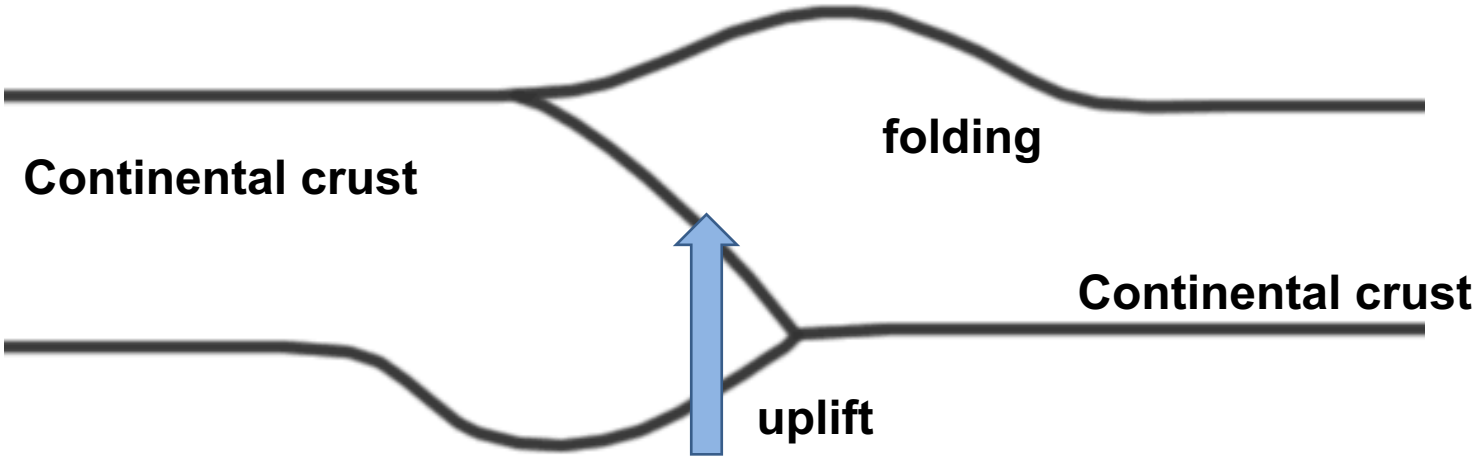
Plate Boundaries

Convergent Boundaries

- plates move together
- crust is destroyed

Convergent Boundaries – continental continental



Features

Convergent Boundaries – continental continental

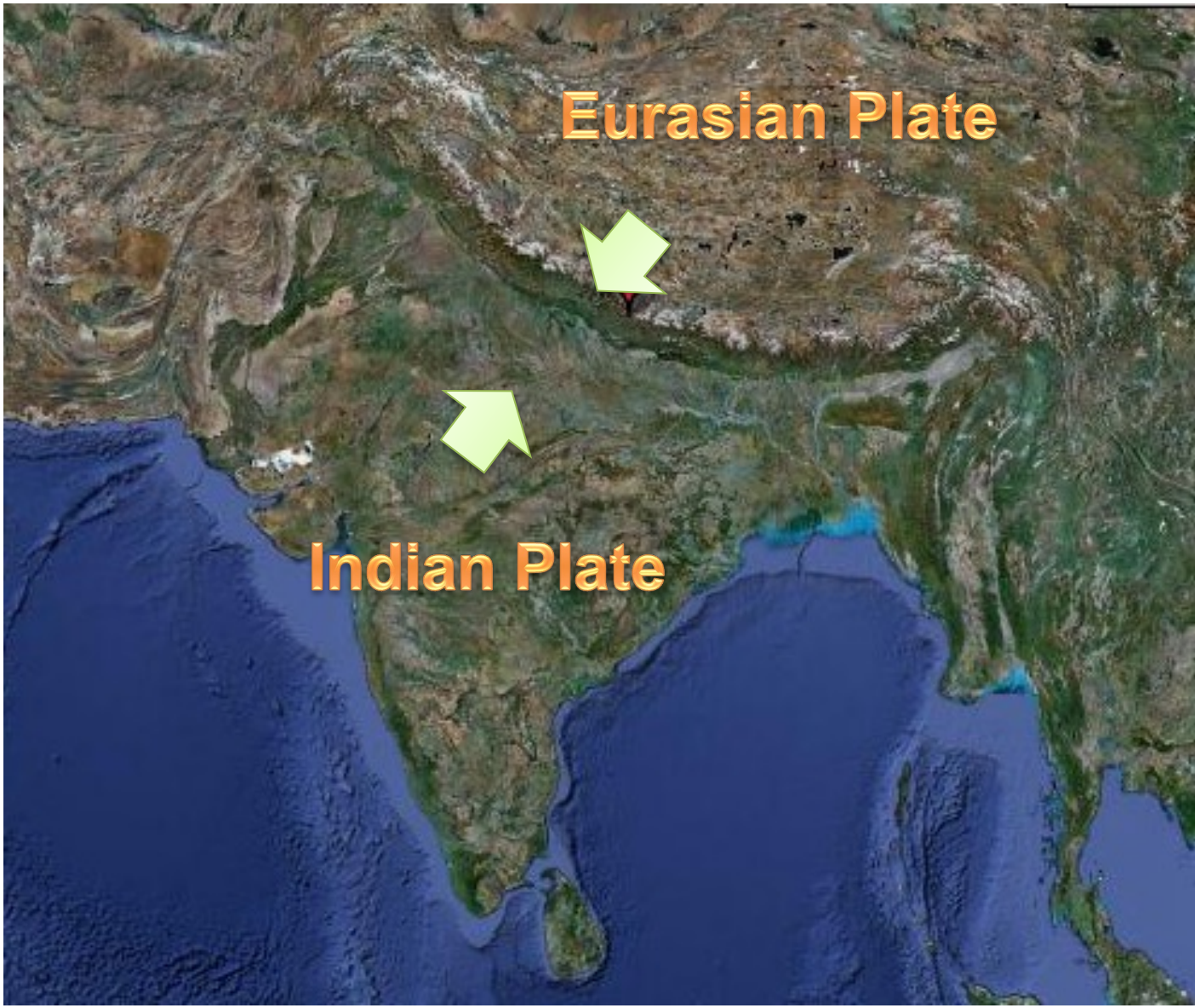
1. neither plate is dense enough to subduct under the other
2. tallest mountains
3. Folds rock layers
4. Large earthquakes

Convergent boundary- continental-continental– Indian and Eurasian Plates

What is this mountain range?

Himalayans

What mountain is in this range?

