Lectures 13/14 Volcanoes

What is a volcano/volcanic activity?

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Where do we find volcanoes?

Intrusive and extrusive processes:

Large Igneous Provinces and Hotspots:

Major types of volcanoes:

Why are volcanoes different?











The viscosity of lava

The eruption type of a volcano

Examples for Shield Volcanoes:

Examples for Stratovolcanoes (Composite Volcanoes):

What makes Stratovolcanoes so dangerous?

Examples of volcanic material:



er disc





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Calderas:

Other volcanic activity:

Environmental Impact of Volcanoes:

Volcanoes and Earthquakes/Earthquakes and Volcanoes:

The Monitoring of a Volcano (e.g. Pinatubo, St. Helens, Long Valley Caldera):















Volcanoes in the Solar System:

Volcanoes closest to home:

Igneous rocks at home:

## **Magma Types**

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SiO2 Content typ. intrusive rock typ. extrusive rock melting temperature dissolved gas extrusive type typical location

45-52% Gabbro Basalt >1000°C little effusive oc.-ocean subduction oceanic hotspot mid-ocean ridge

Mafic

(basaltic)

Intermediate (andesitic) 53-65% Diorite Andesite 900°C lots explosive ocean-cont subduction oc.-ocean subduction continental hotspot continental rift

large igneous provinces

## Cool Volcano Websites:

Smithsonian Institute: University of North Dakota: Michigan Technological University: U.S. Geological Survey (CVO): U.S. Geological Survey (HVO): U.S. Geological Survey (LVO):

//www.volcano.si.edu/gvp //volcano.und.edu //www.geo.mtu.edu/volcanoes //vulcan.wr.usgs.gov (Cascade Volcano Observatory) //hvo.wr.usgs.gov (for Hawaiian Volcano Observatory) //lvo.wr.usgs.gov (for Long Valley Observatory)





Felsic (rhyolitic)

> 65%

Granite

Rhyolite

explosive

ocean-cont. subduction

continetal hotspot

800°C

lots

