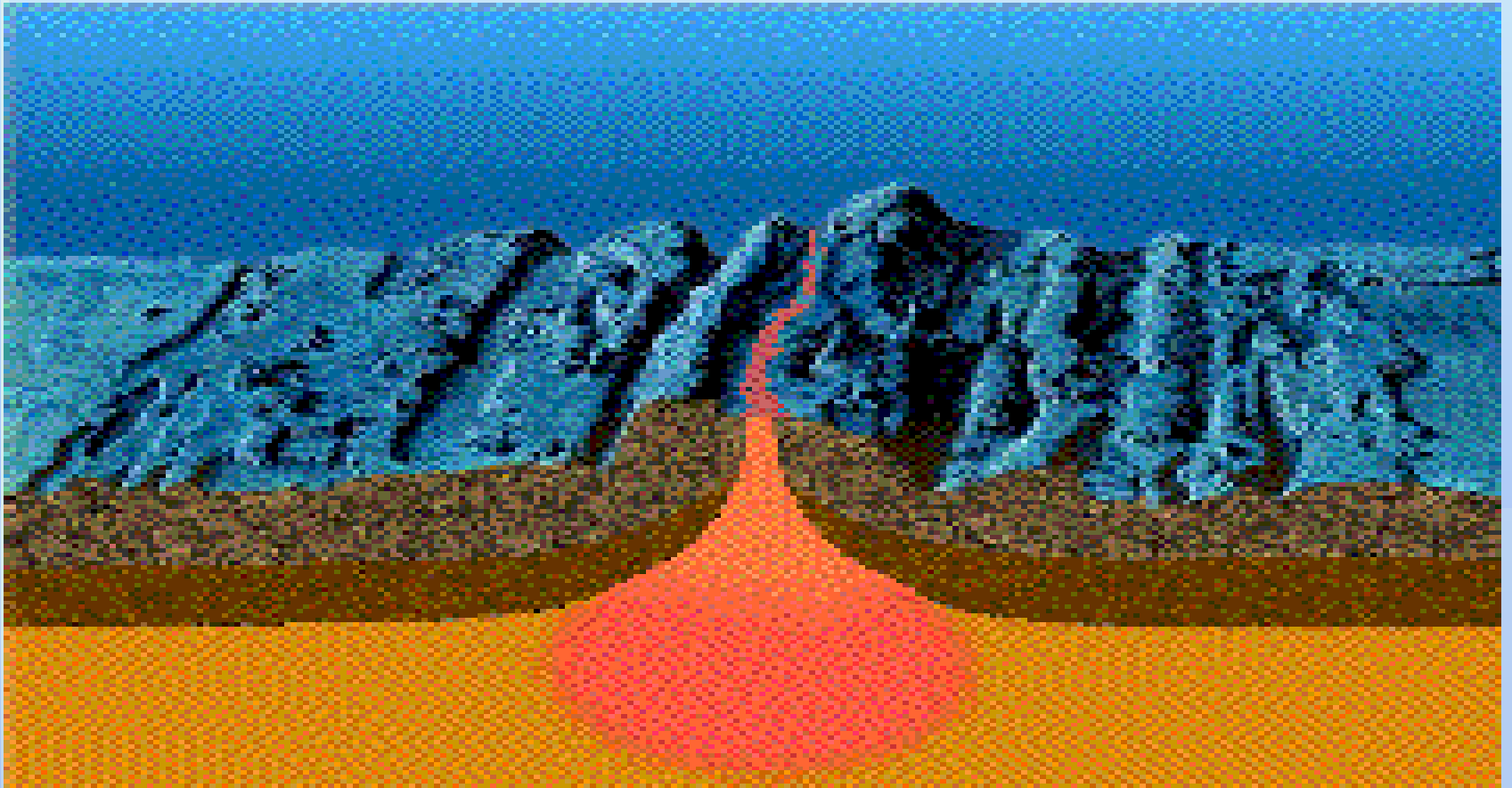
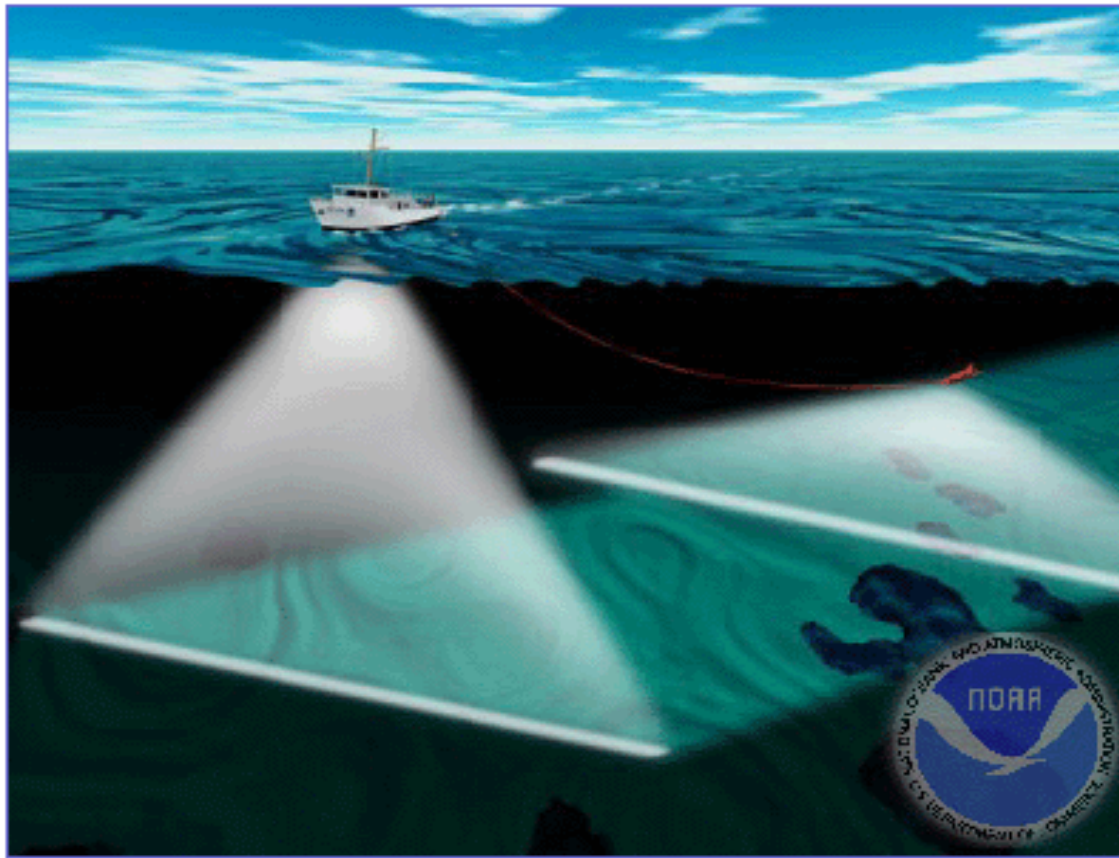