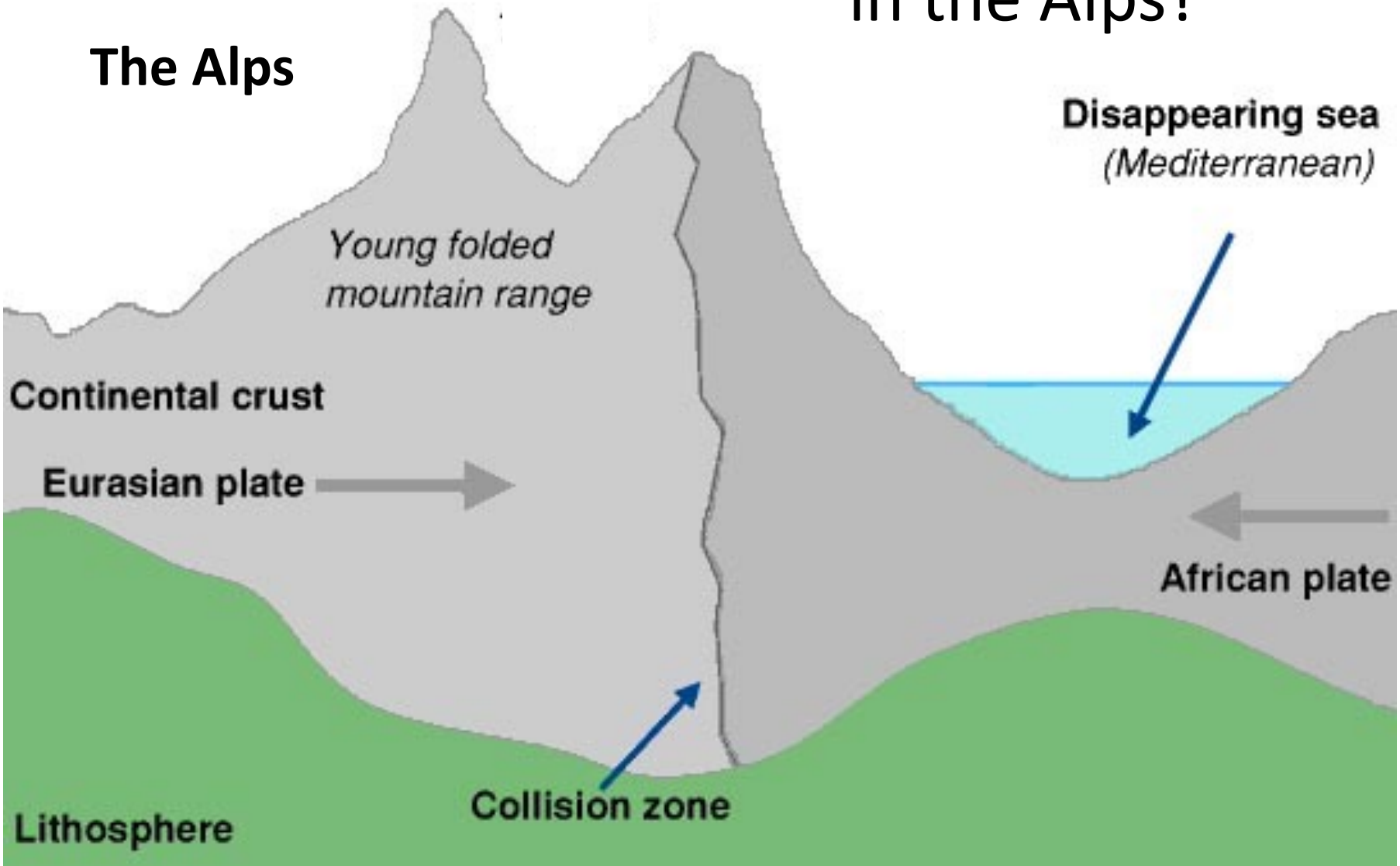


Mount Everest—Earth's tallest mountain

What mountain range do you think this is?

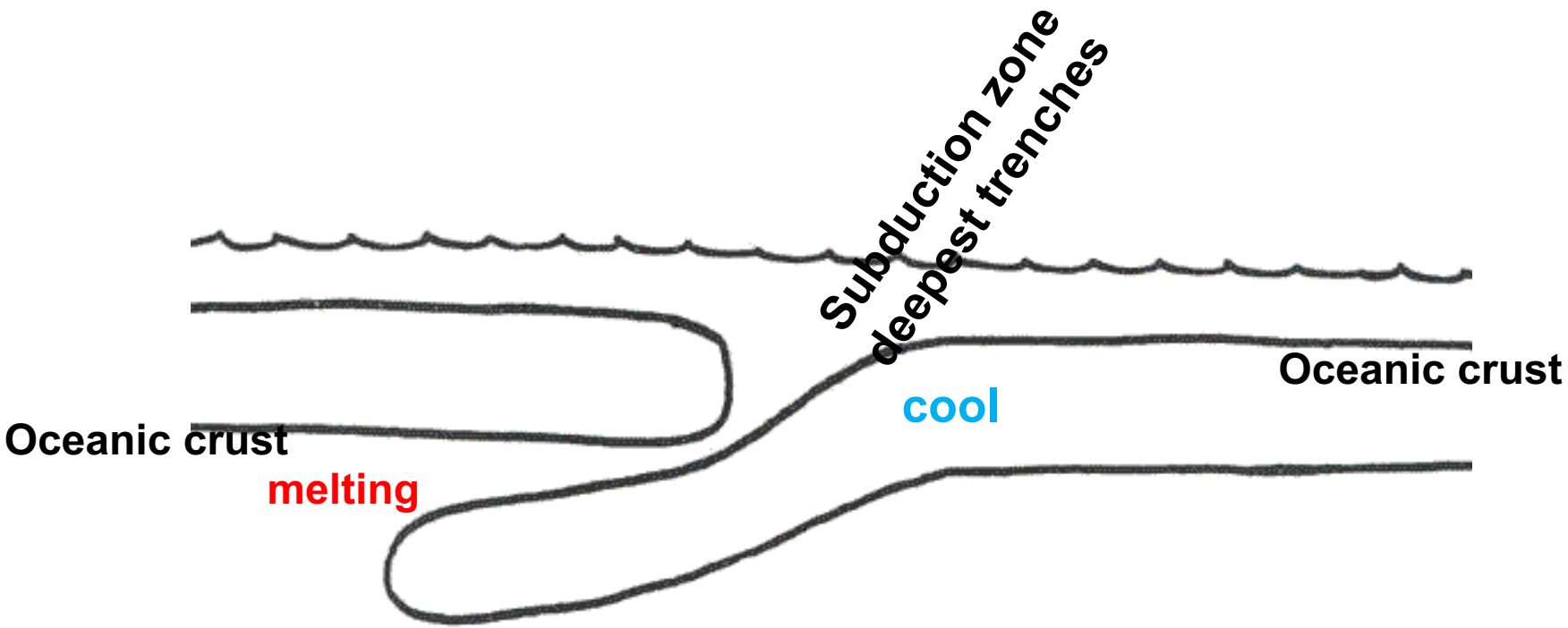
The Alps

Do you know the famous mountain in the Alps?




