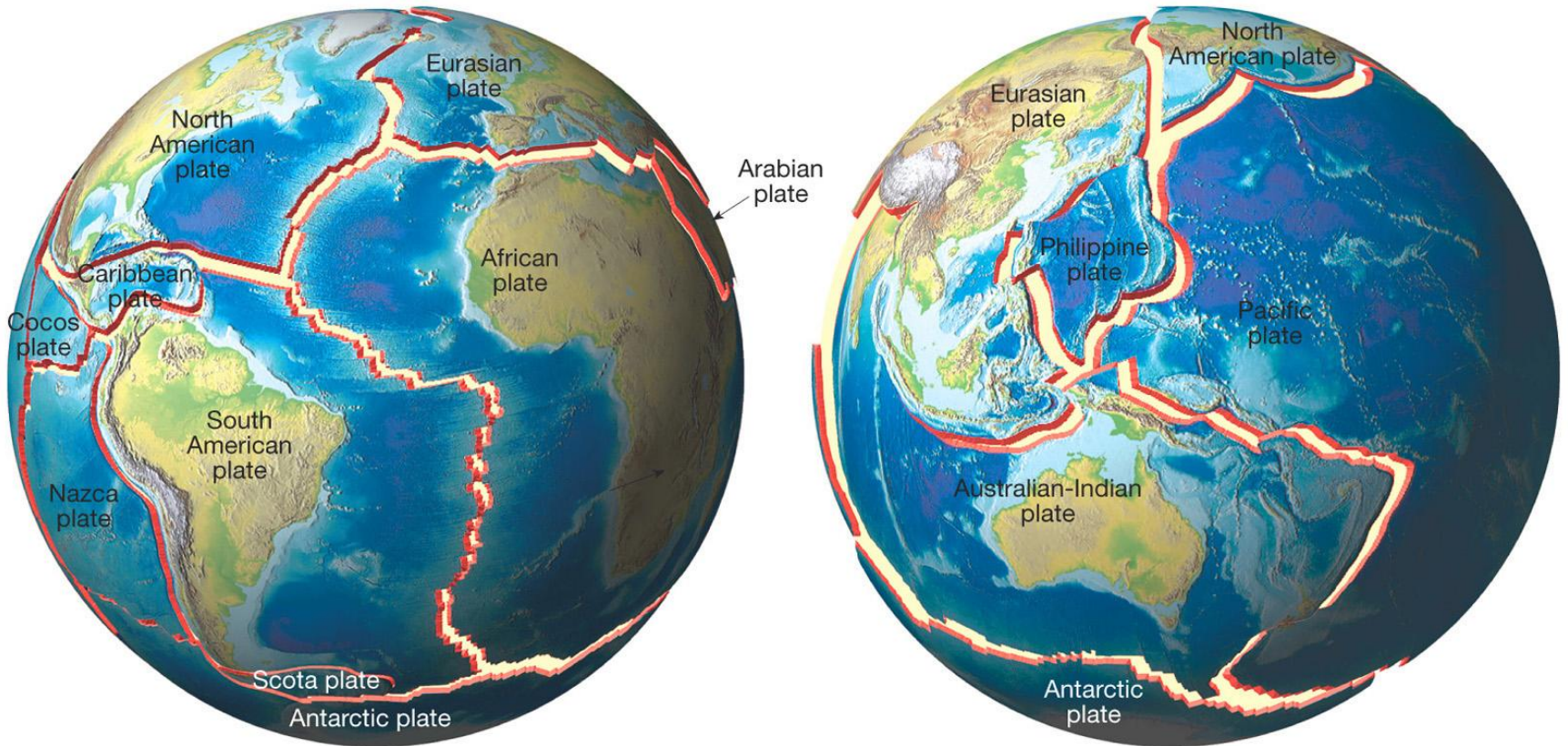


Lithosphere and Asthenosphere

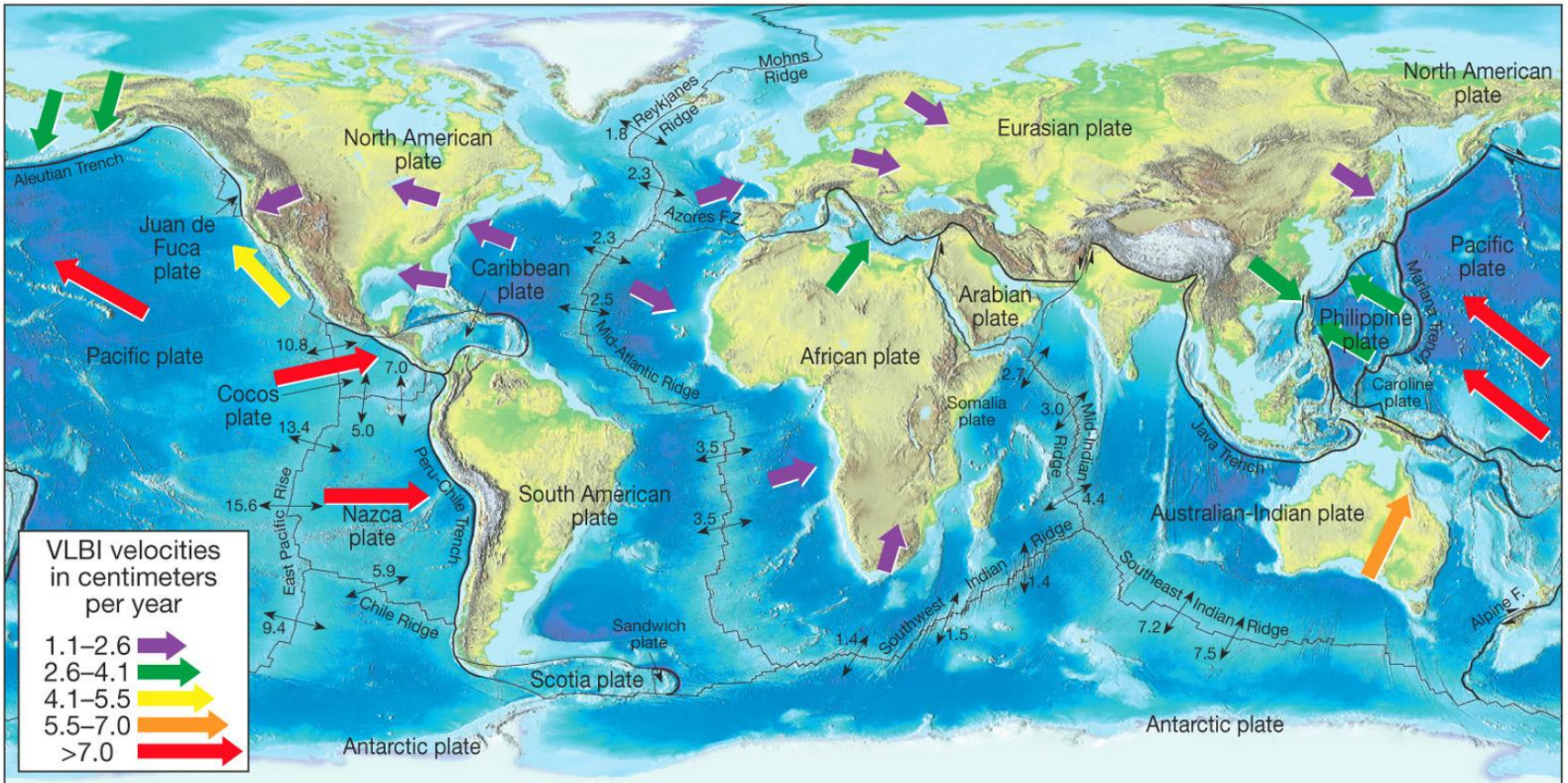
- Crust plus the uppermost mantle form the **lithosphere**: the rigid outer layer of the earth.
- Lithosphere is broken into pieces called **tectonic plates**.
- Tectonic plates move around on a softer layer in the mantle (the **asthenosphere**).



