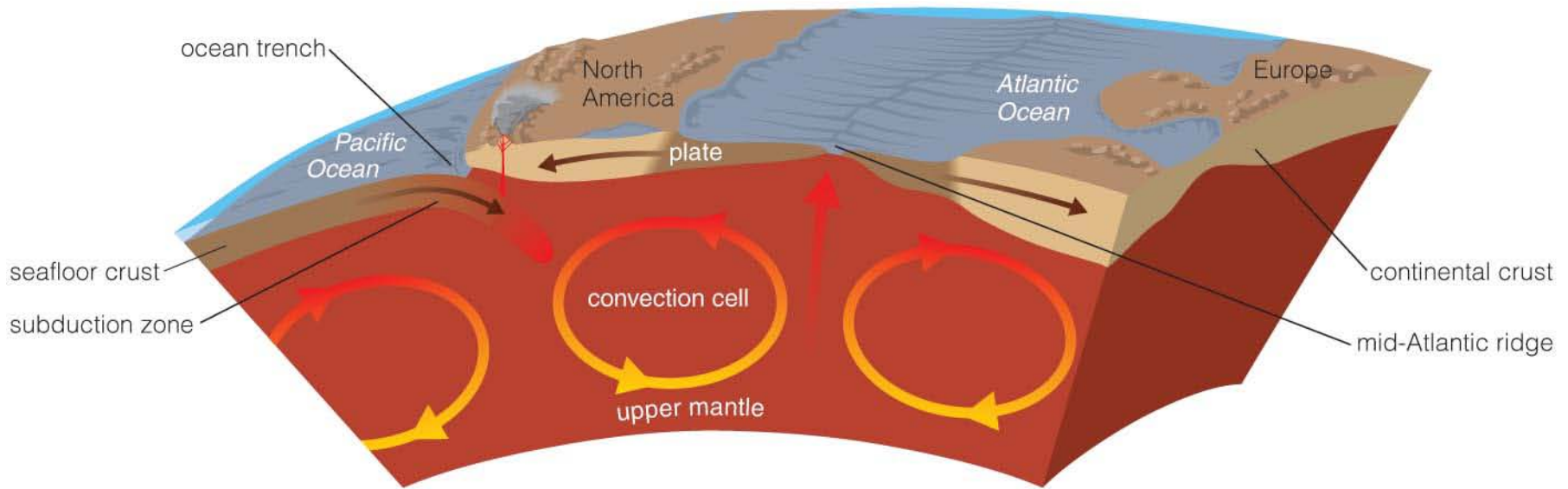
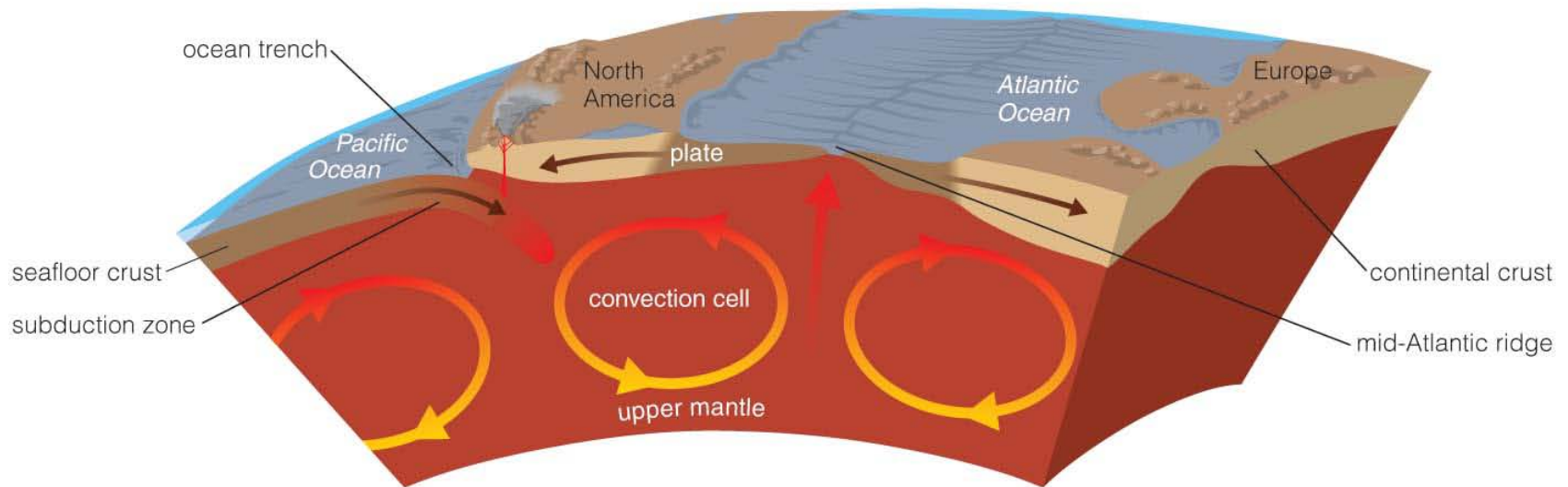