Sea-Floor Spreading



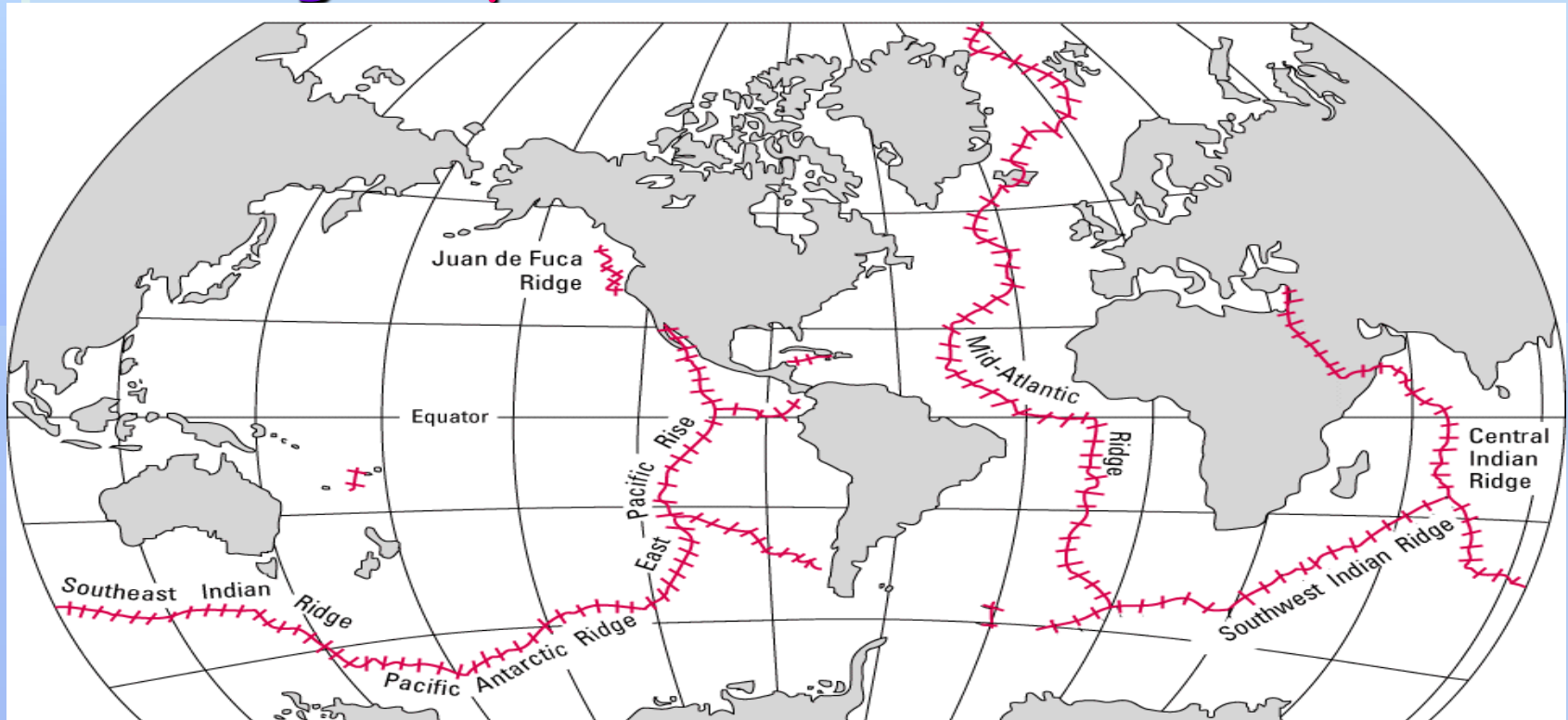
Sea-Floor Spreading



Sonar - a device that bounces sound waves off under-water objects and then records the echoes of these sound waves. The time it takes for the echo to arrive indicates the distance to the object.