Tectonic Plates

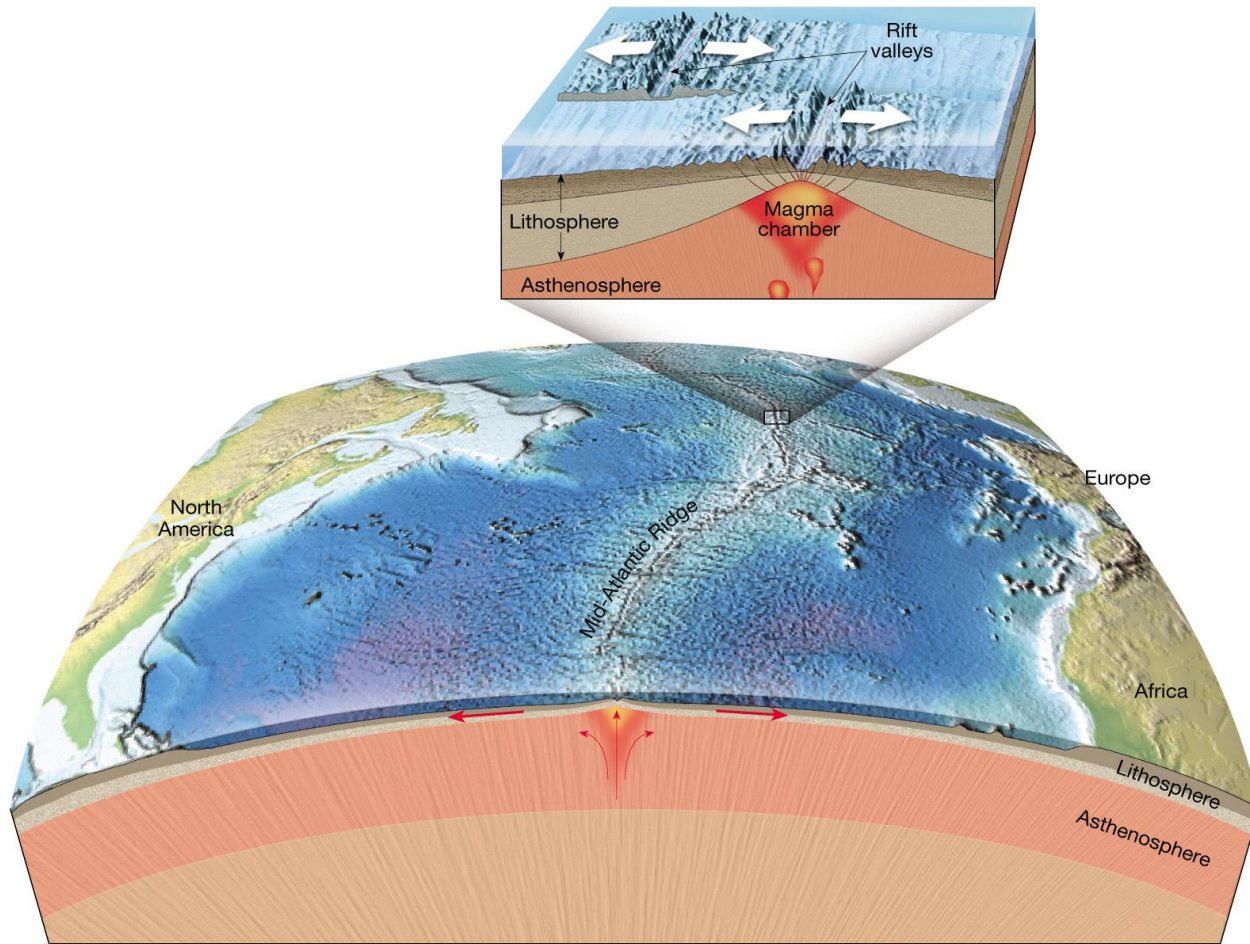


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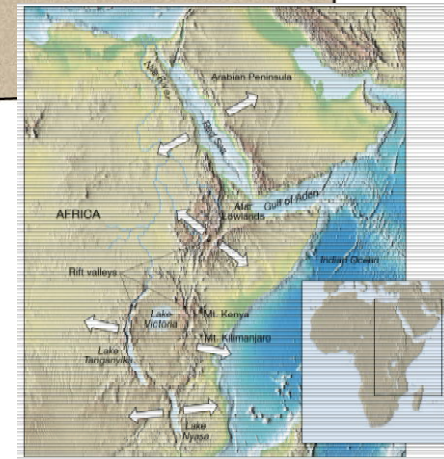
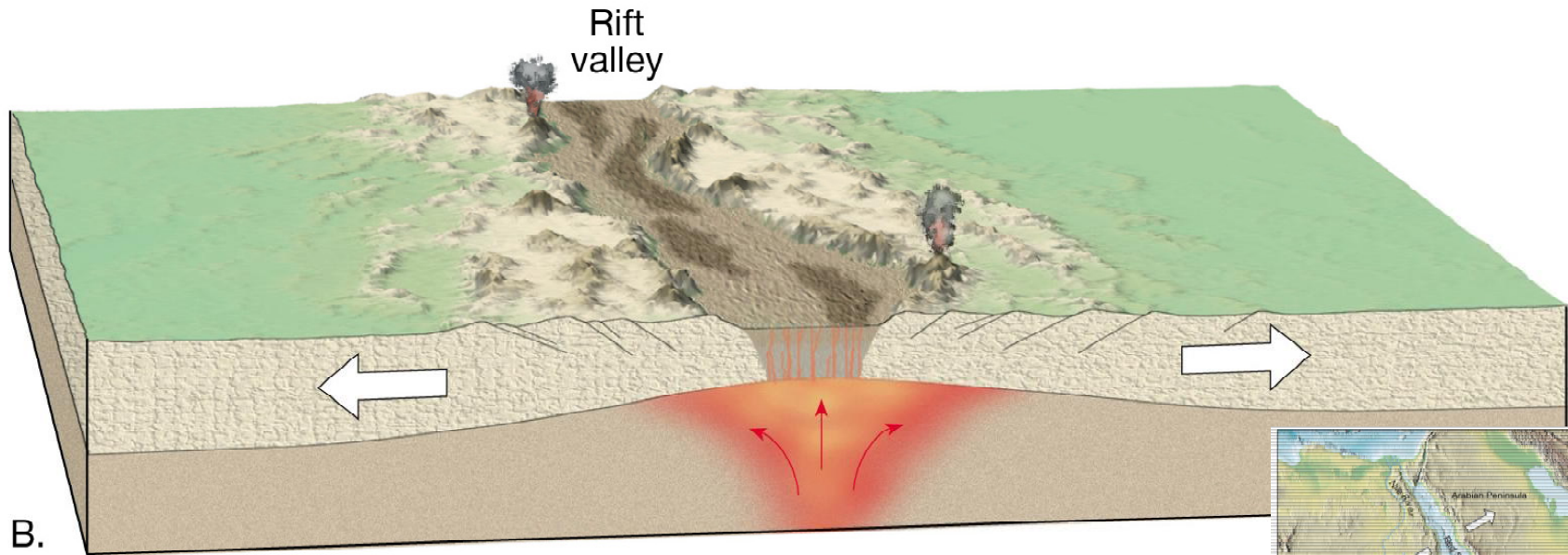
Divergent Plate Boundaries