# How is Earth's surface shaped by plate tectonics?

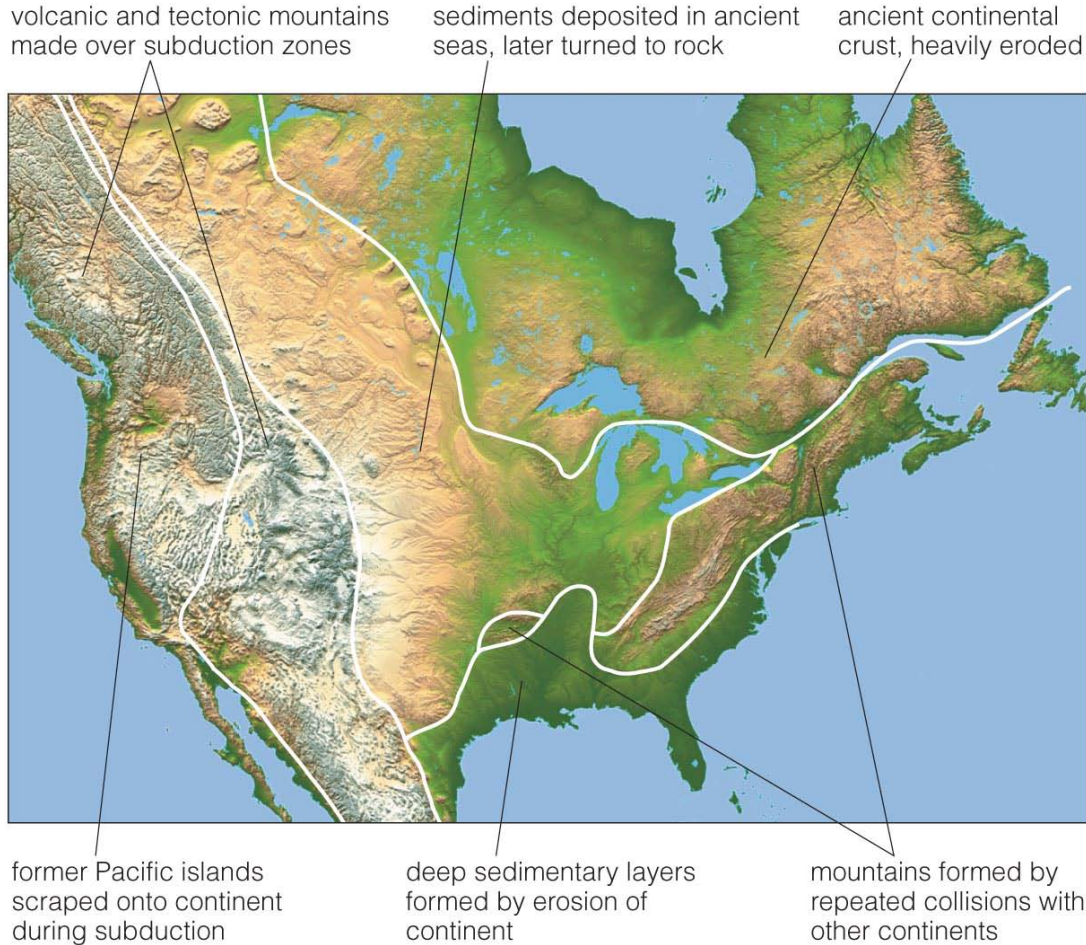