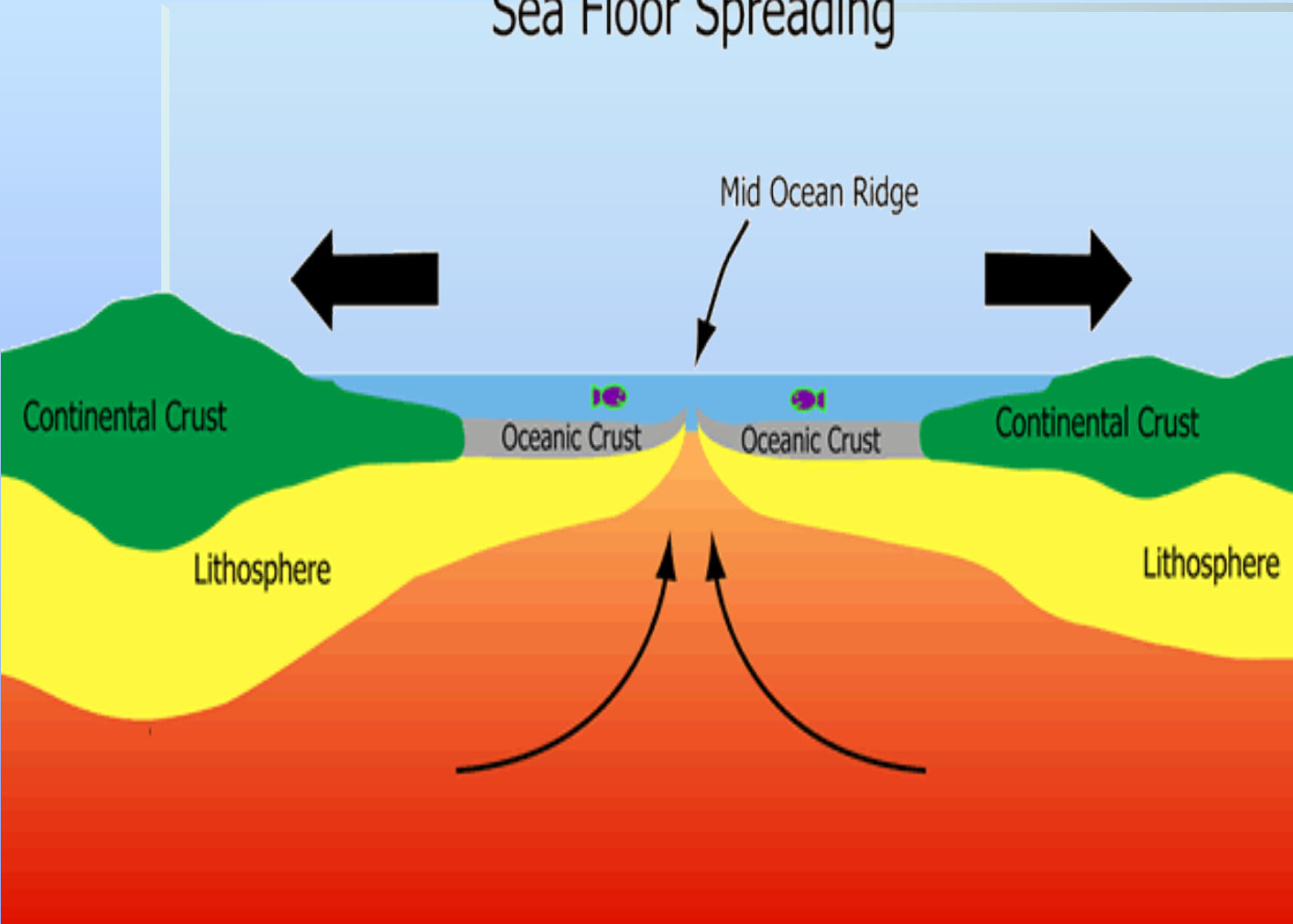
Sea-Floor Spreading

Mid-Ocean Ridge - the longest chain of mountains in the world---these are divergent plate boundaries.