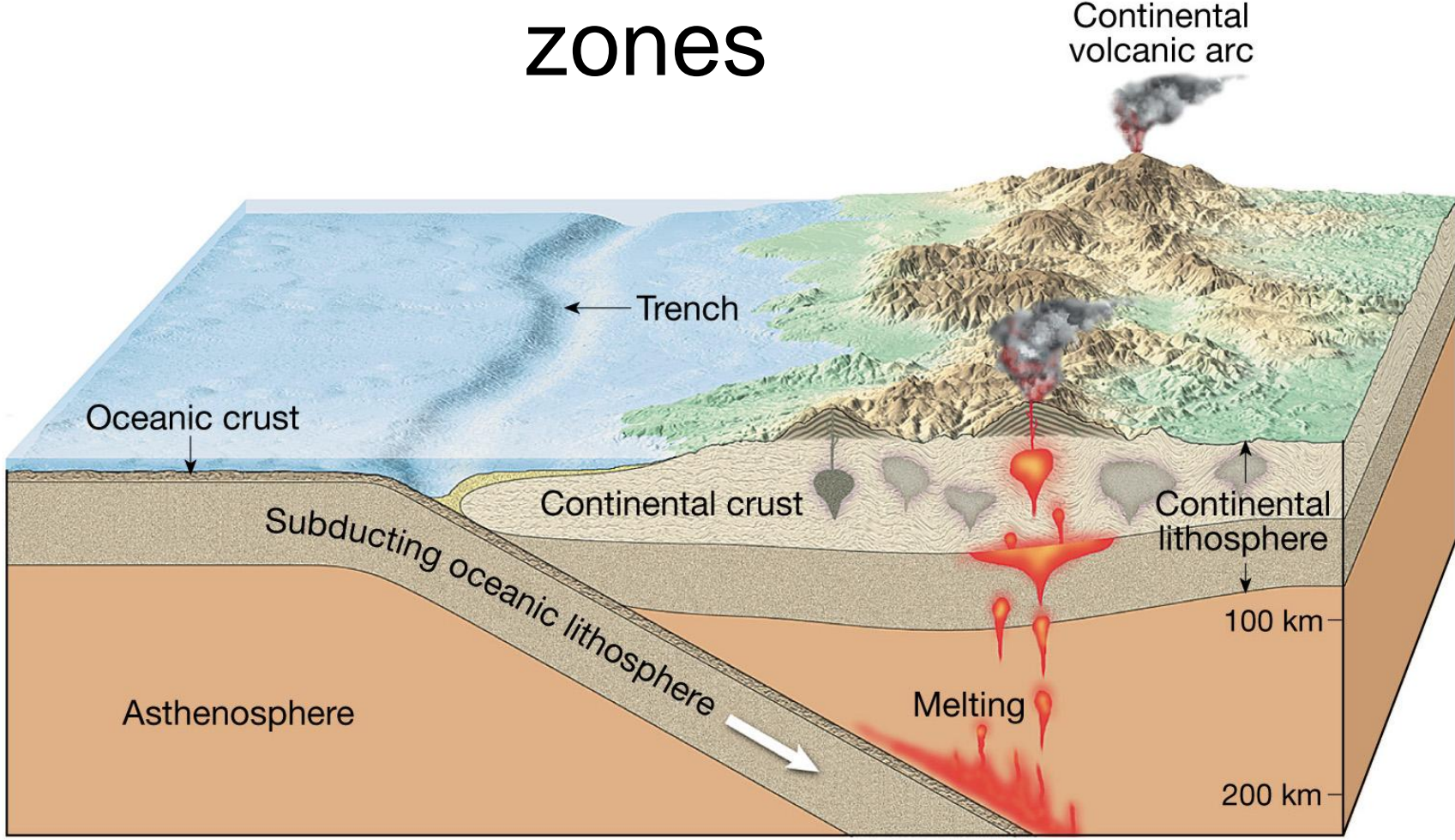
Divergent plate boundary in Atlantic



Continental rifting

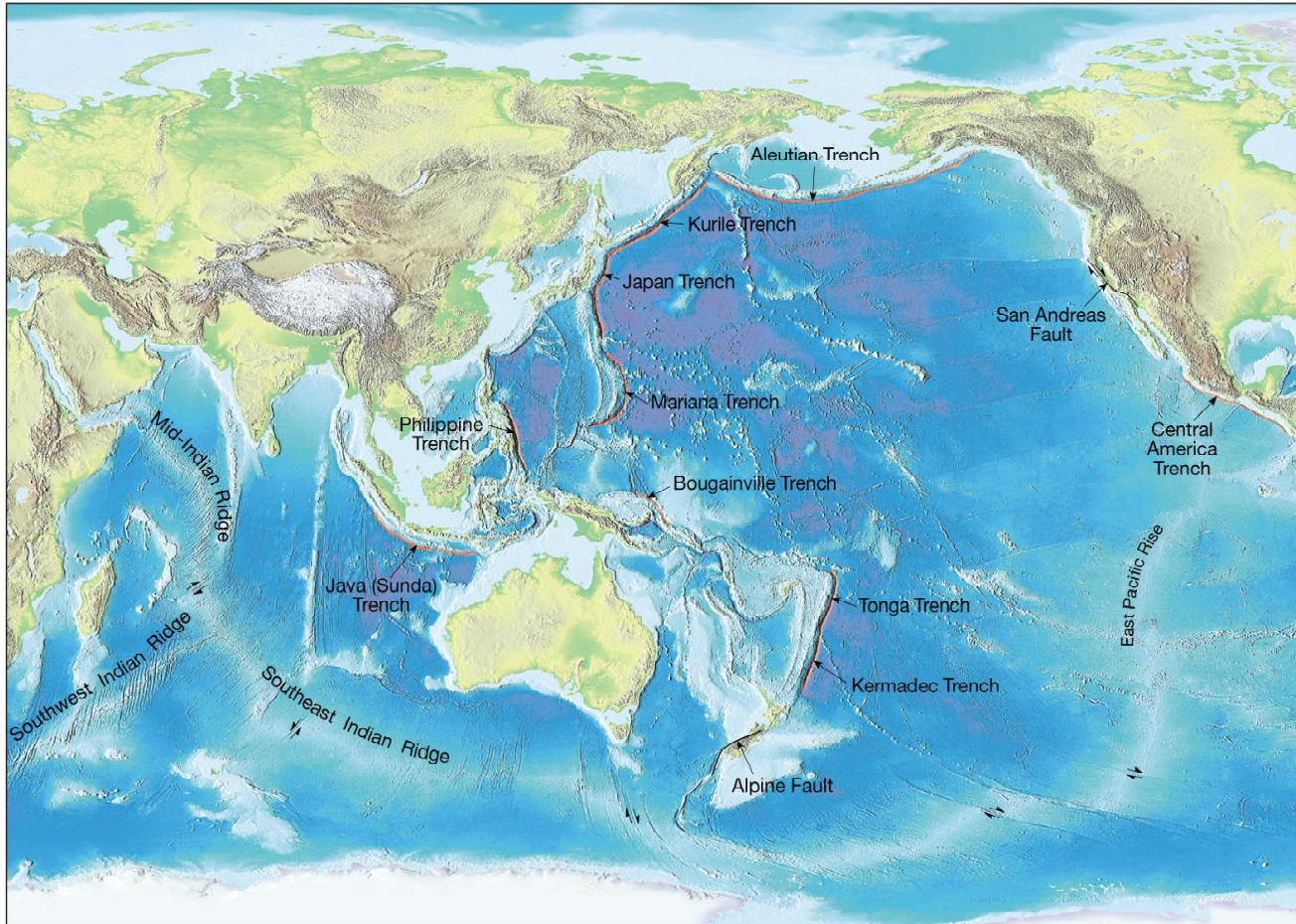


Convergent boundaries: subduction zones