# Seafloor Recycling



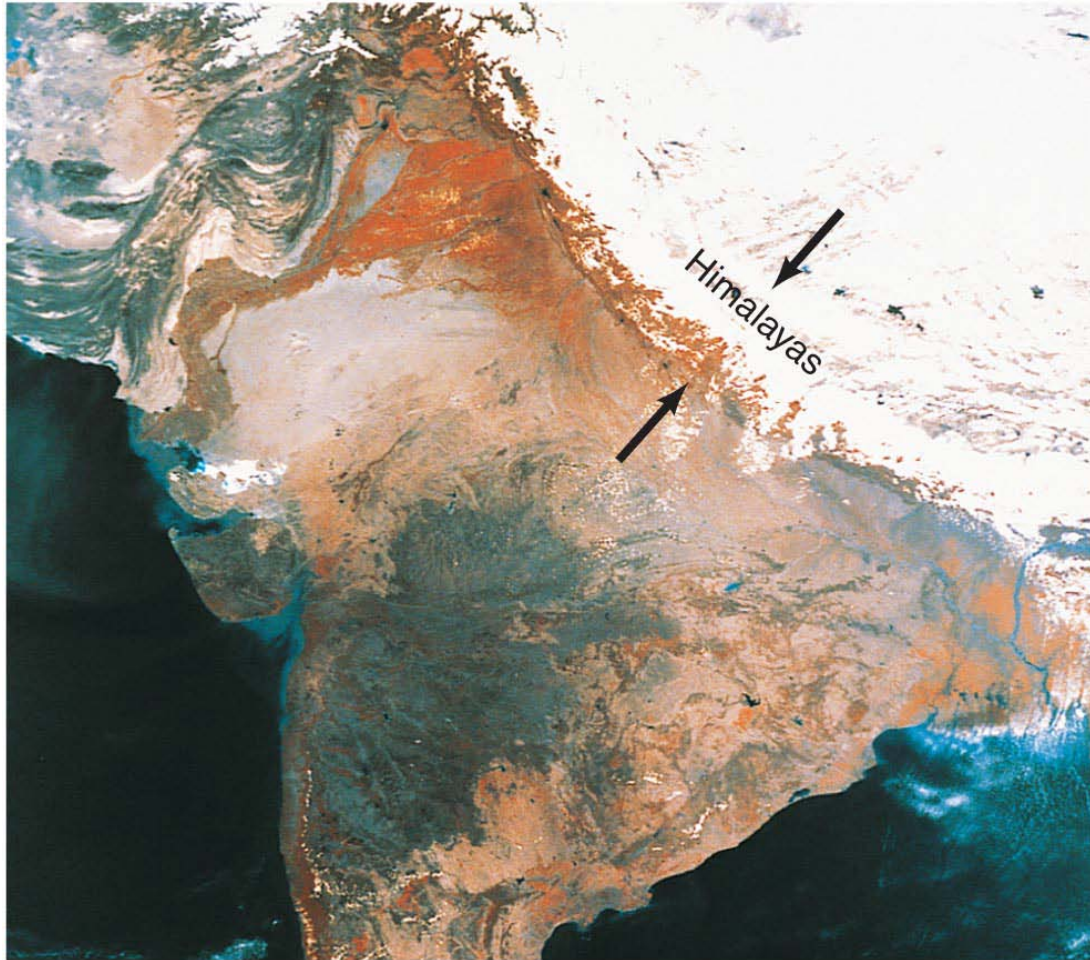
- Seafloor is recycled through a process known as subduction