The Matterhorn

Convergent Boundary – Oceanic & Oceanic



Features

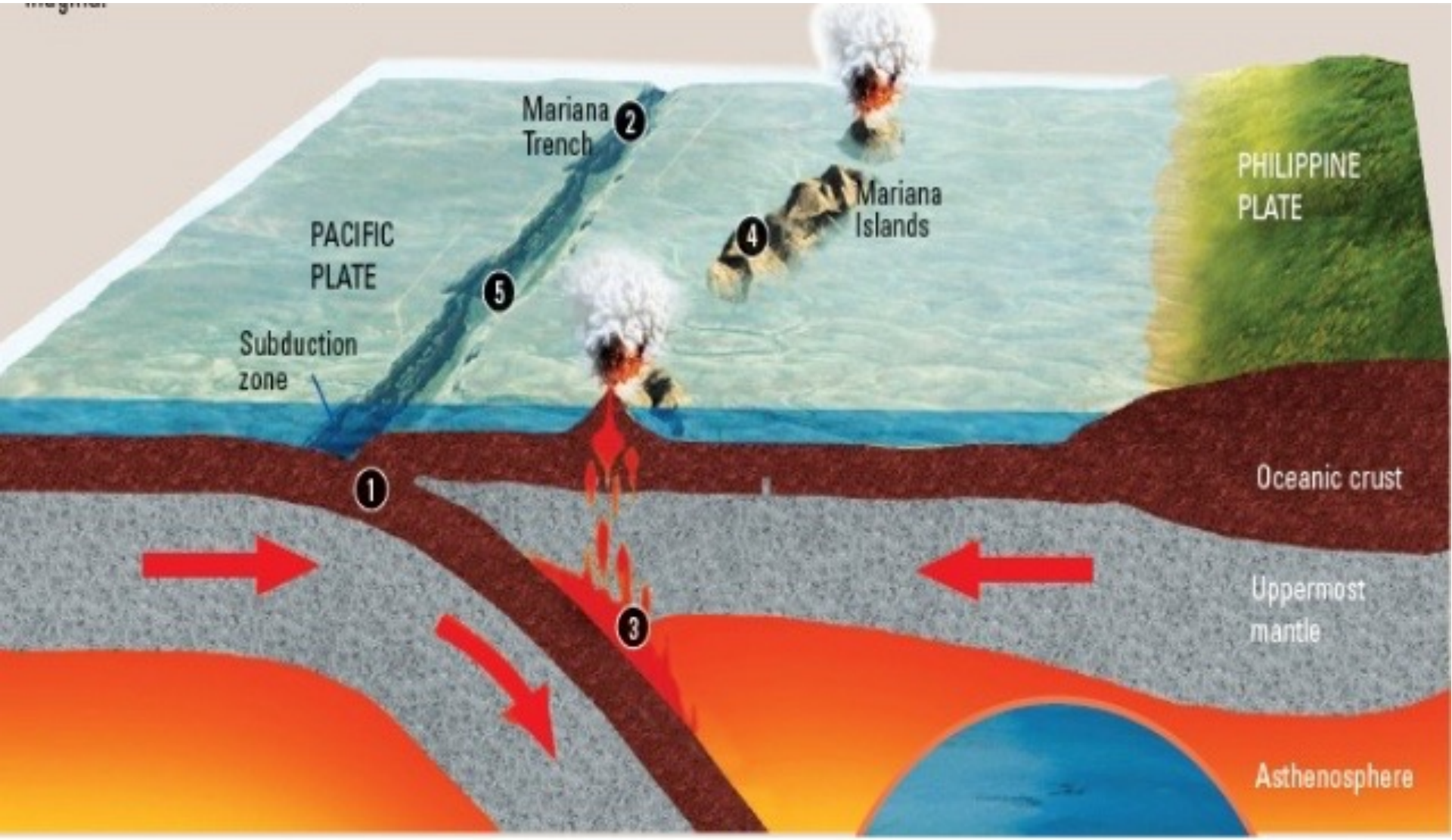
Convergent Boundaries – oceanic-oceanic

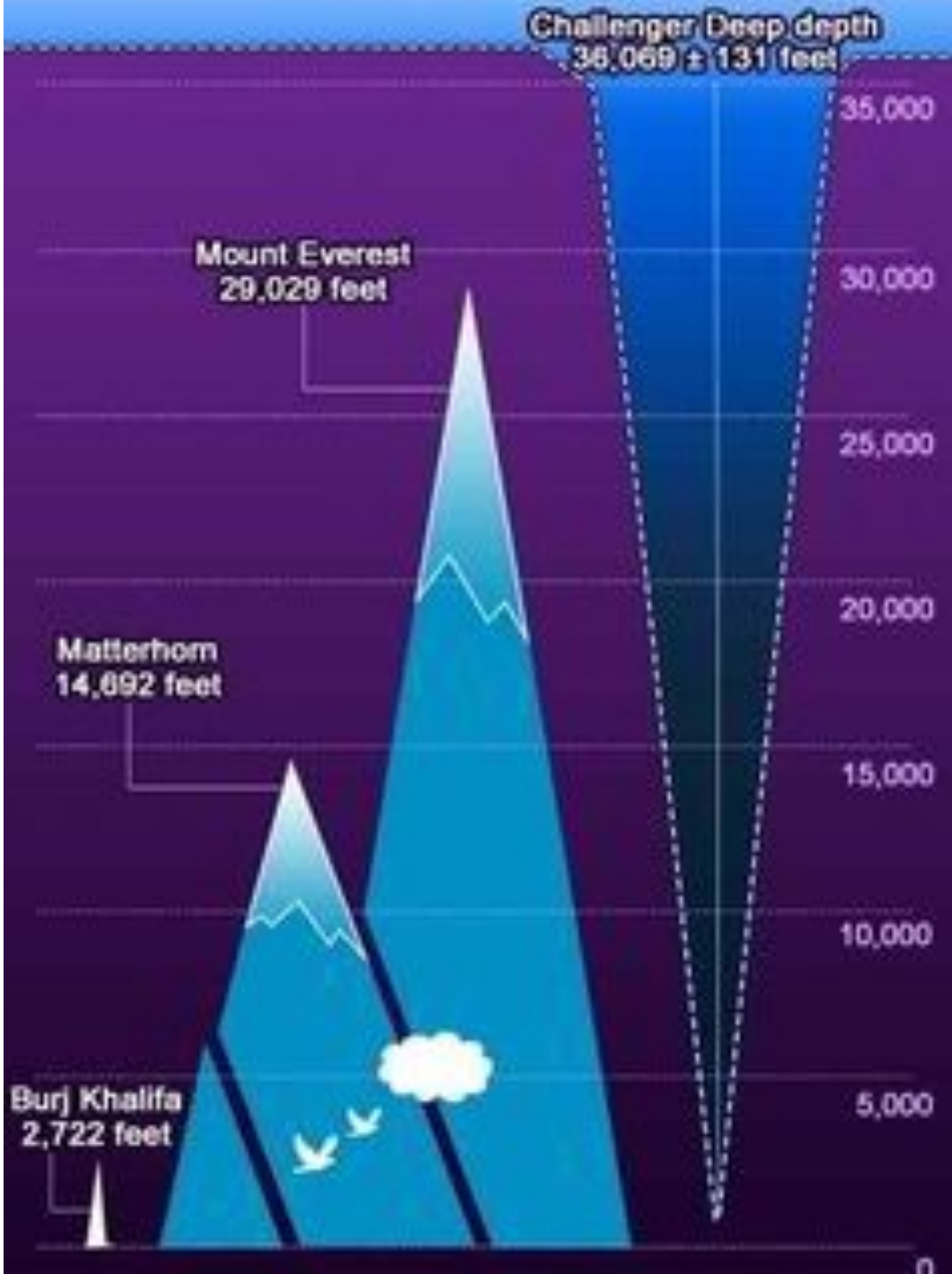
1. denser crust subducts under the other—subduction zone