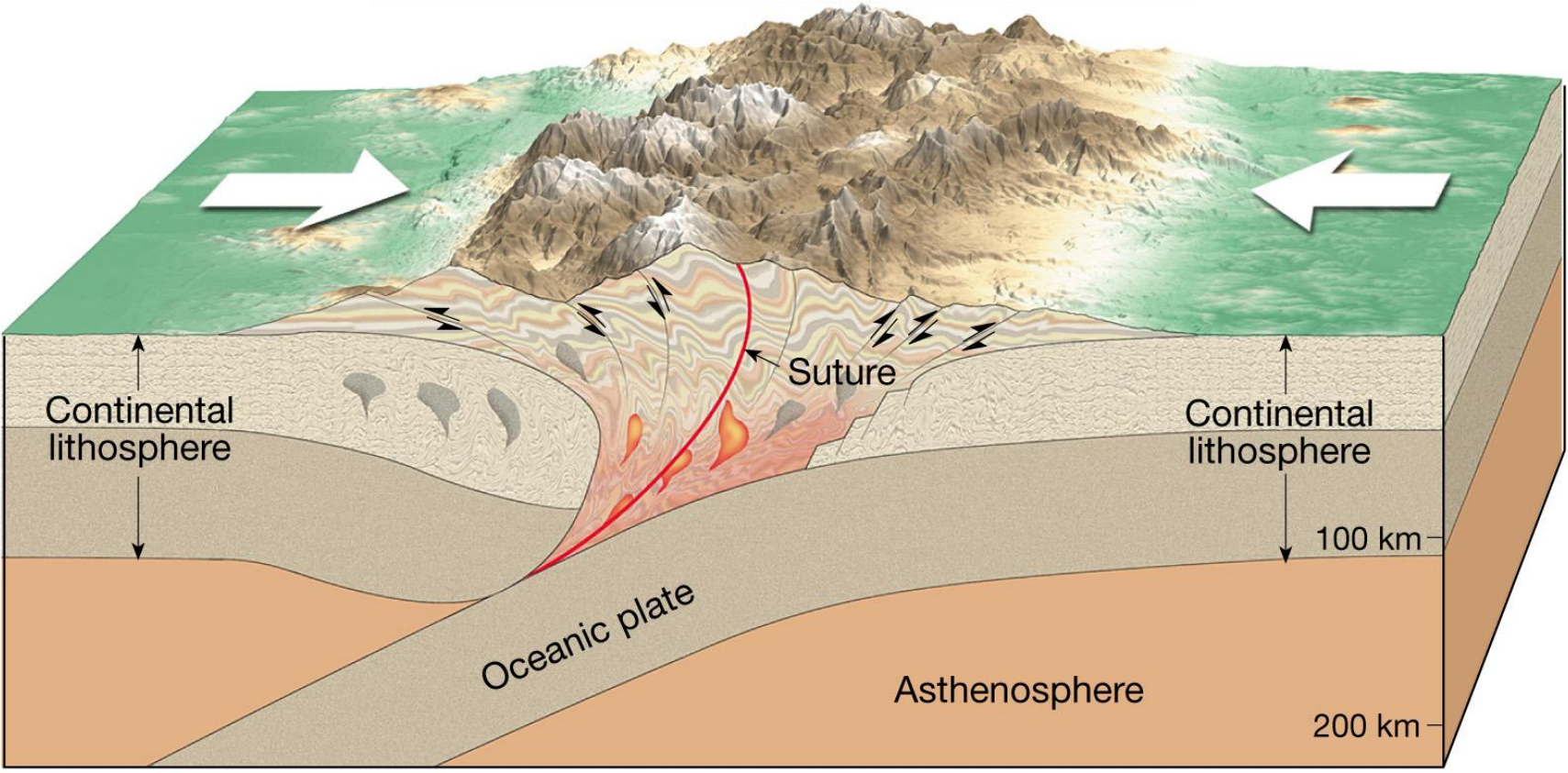


A.

Subduction zones in the Pacific

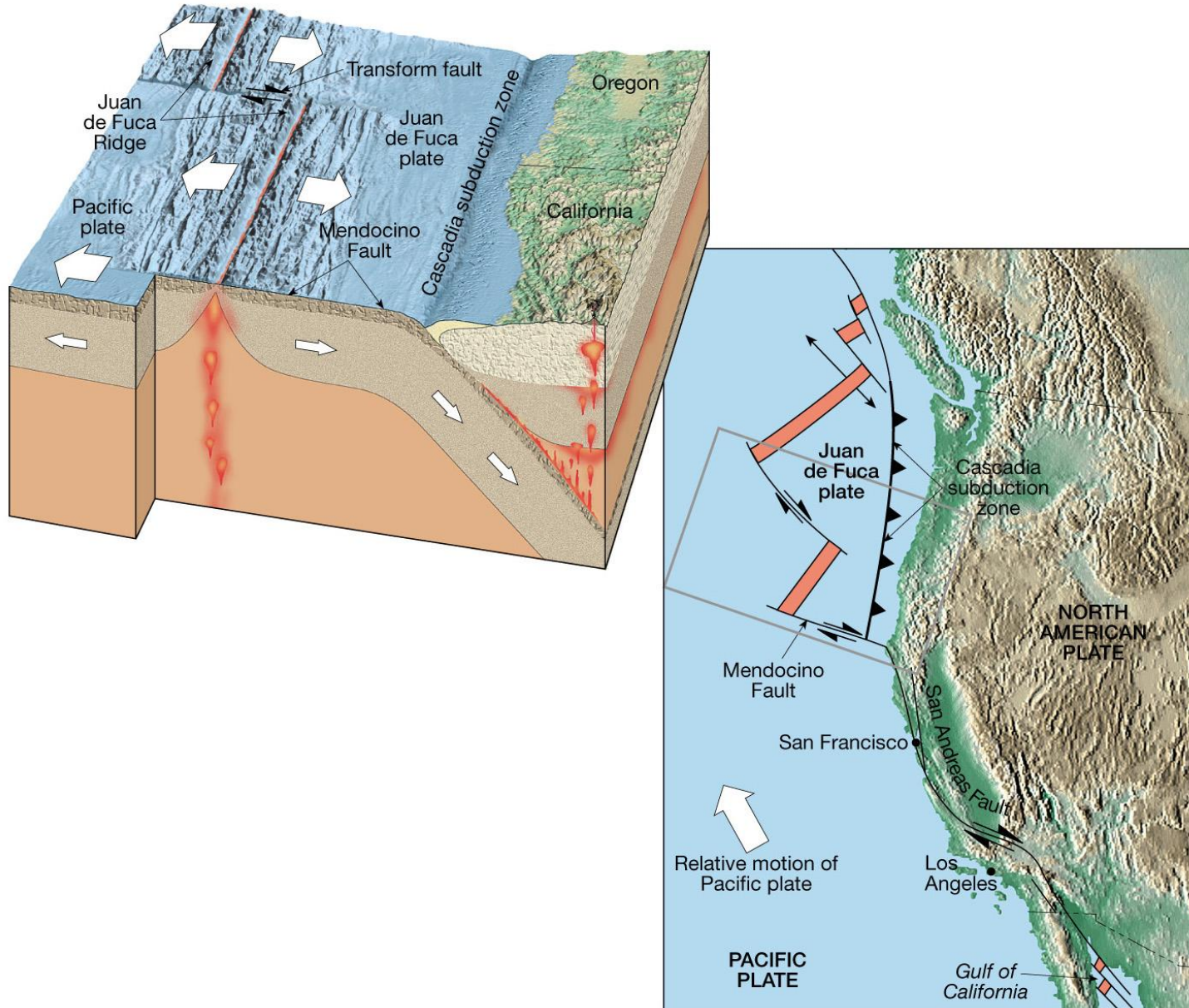


Convergent boundaries: continental collisions



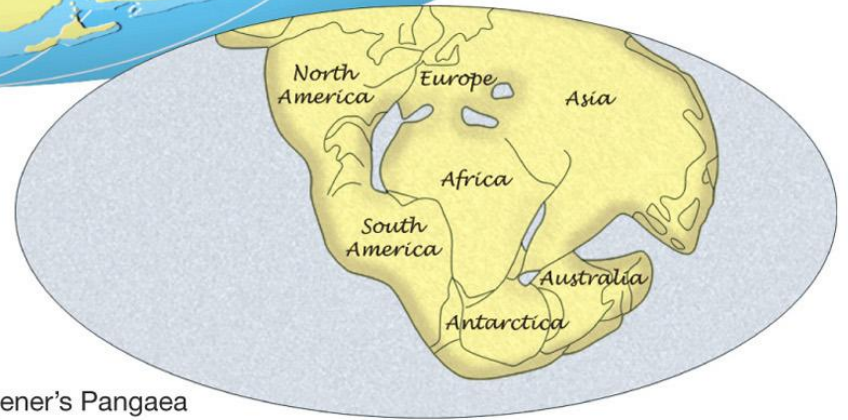
C.