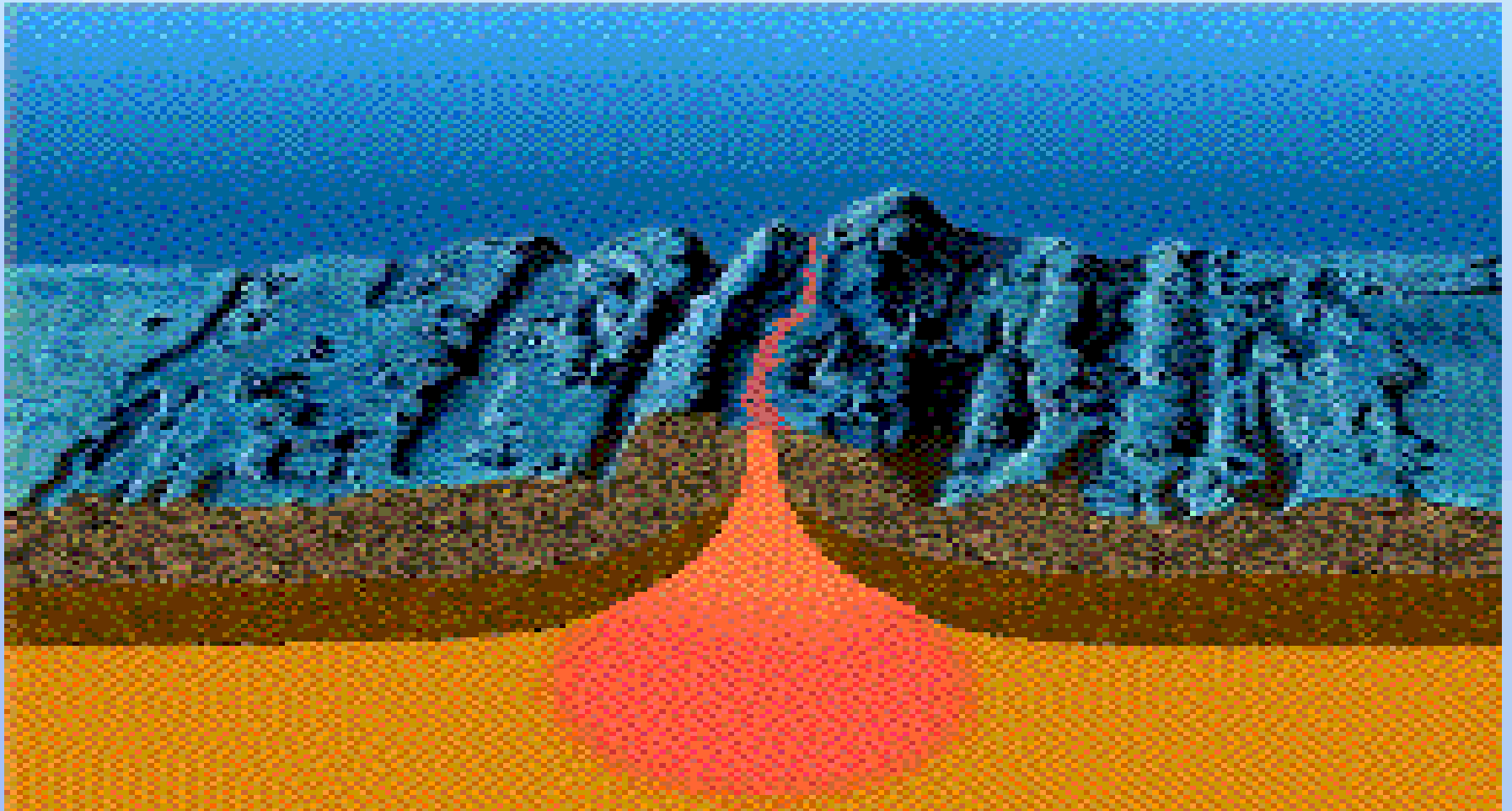
Sea-Floor Spreading

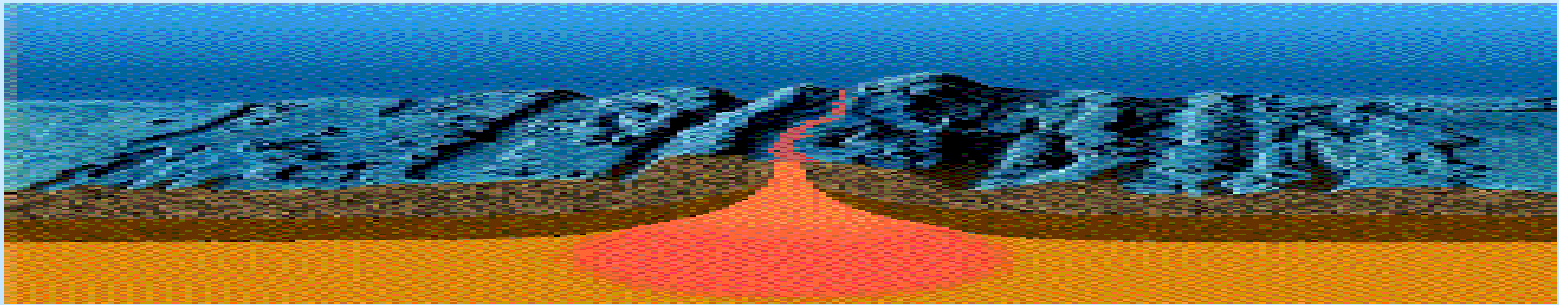
Sea Floor Spreading



Sea-Floor Spreading - Harry Hess in the 1960's; the process that continually adds new material to the ocean floor while pushing older rocks away from the ridge

Sea-Floor Spreading





- Ocean floor moves like a **conveyor** belt carrying continents with it.
- New **ocean floor** forms along cracks in the oceanic crust as molten material erupts from the mantle spreading out and pushing **older rocks** to the sides of the crack. New ocean floor is continually added by the process of **sea-floor** spreading.