2. Forms the deepest trenches

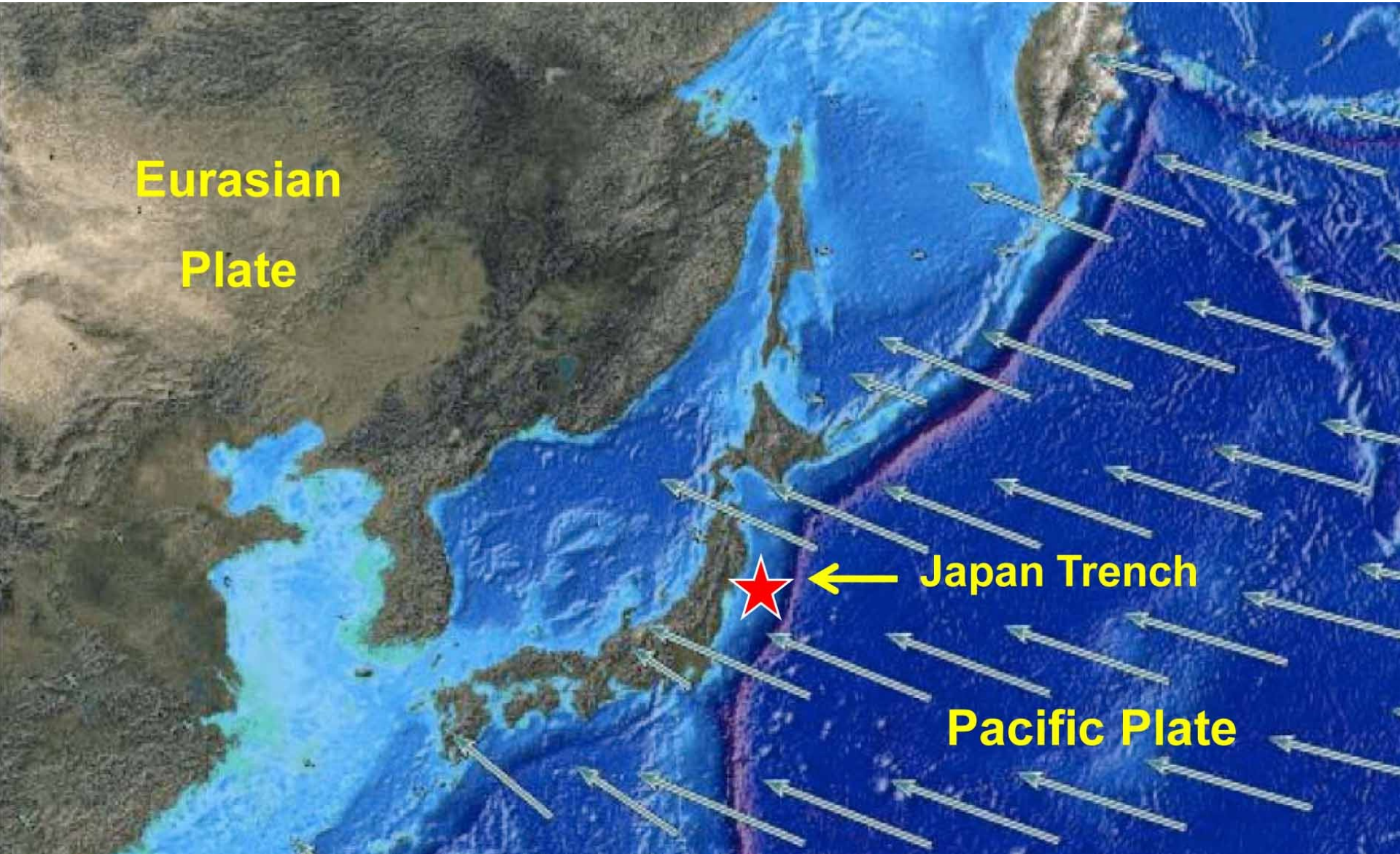
3. volcanic island arcs (island chains)

Pacific Plate converges into Philippine Plate forming Mariana Trench and Mariana Islands