Transform Boundaries





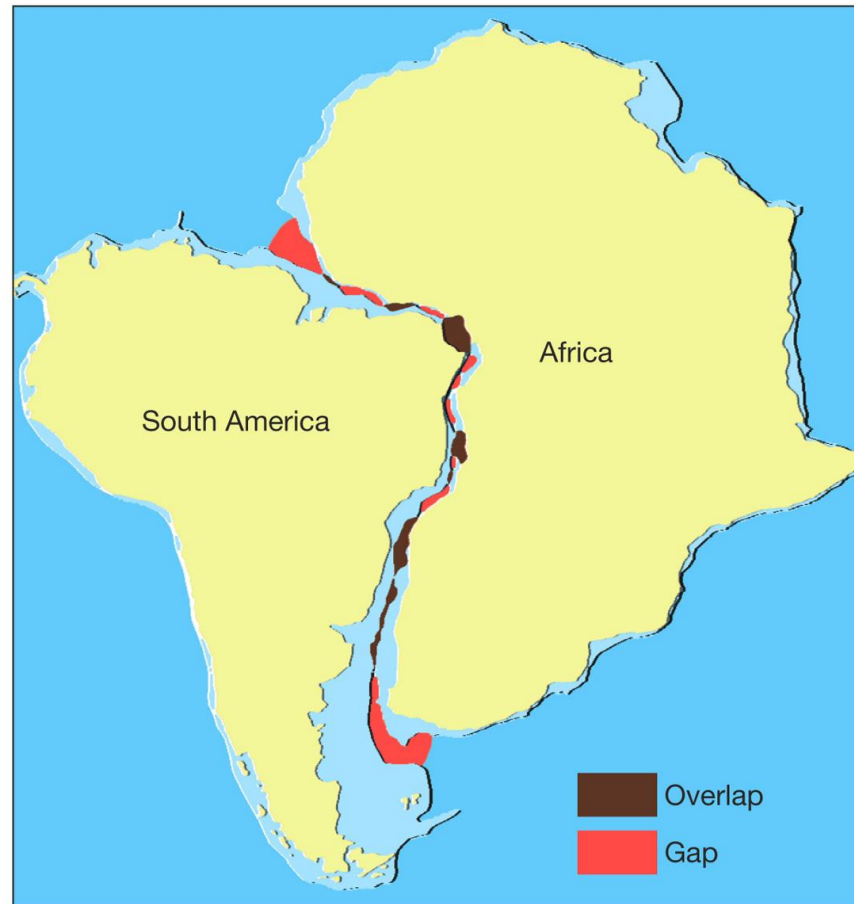
A. Modern reconstruction of Pangaea



B. Wegener's Pangaea

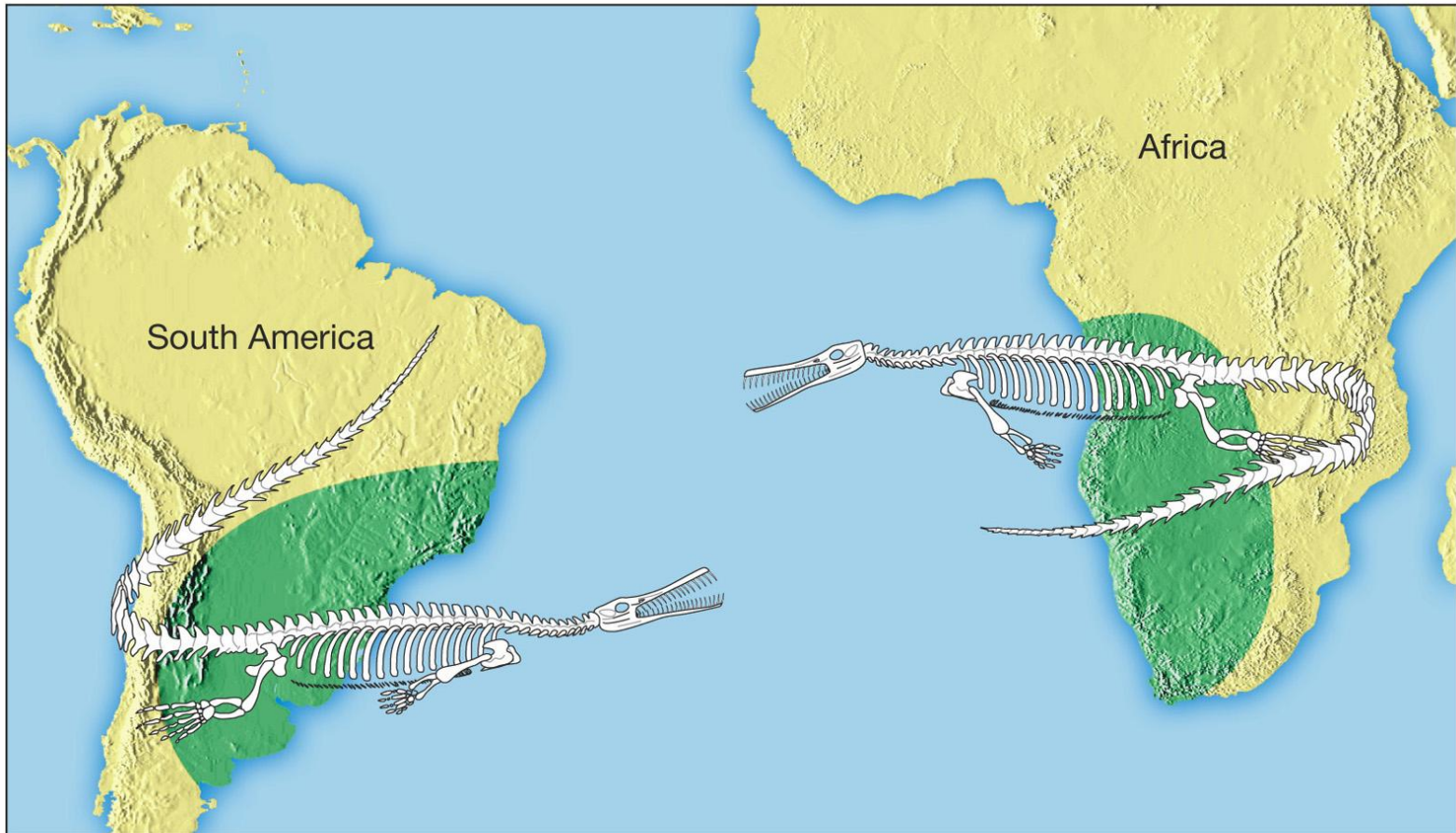
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Fit of Africa and South America



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Similar fossils across oceans

