

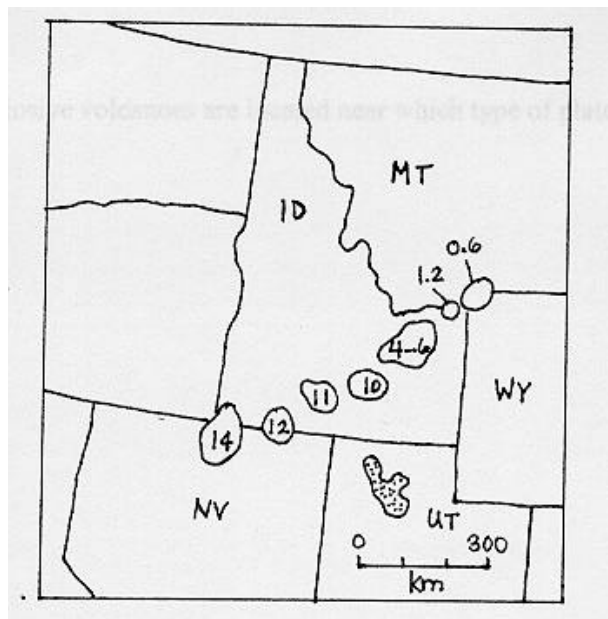
HOTSPOT/YELLOWSTONE DEMONSTRATION

Mantle Plumes and Hotspot Formation

1. Where in the earth do mantle plumes originate?
2. What force causes mantle plumes to rise?

Tracing Plate Motions

1. Draw an arrow indicating the general direction of motion of the North American Plate on the map below of Yellowstone hotspot calderas.



2. Based on the age and spacing of these calderas, what has been the approximate velocity the North American Plate for the past 10 m.y.?

3. Does this generally agree with measurements based on satellite surveys?

Yellowstone Eruptions

1. About how much bigger was the Huckleberry Ridge eruption than the recent Mt. Pinatubo eruption?
2. If Yellowstone produced another Huckleberry Ridge sized eruption, how deep would the ash probably be in Salt Lake City?

Causes of Explosive Volcanism

1. What are the two main ingredients needed in magma to produce explosive eruptions?
2. Most explosive volcanoes are located near which type of plate boundary?