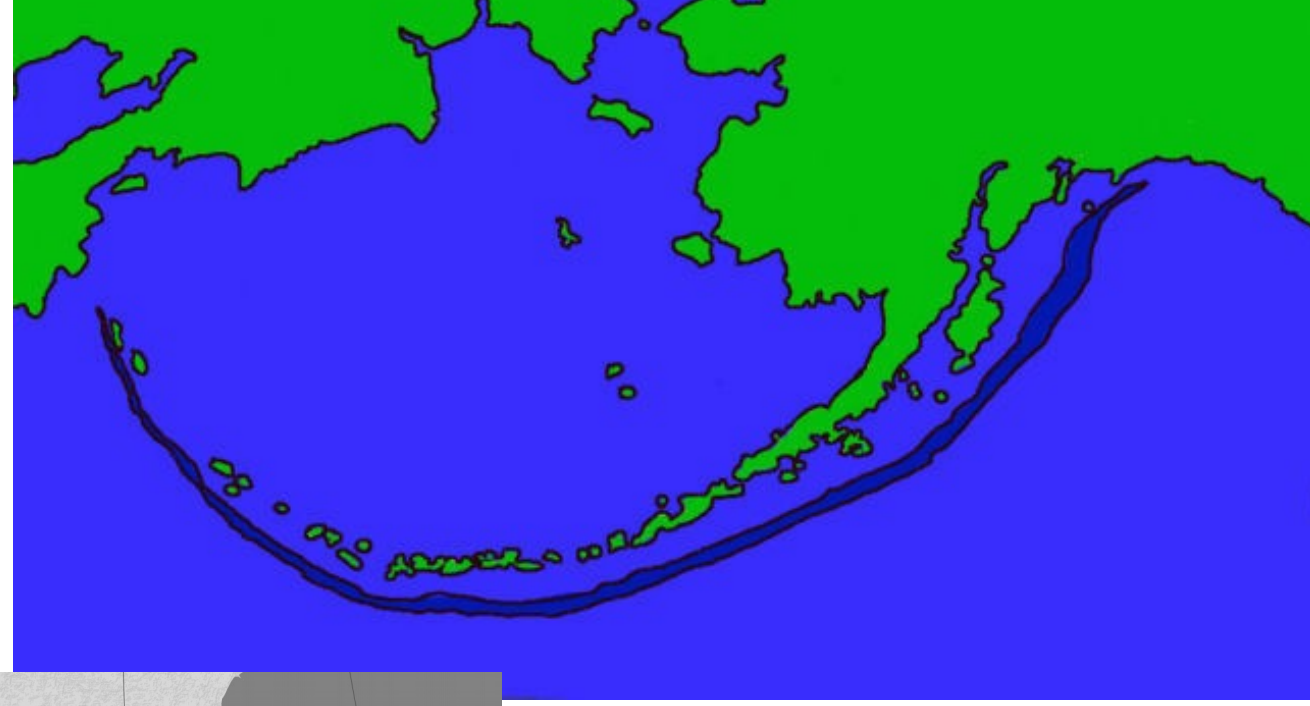


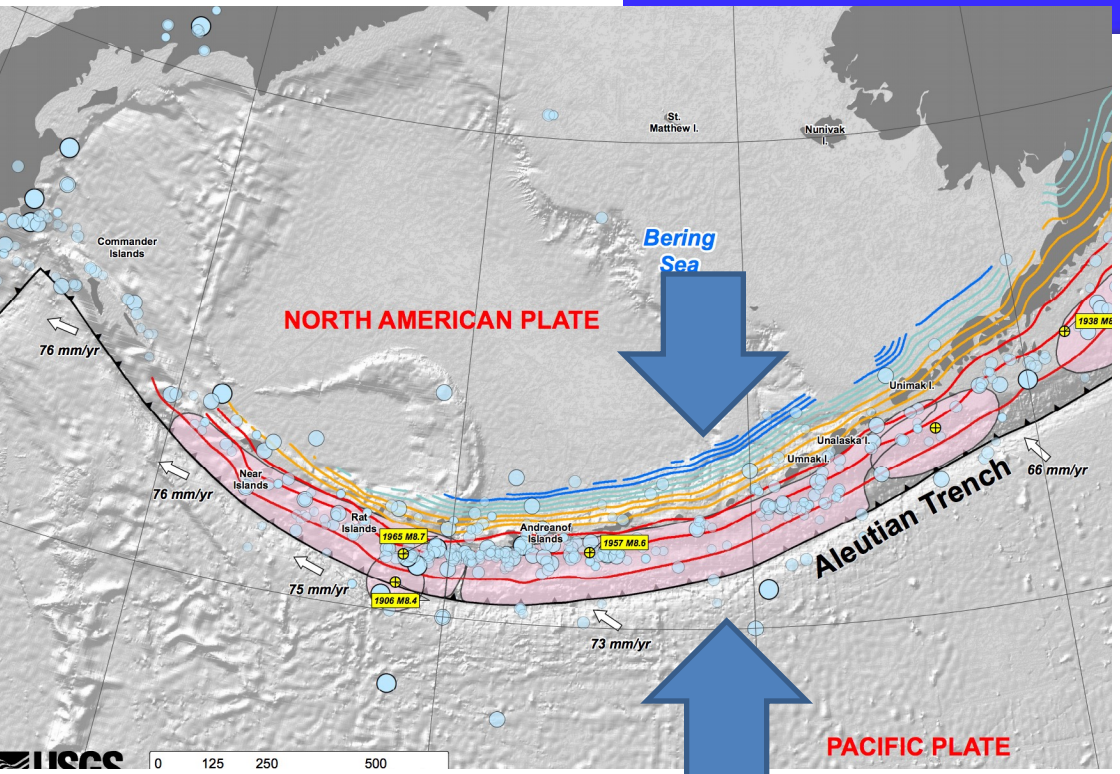

Challenger Deep depth
36,069 ± 131 feet
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Mount Everest
29,029 feet
Matterhorn
14,692 feet
Burj Khalifa
2,722 feet