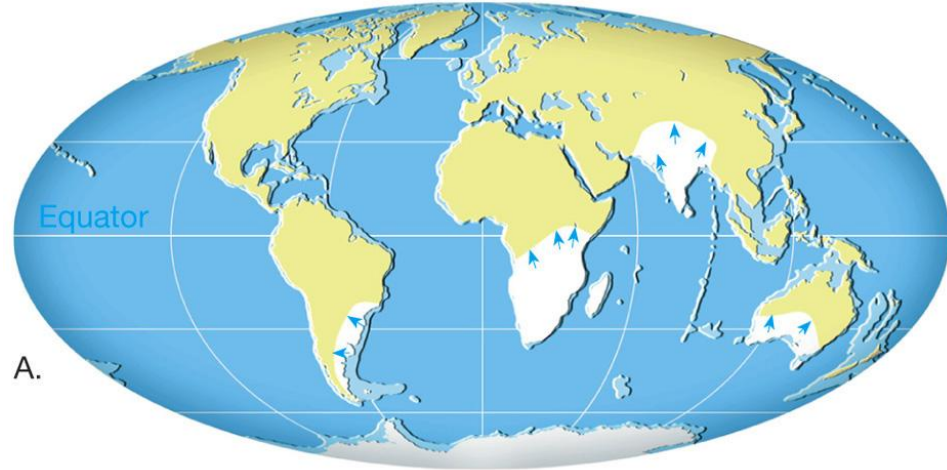


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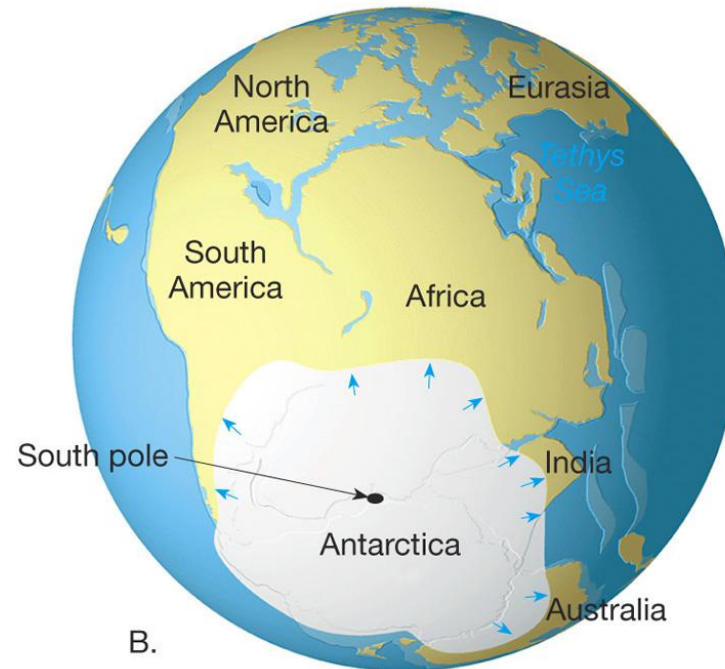
Mountain belts match up across Atlantic Ocean



Ancient glaciated regions make sense if continents were connected



A.

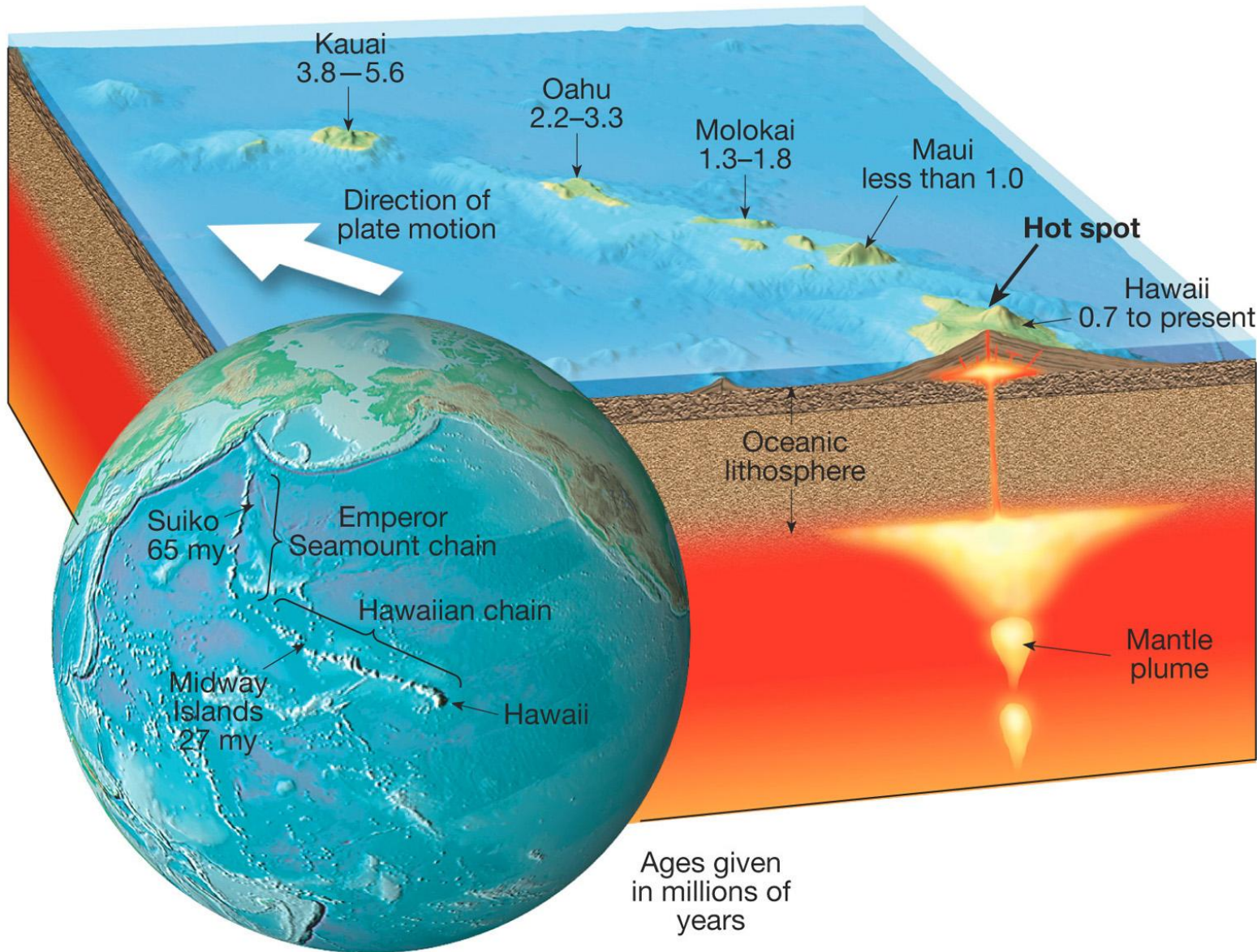


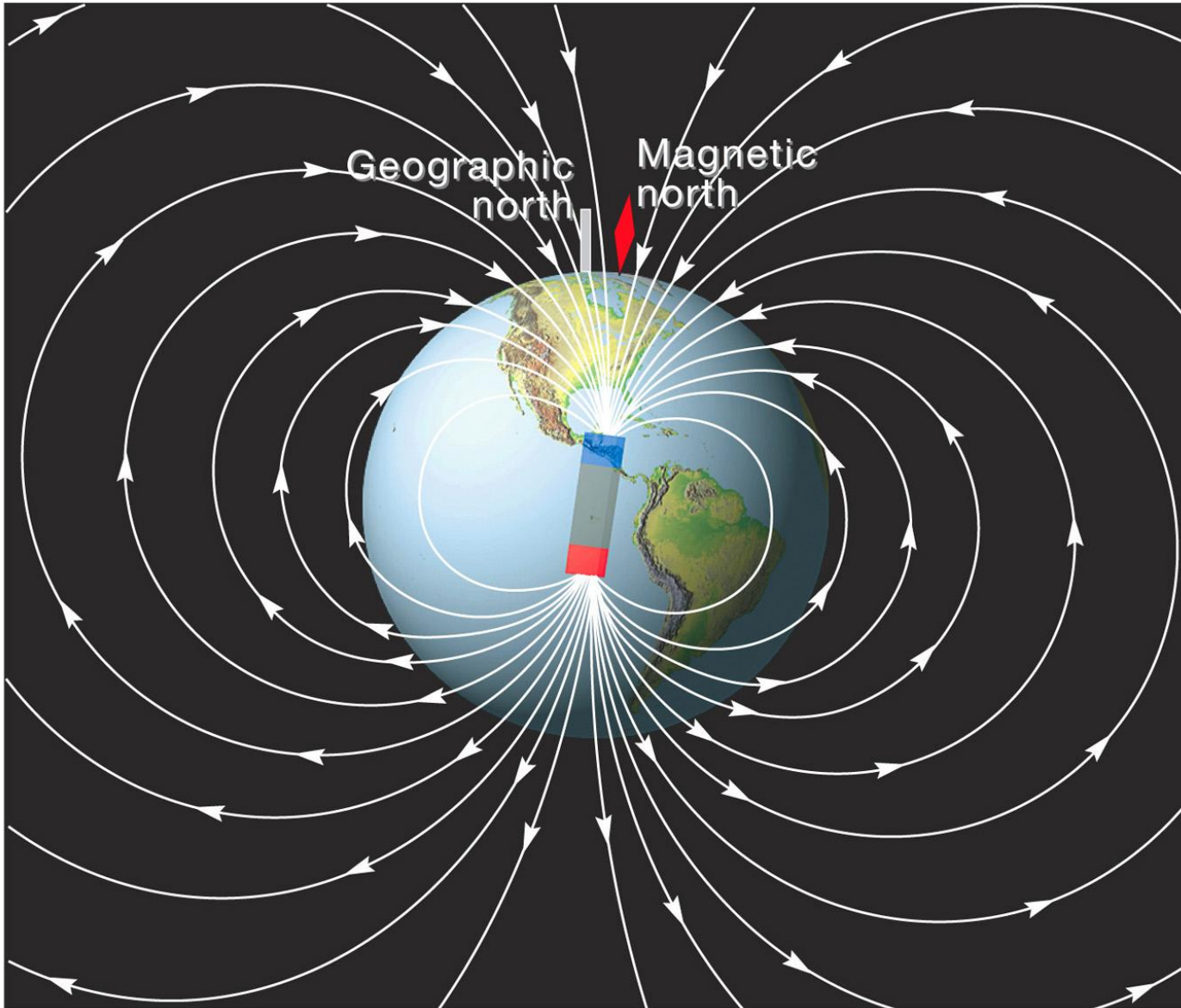
B.