# Surface Features



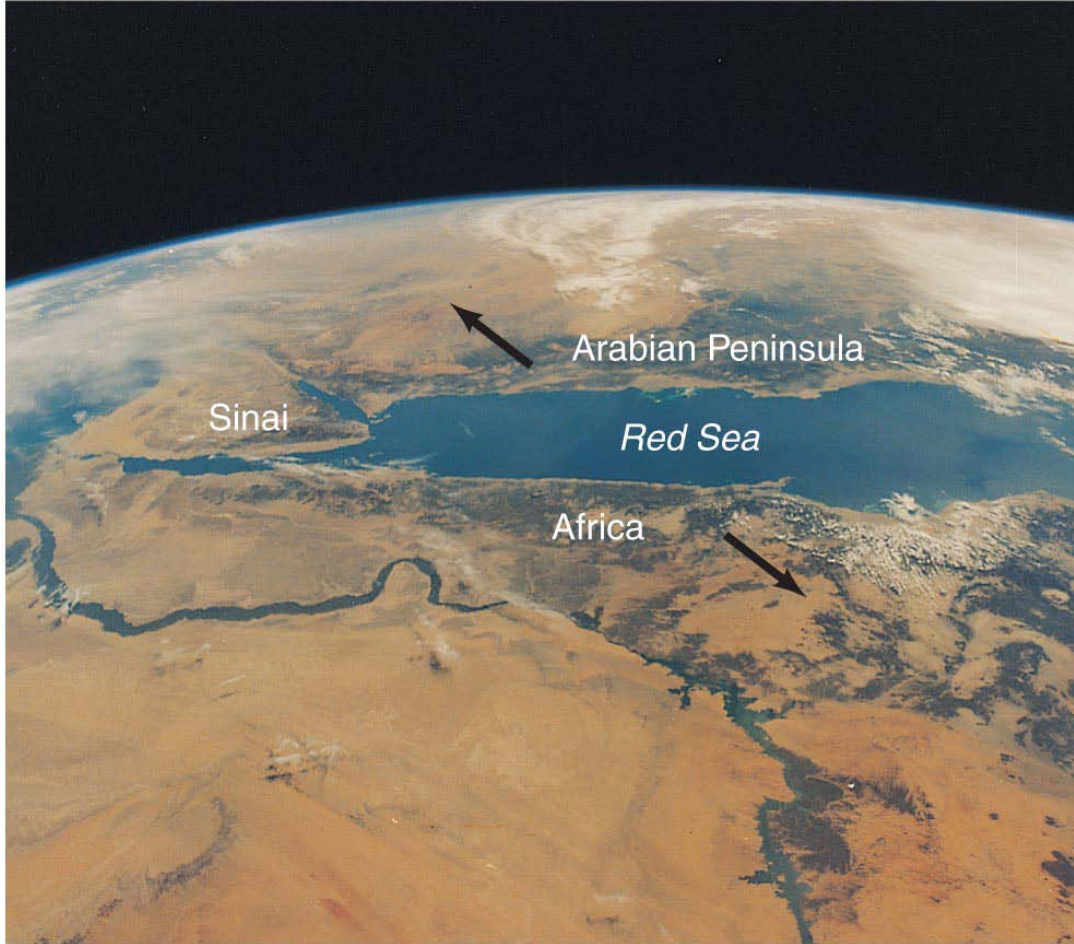
- Major geological features of North America record history of plate tectonics