Japan-Pacific and Eurasian plate converge

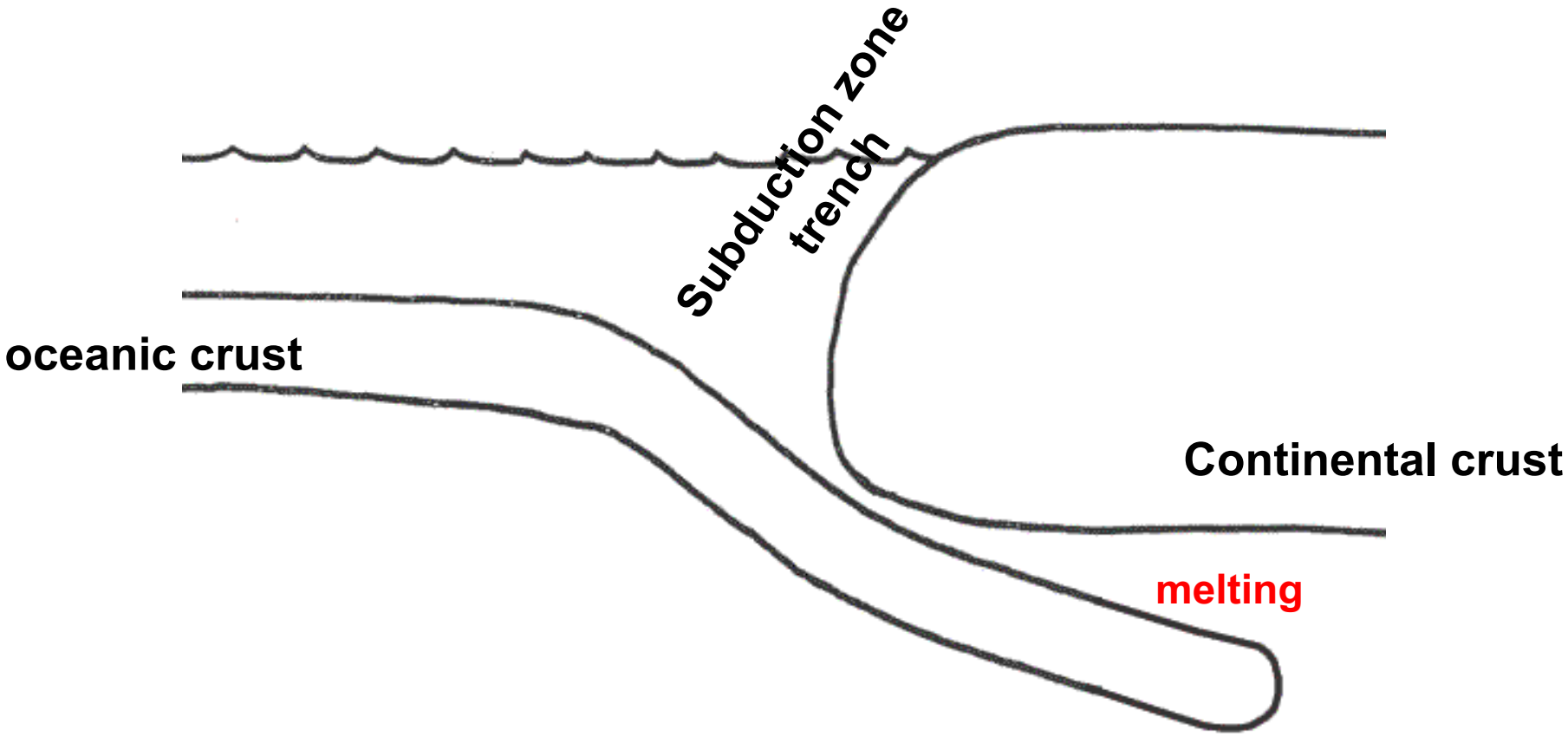


Aleutian Islands--Alaska





Convergent Boundary – Oceanic & Continental



Features

Convergent Boundaries – oceanic-continental

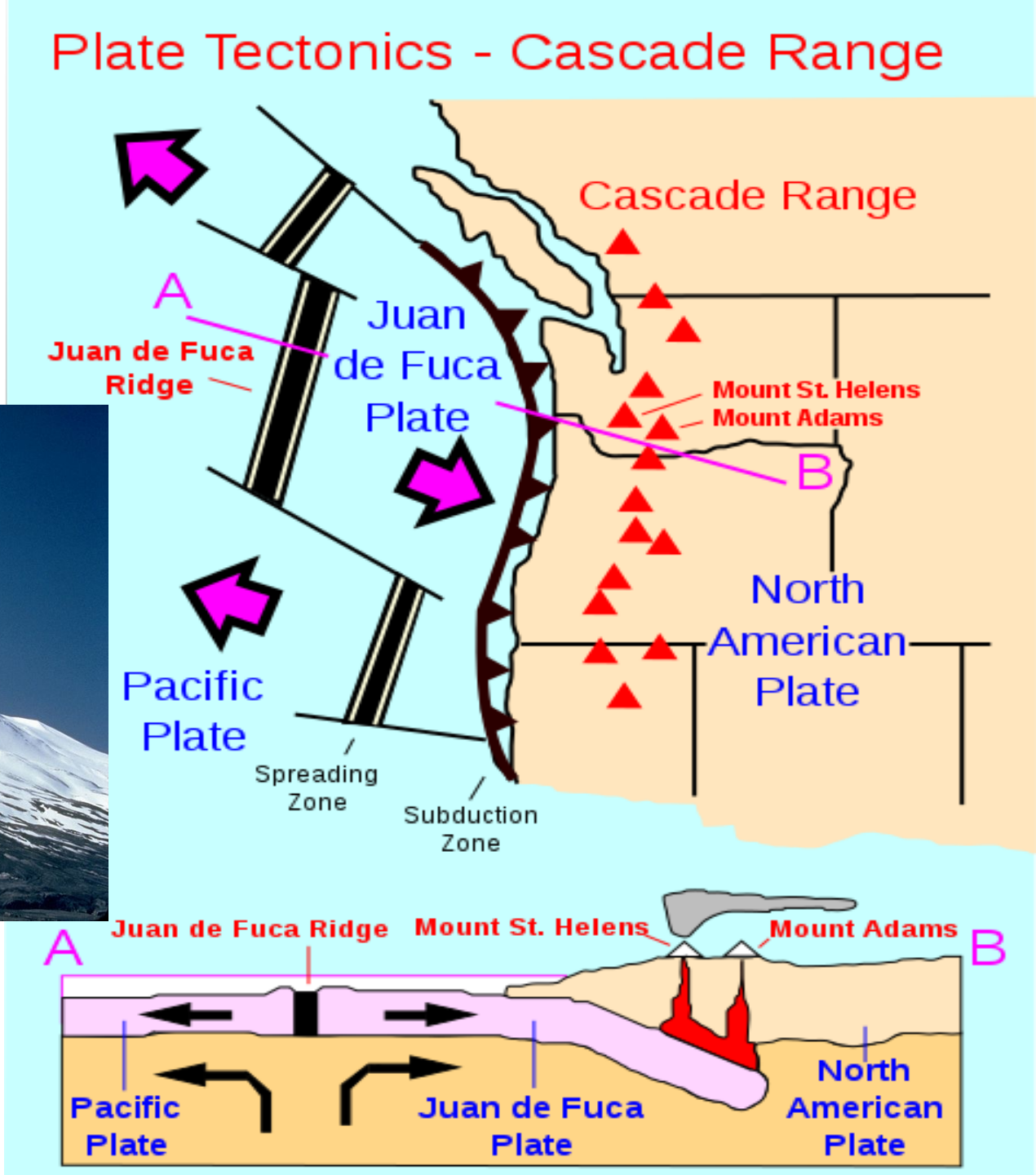
1. the thinner oceanic crust subducts and recycles--subduction zone

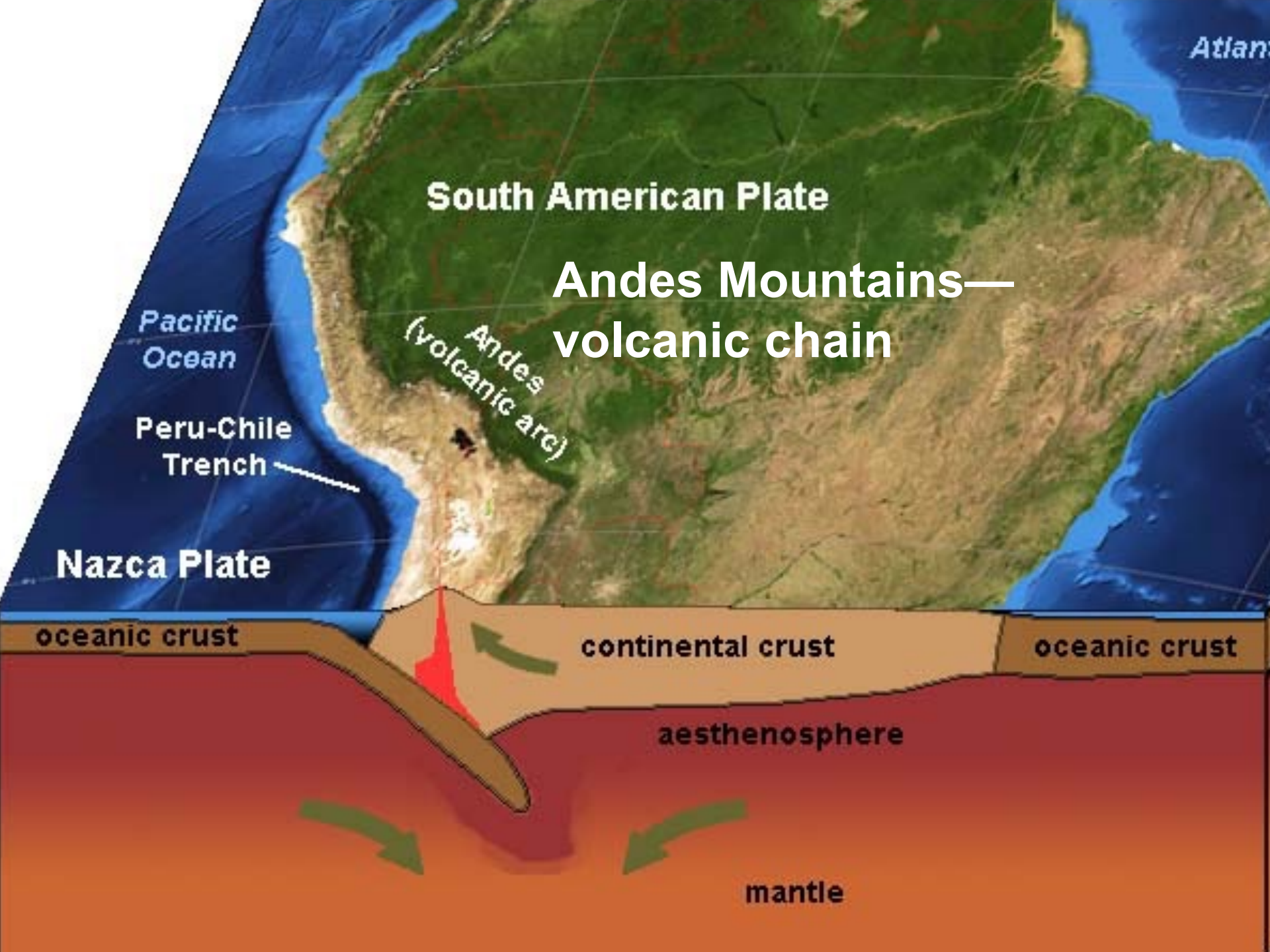
2. ocean trenches just off shore of the continent