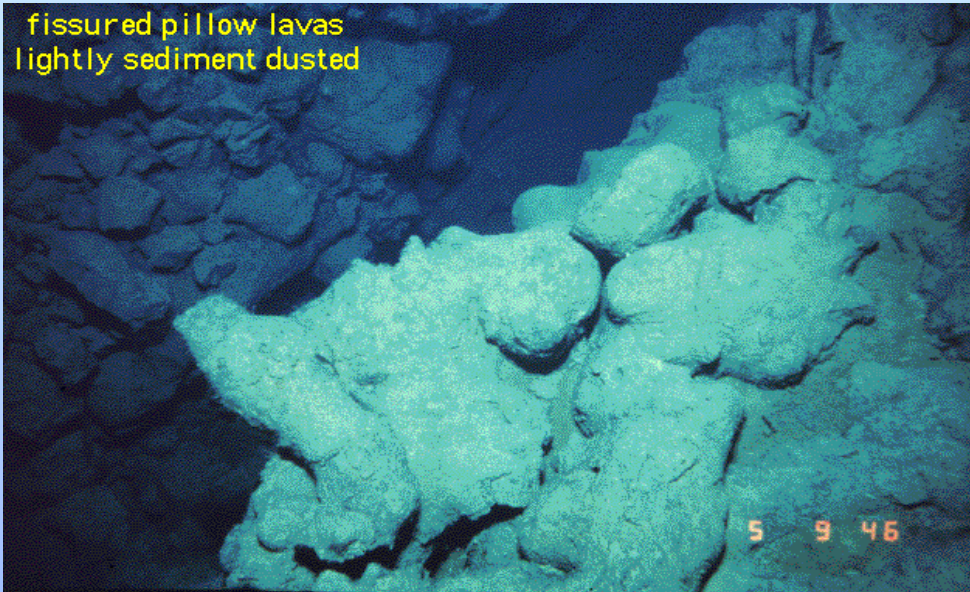
Class demonstration of sea-floor spreading...

I need 8 volunteers....

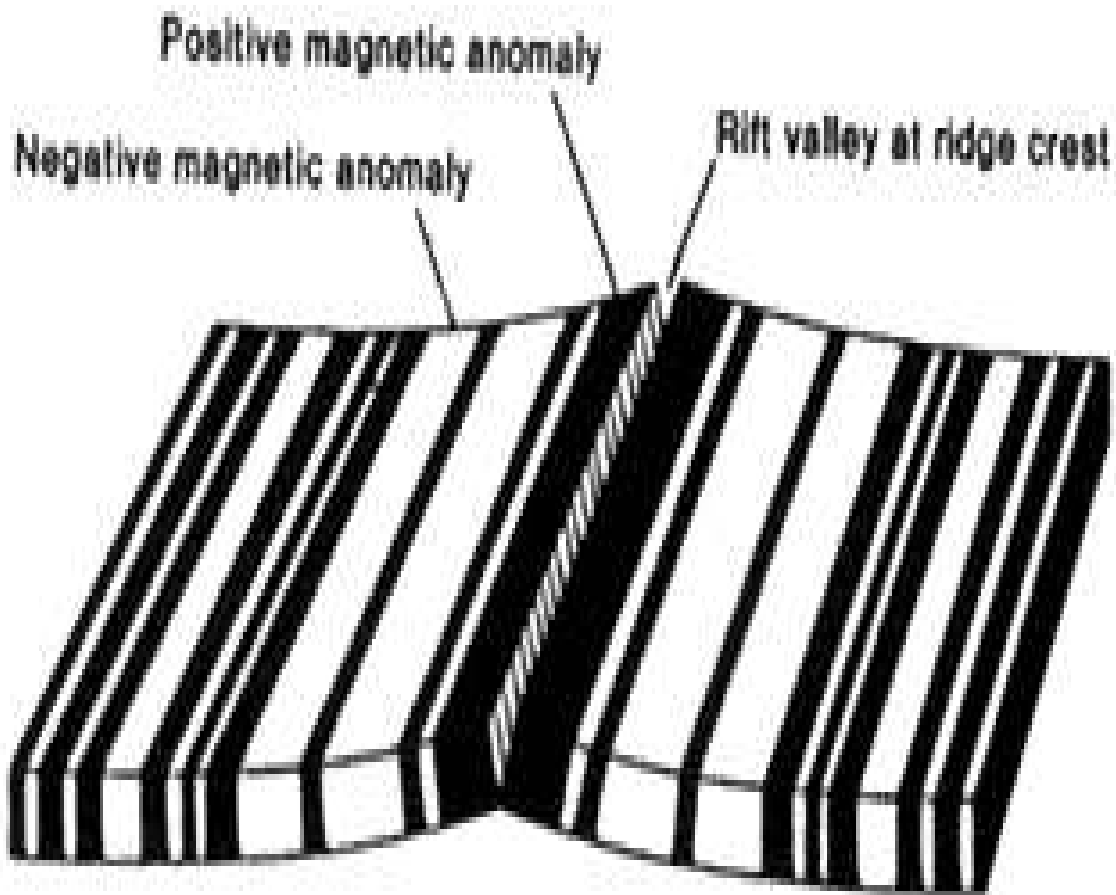
Sea-Floor Spreading

1. Evidence from Molten Material - Rocks shaped like pillows (rock pillows) show that molten material has erupted again and again from cracks along the mid-ocean ridge and cooled quickly