# Surface Features



- Himalayas are forming from a collision between plates

# Surface Features



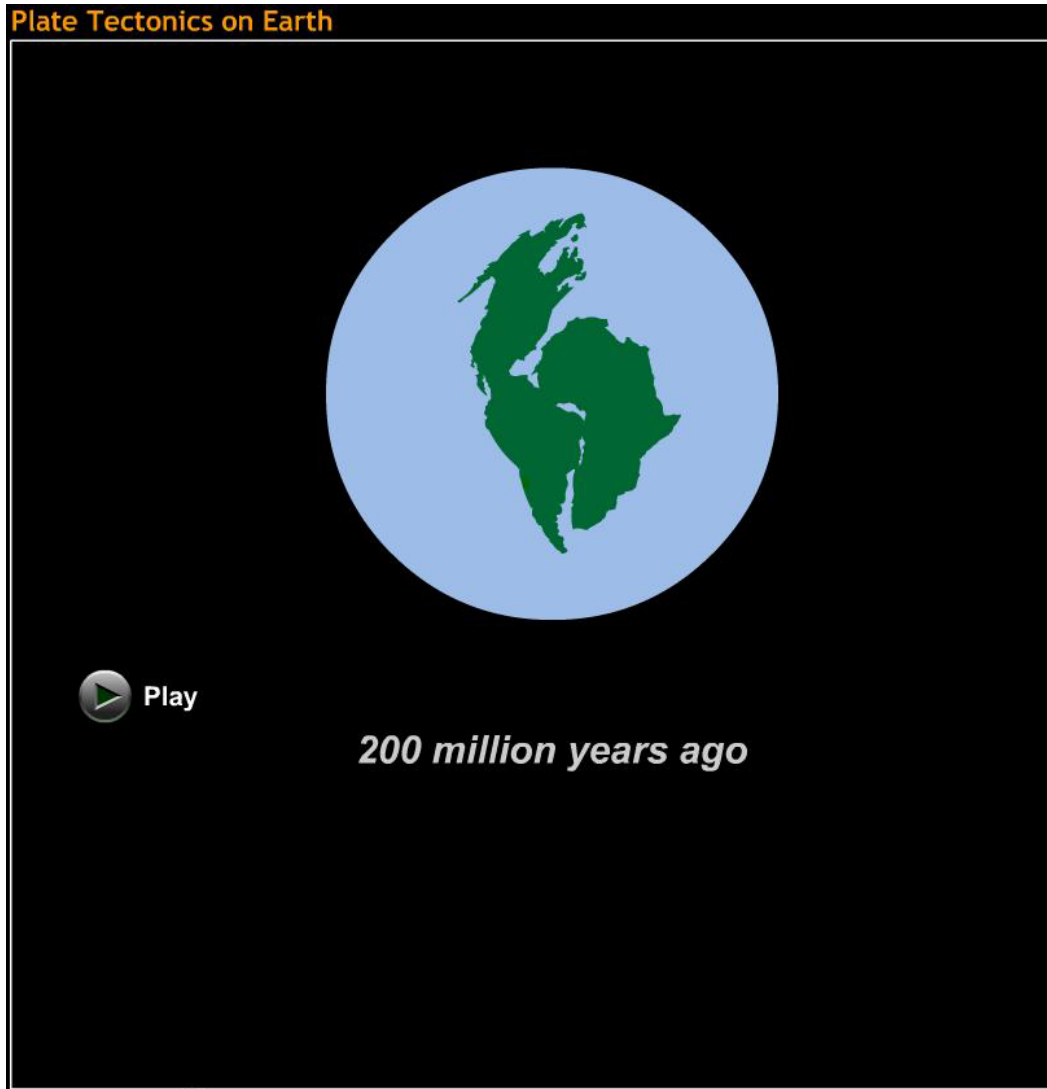
- Red Sea is forming where plates are pulling apart

# Rifts, Faults, Earthquakes



- San Andreas fault in California is a plate boundary
- Motion of plates causes earthquakes