3. coastal volcanic mountains

Cascade Mountains

Mount St. Helens

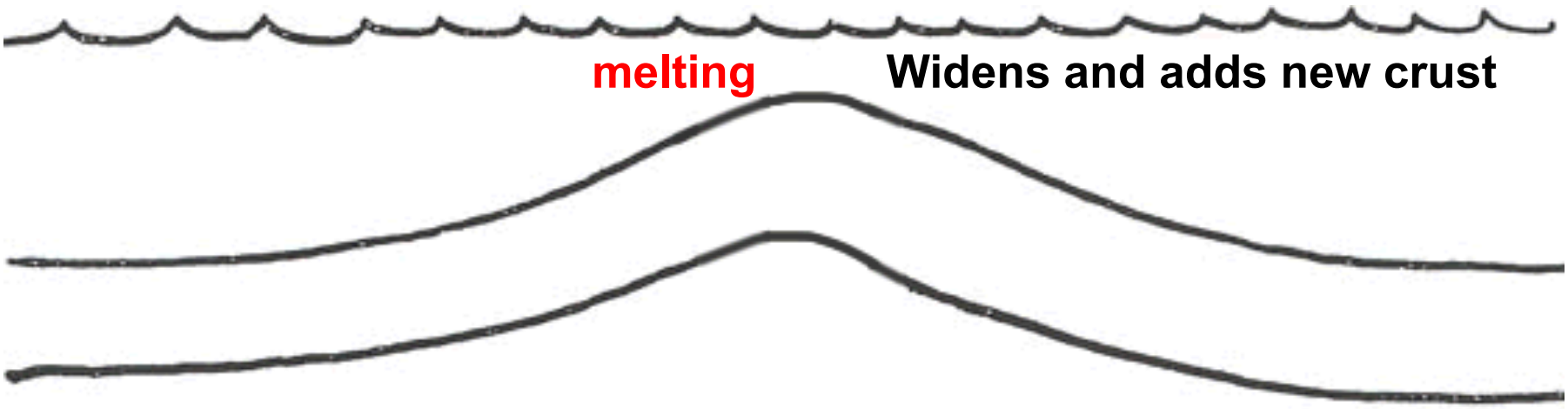



South American Plate
Andes Mountains—
volcanic chain
Pacific
Ocean
Andes
(volcanic arc)
Peru-Chile
Trench
Nazca Plate
oceanic crust
continental crust
oceanic crust
aesthenosphere
mantle

Divergent Boundaries

- plates move apart
- new crust forms

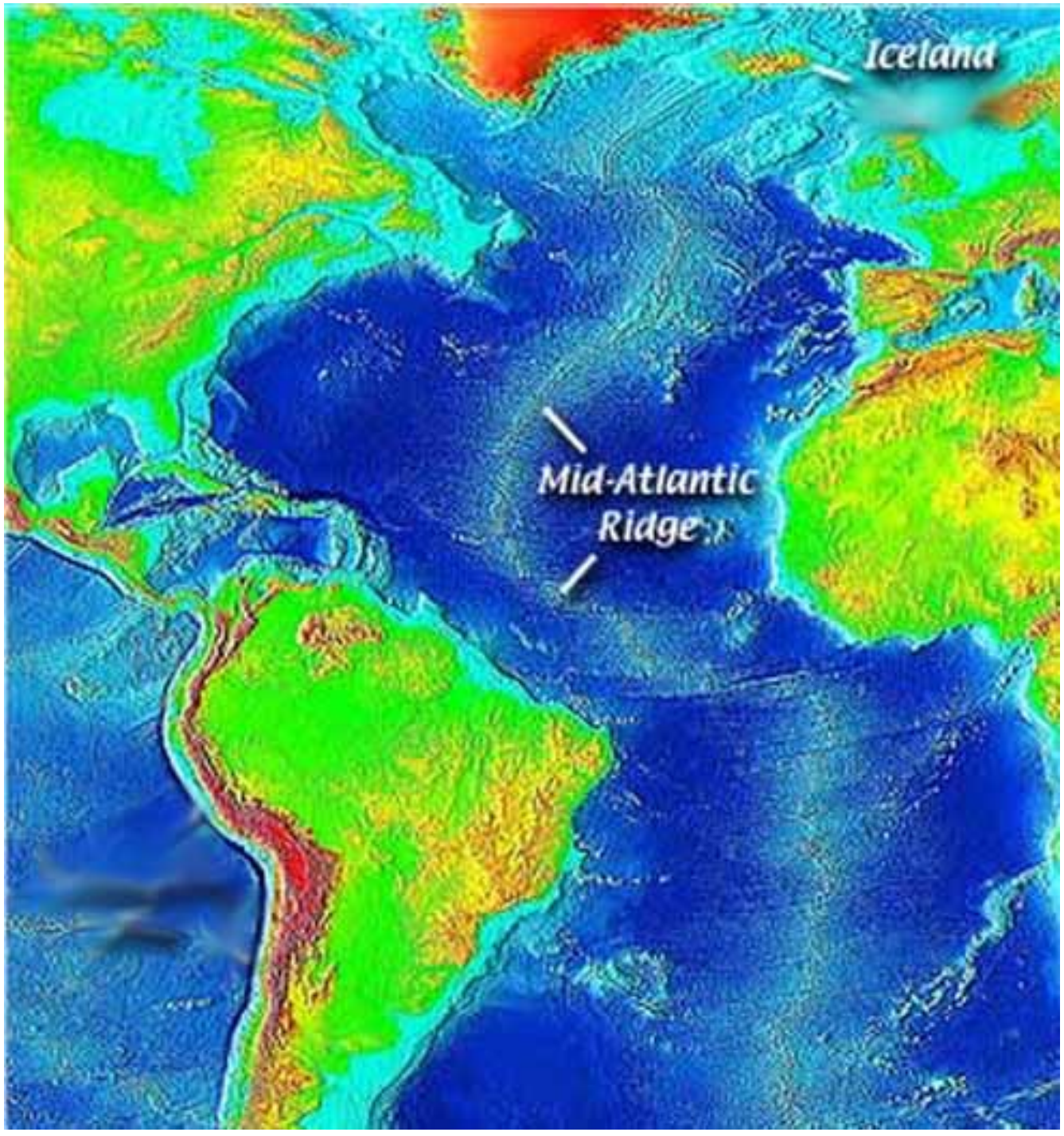
Divergent Boundary – oceanic-oceanic



Features

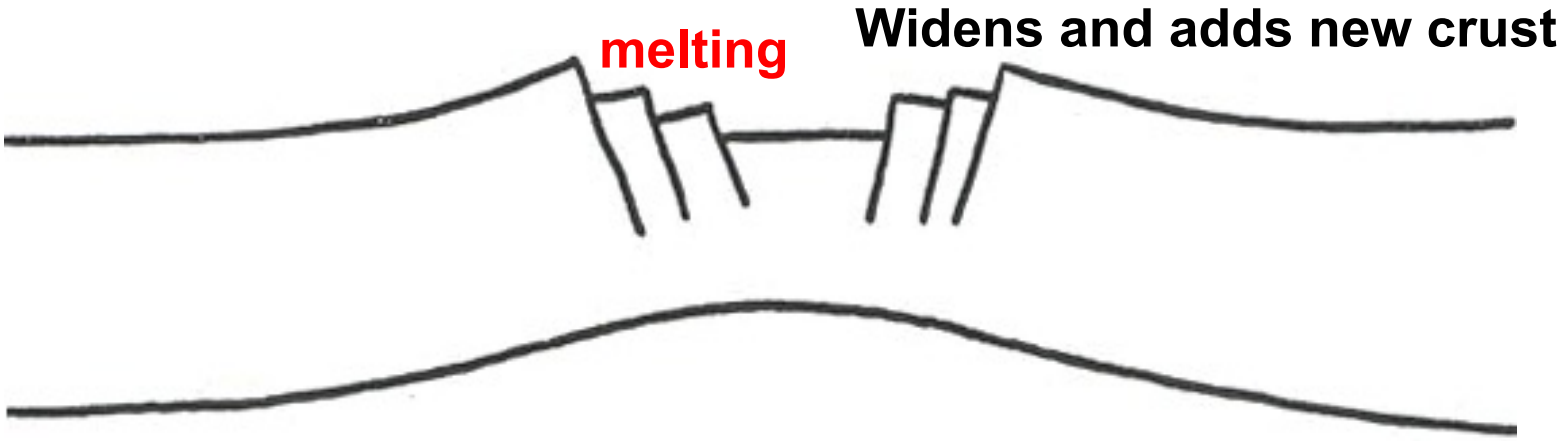
Divergent Boundary – oceanic-oceanic

1. forms mid-ocean ridge
2. widens the ocean basin--creates new ocean floors
3. submarine mountain ranges
4. earthquakes