fissured pillow lavas
lightly sediment dusted

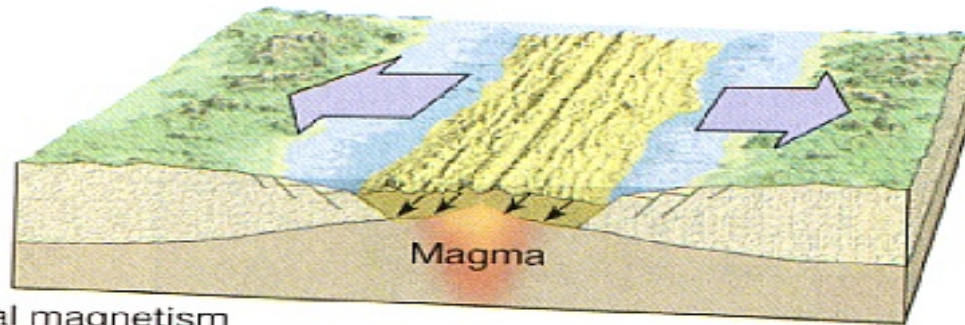


Sea-Floor Spreading

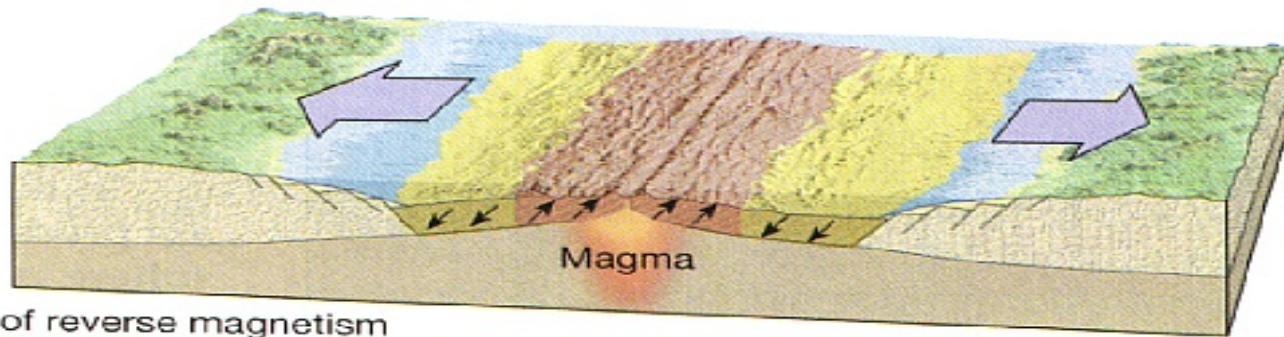


2. Evidence from Magnetic Stripes - Rocks that make up the ocean floor lie in a pattern of magnetized stripes which hold a record of the reversals in Earth's magnetic field