# Plate Motions



- Measurements of plate motions tell us past and future layout of continents

Interactive Figure

# Hot Spots



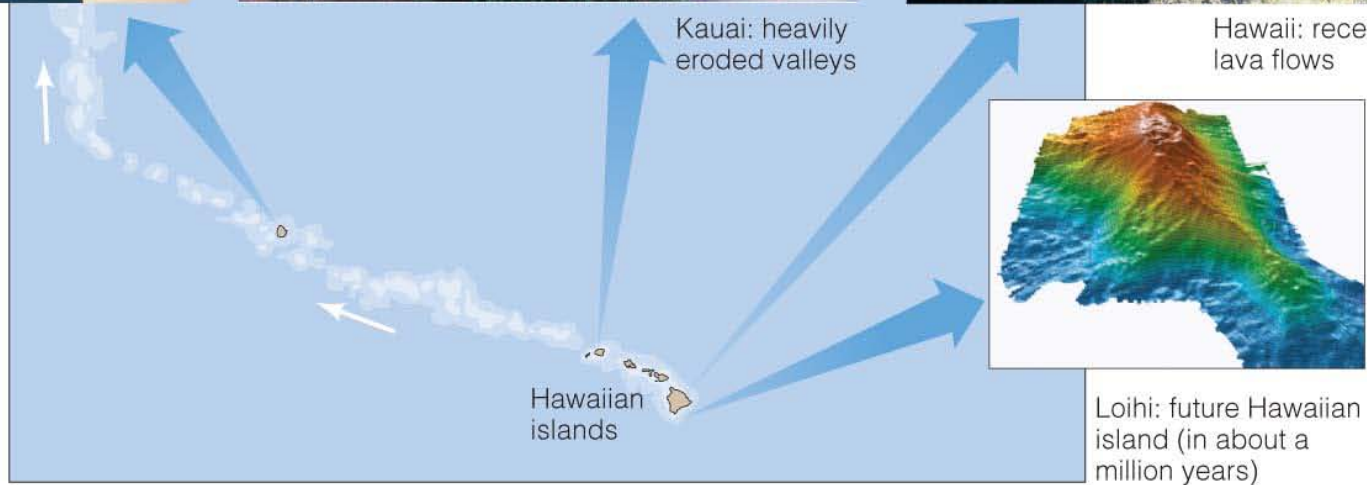
Midway: island eroded down to sea level



Kauai: heavily eroded valleys

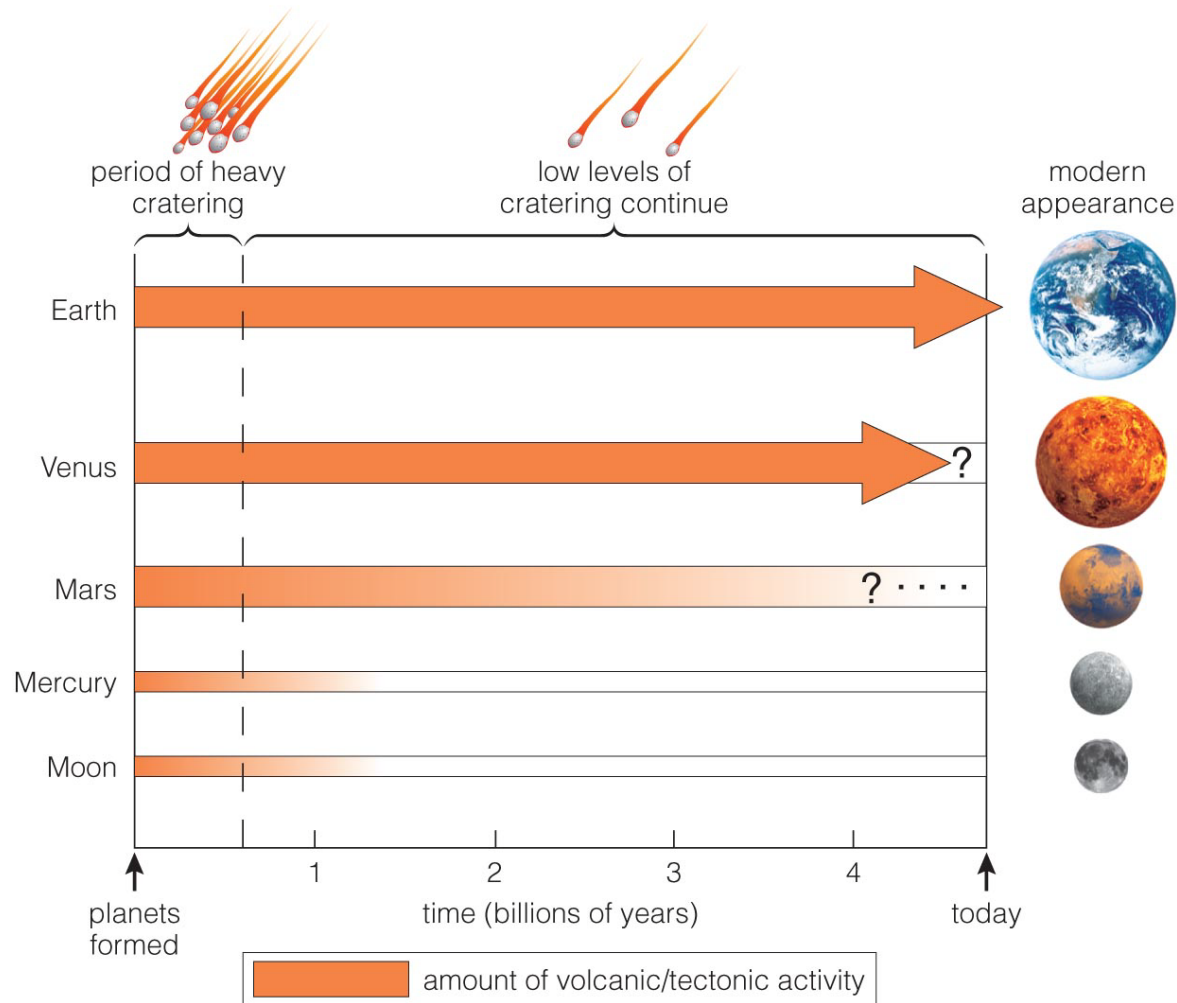


Hawaii: recent lava flows

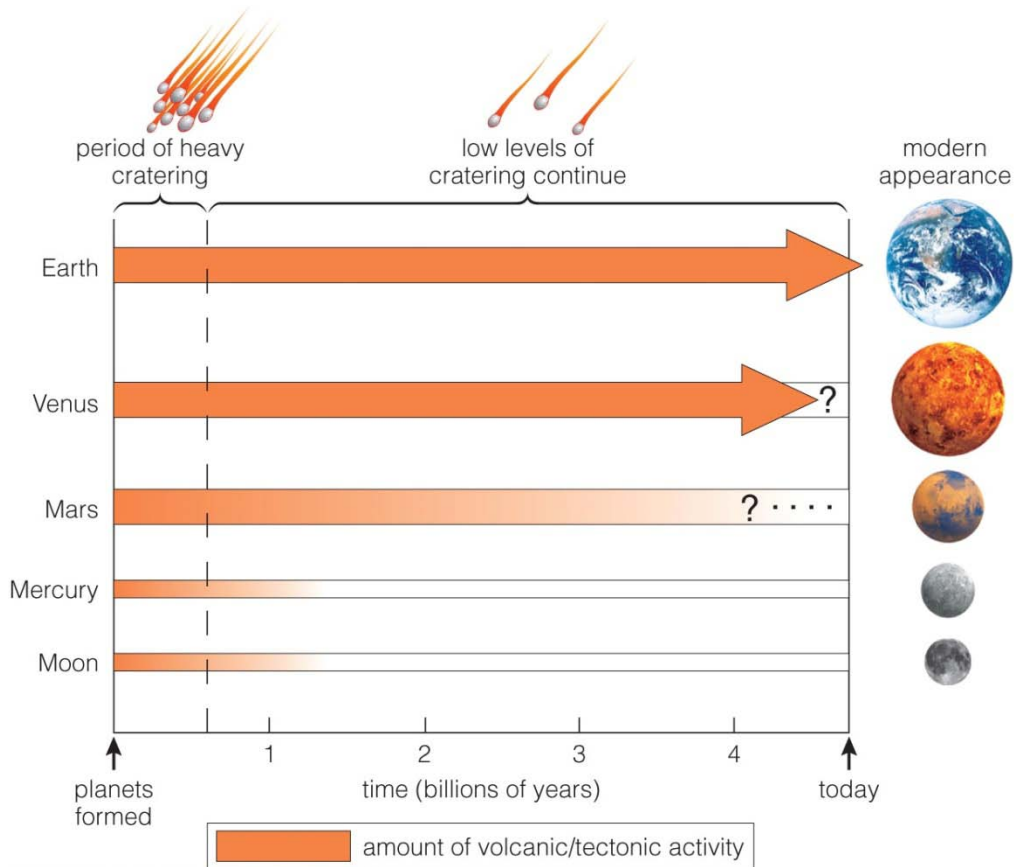


- Hawaiian islands have formed where plate is moving over volcanic hot spot

# Was Earth's geology destined from birth?



# Earth's Destiny



- Many of Earth's features determined by size, rotation, and distance from Sun
- Reason for plate tectonics not yet clear

# What have we learned?

- How do we know that Earth's surface is in motion?
  - Measurements of plate motion confirm idea of continental drift
- How is Earth's surface shaped by plate tectonics?
  - Plate tectonics responsible for subduction, seafloor spreading, mountains, rifts, and earthquakes

# What have we learned?

- Was Earth's geology destined from birth?
  - Many of Earth's features determined by size, distance from Sun, and rotation rate
  - Reason for plate tectonics still a mystery