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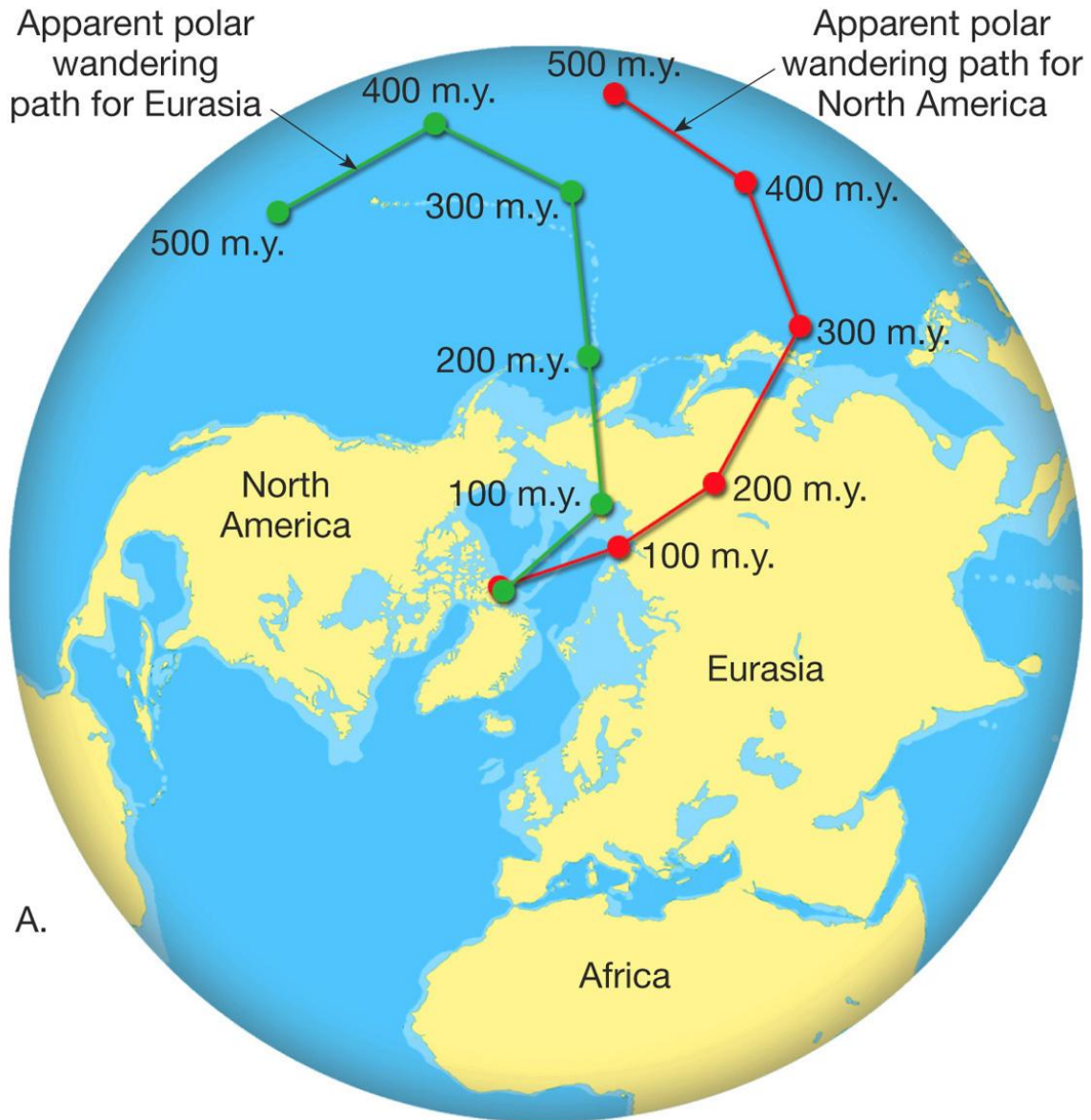
Modern evidence

- Hot spot tracks
- Apparent wander of magnetic north pole
- Ocean floor magnetic anomalies
- Earthquake locations





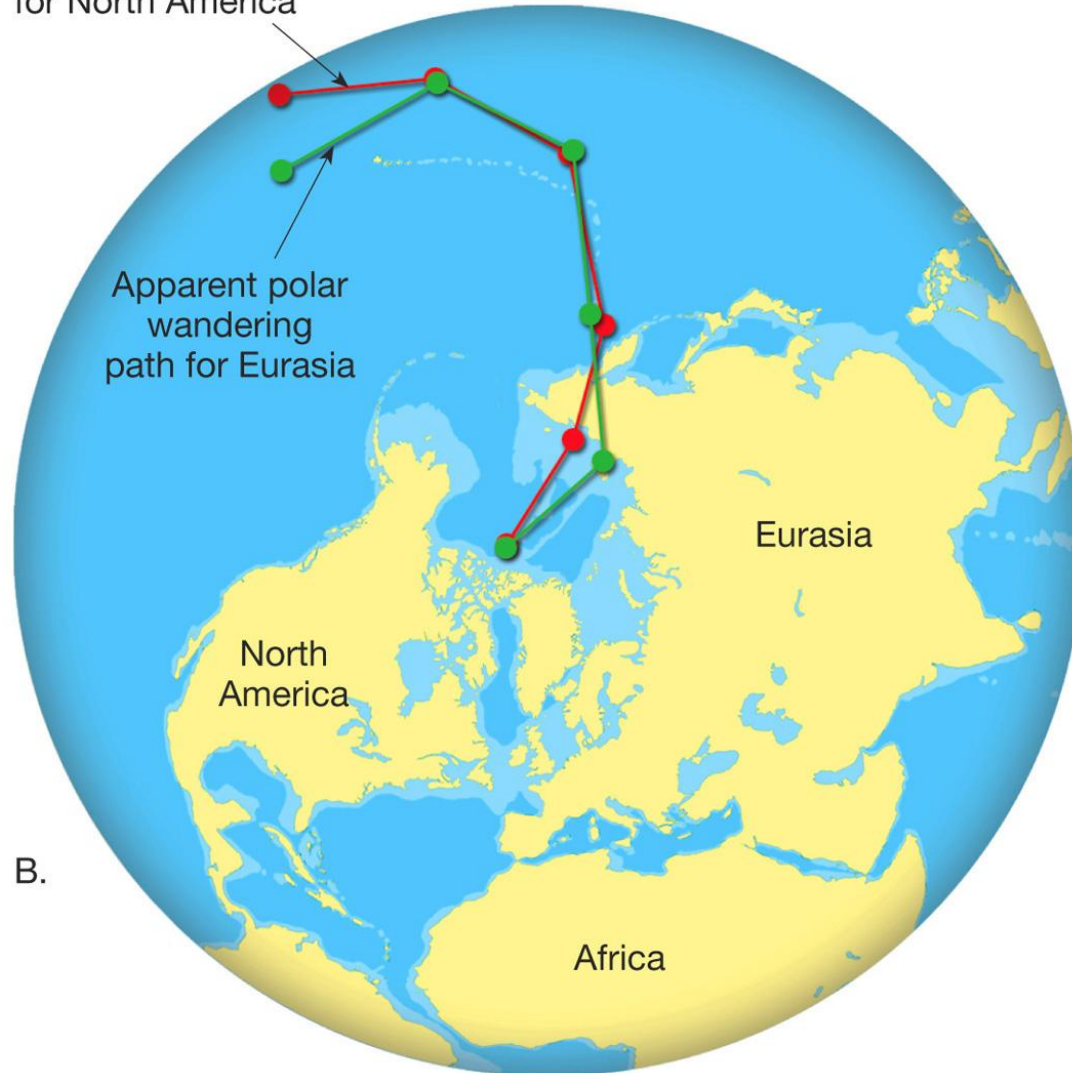
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A.