Iceland
Mid-Atlantic
Ridge


© Alexander Mustard / Solent

Divergent Boundary
Continental - Continental



Features

Divergent Boundaries – continental

1. forms rift valley
2. widens and creates new continental crust
3. sometimes fills with water as a lake sea
4. sometimes volcanic activity
5. earthquakes

African Rift Valley

African Rift Valley


30°E
40°E
20°N
20°N
ARABIAN PLATE
Red Sea
NUBIAN PLATE
Gulf of Aden
Afar
10°N
10°N
Ethiopian Rift
Eastern Branch
SOMALIAN PLATE
0°
0°
Kenya Rift
Western Branch
10°S

Divergent Boundary Iceland

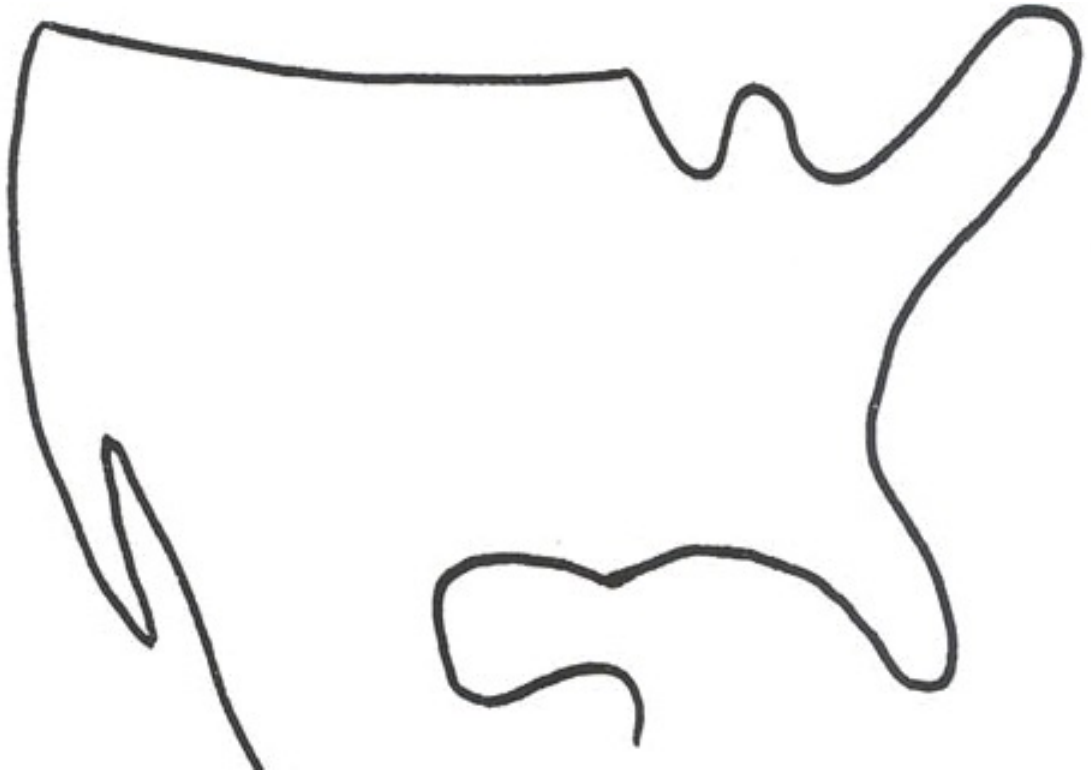
Iceland


Iceland

Transform Boundaries

- plates slide past each other
- causes faults and earthquakes
- crust not created or destroyed

Transform Boundary – San Andreas Fault

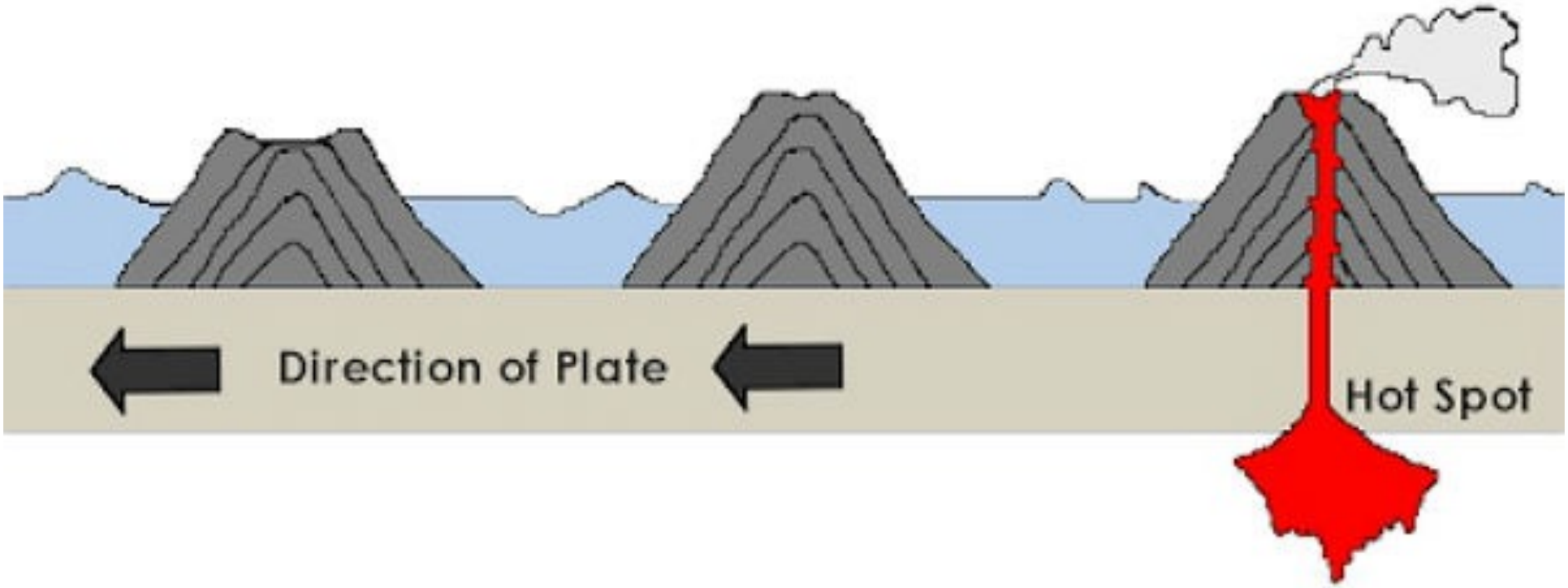


www.geology.com

Hot Spots

- Used to track plate movement
- a chamber of hot, molten rock in the mantle
- the molten rock rises in plumes or thin columns
- Forms volcanoes
- When the plate moves, a new volcano forms

Hot Spots



examples

Hot spots

1. Hawaii
2. Yellowstone