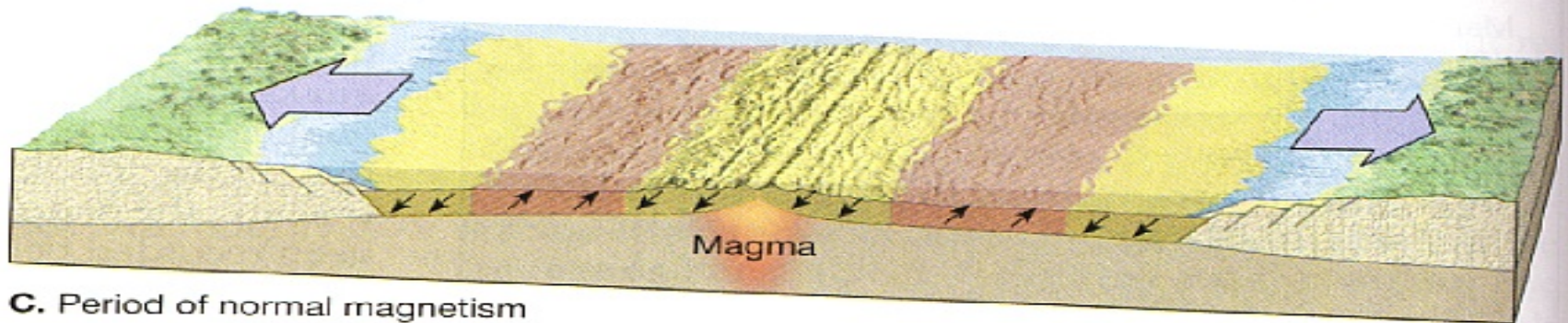
Sea-Floor Spreading



A. Period of normal magnetism

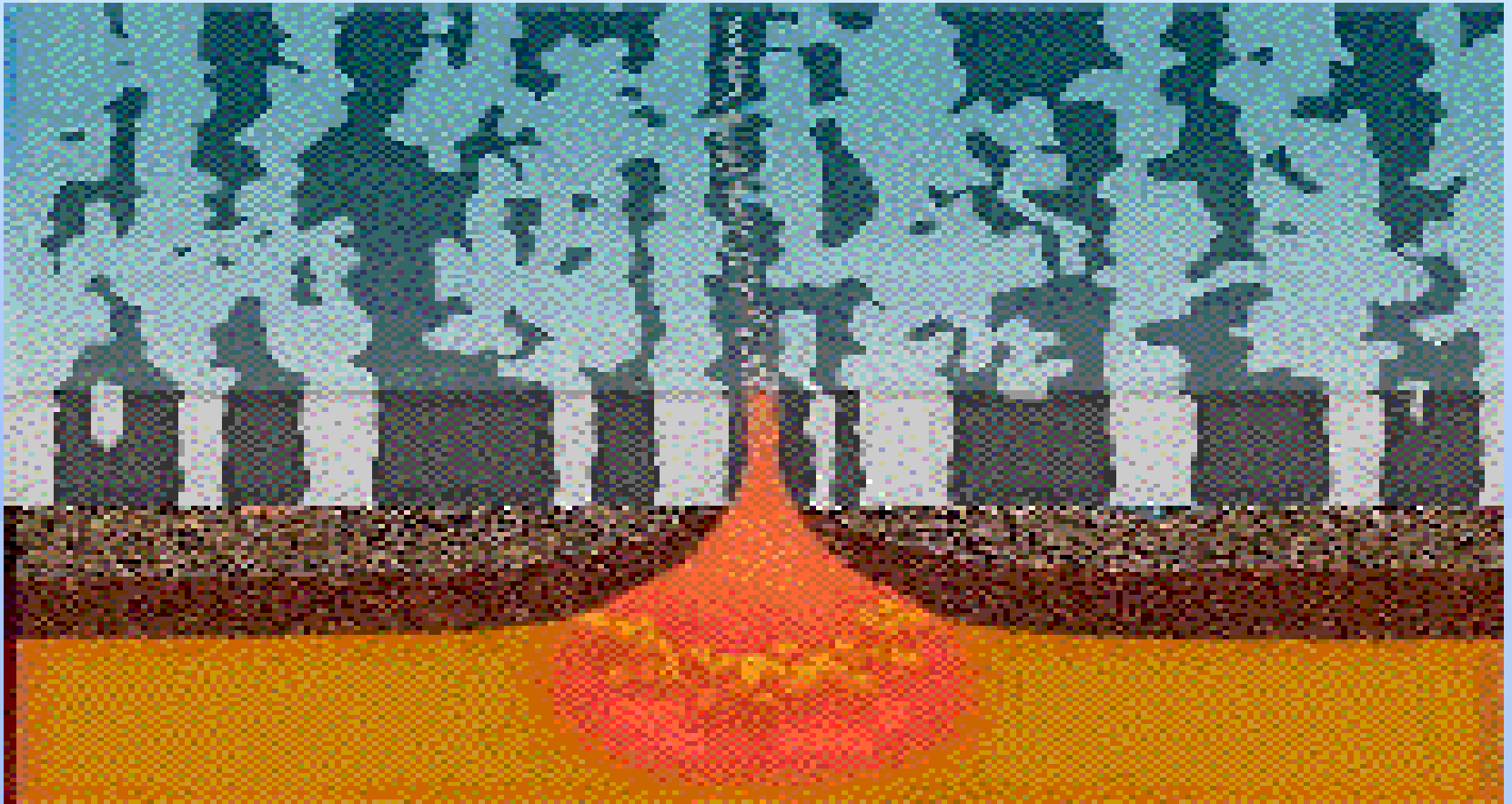


B. Period of reverse magnetism



C. Period of normal magnetism

Sea-Floor Spreading

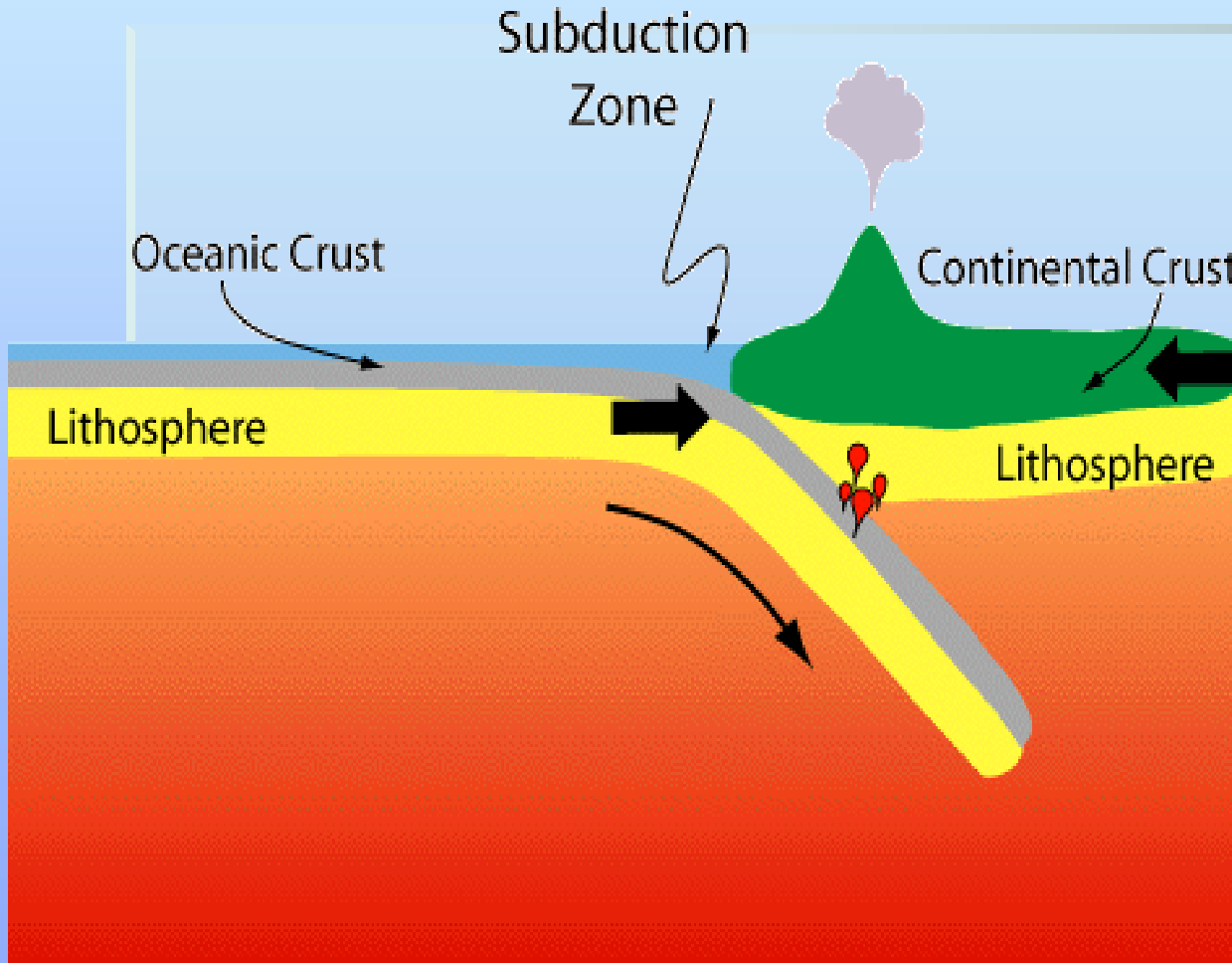


Sea-Floor Spreading



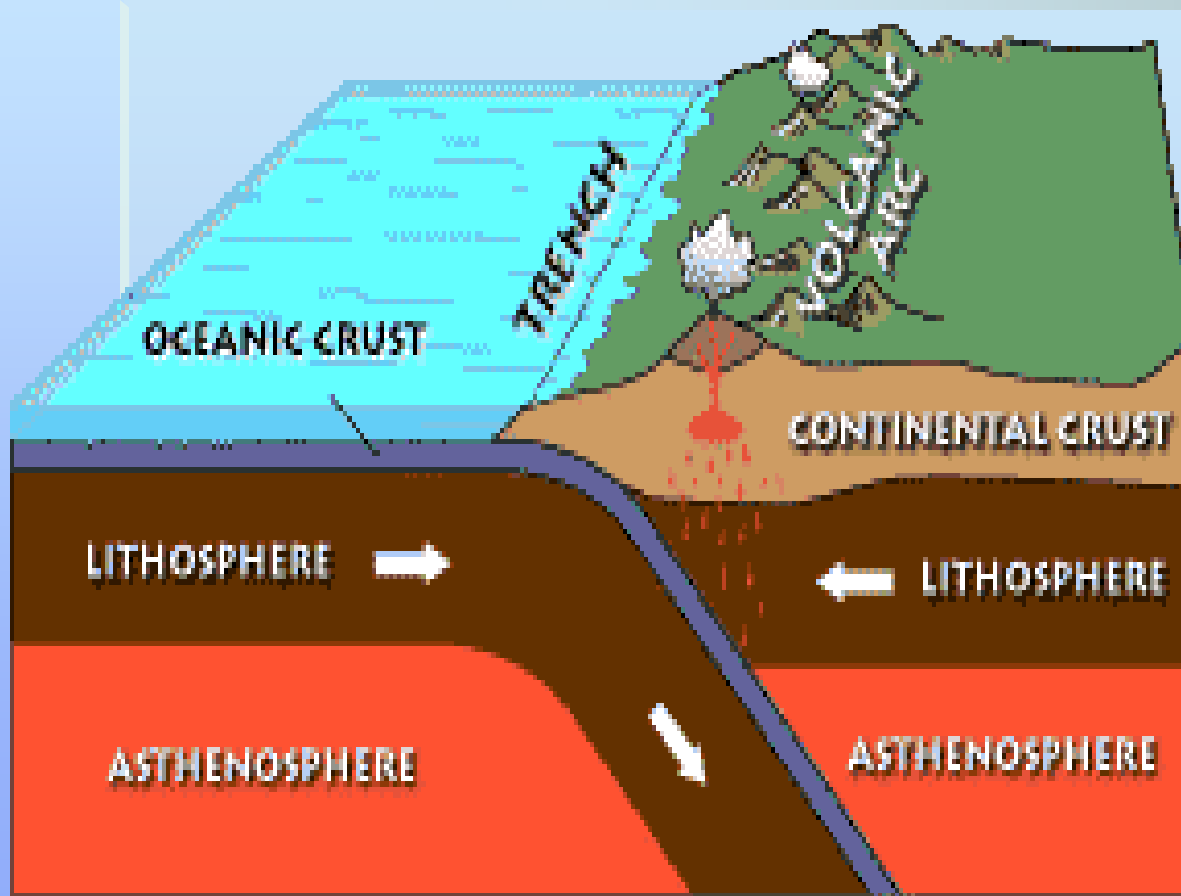
3. Evidence from Drilling Samples - Core samples from the ocean floor show that older rocks are found farther from the ridge; youngest rocks are in the center of the ridge

Sea-Floor Spreading



Subduction - Process by which the ocean floor sinks beneath a deep-ocean trench and back into the mantle; allows part of the ocean floor to sink back into the mantle

Sea-Floor Spreading: Subduction zone



Deep-Ocean Trench -
Occurs at subduction zones. Deep underwater canyons form where oceanic crust bends downward

Sea-Floor Spreading