Apparent polar wandering path for North America

Apparent polar wandering path for Eurasia

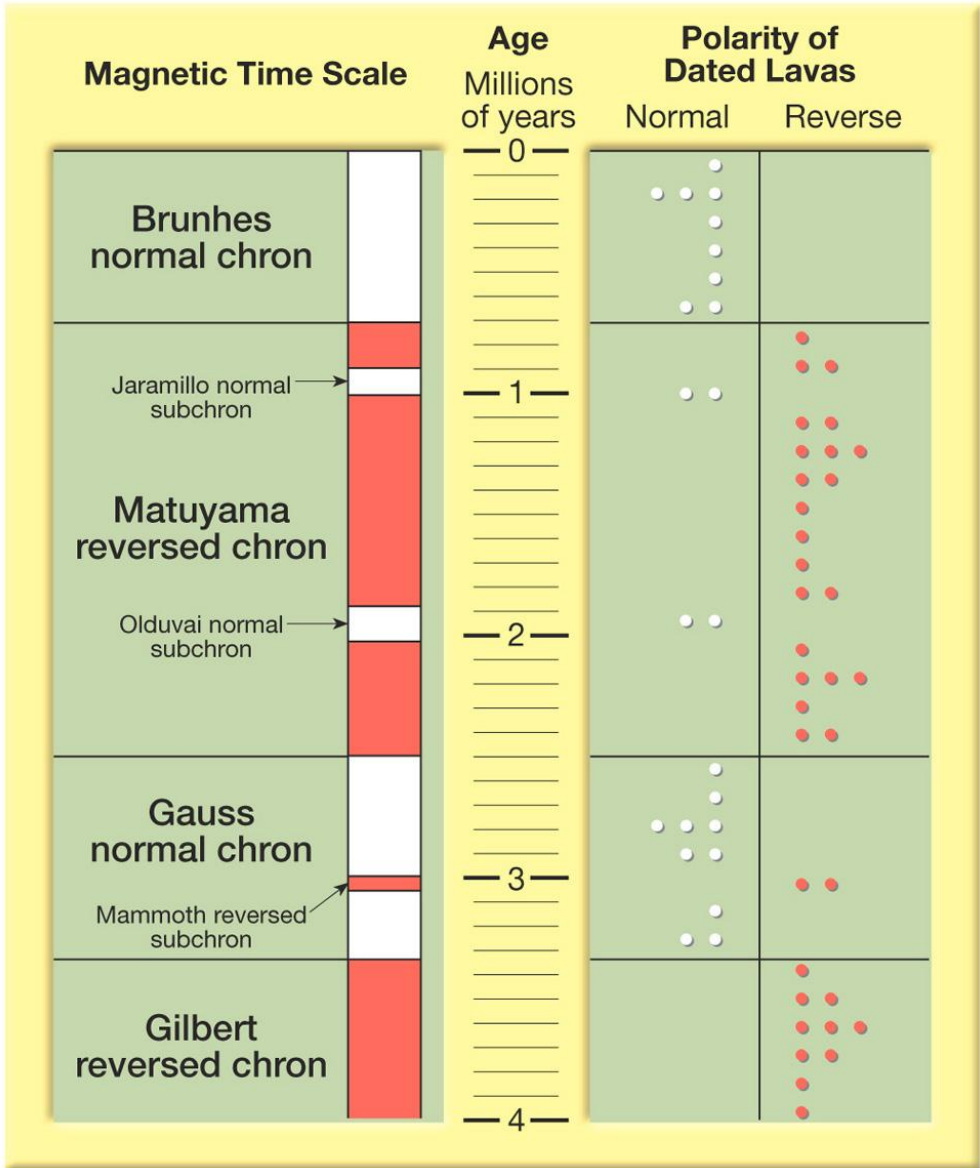


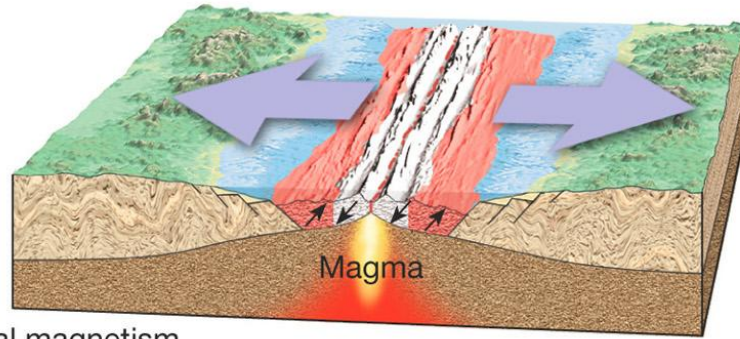
B.



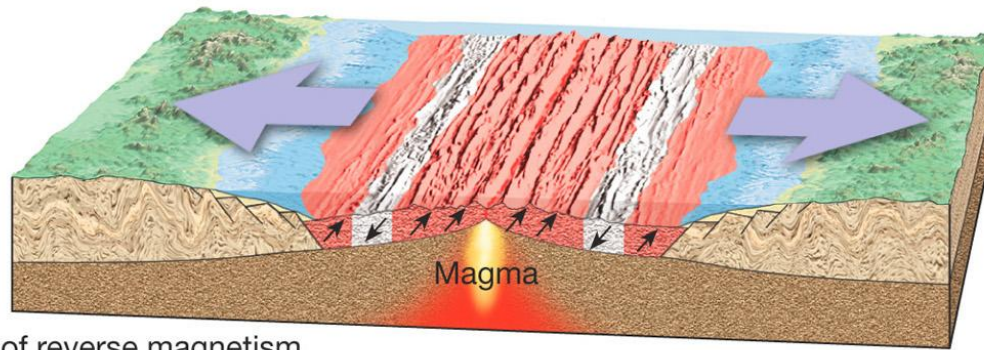
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The earth's magnetic field has actually pointed ***SOUTH*** at various times in the past

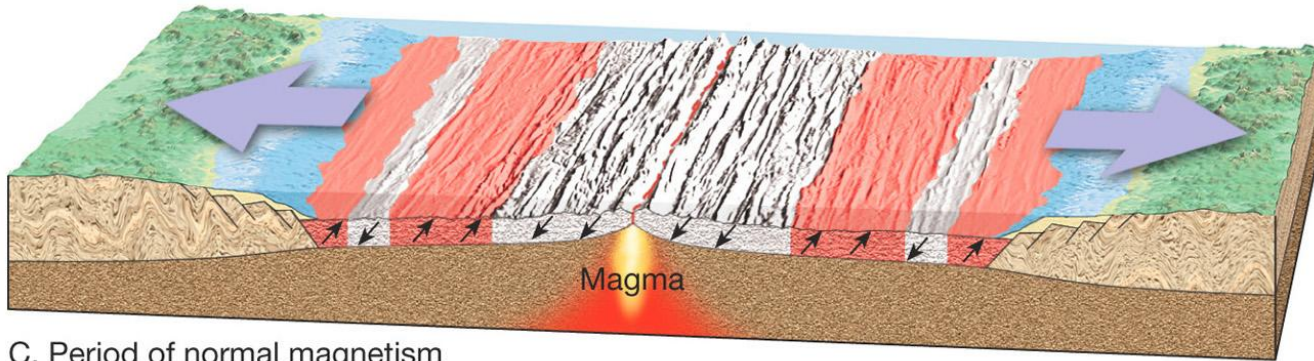




A. Period of normal magnetism



B. Period of reverse magnetism



C. Period of normal magnetism

Tectonic Plates and Earthquakes

