

## Erosion Processes & Landforms

Rock Weathering – Solar Energy – (Exogenic)

Chemical Rx & hydrothermal

Ground h<sub>2</sub>o 10-20 km below surface

(Weathering & solution)

Disintegration vs. Decomposition

Exfoliation Domes – Sheet Erosion

Rock mass strength – (Diamond – H10 vs. Talc – H1)

Rosen's Law – fragments inverse to size

Rock fracture – Pressure release & expansion

Thermal contractions

Crystal growth

Sedimentary rock – coal

Igneous - granite

(Sheeting) (Mineral differences)

Quarry Rock Bursts

Continuous Joints vs. Short

Thermal expansion

Volcanic Steam (surface/depth/color/fire)

Salt & Crystal Growth -

Iron oxide / salt precipitation

Rock salt – Salt Hydration

Aluminum in desert soils

Gypsum is result of acid rain reaction

Tafoni – Weathering pits of desert - near coasts – Rain/dew/fog

– Namib Desert, South West Africa

Above spray zone on coast

Frost wedge (H<sub>2</sub>o) expands 9% (permafrost)

Biodegradation - mineral root/rock interaction

Physical (6x) greater than chemical oxidation of mineral/weathering

Carbonation - Rx with CO<sub>2</sub>

Hydolysis - h<sub>2</sub>o chem rx

Hydration - add h<sub>2</sub>o

Chelation and exchange- oxygen in blood.

Mineral to Organic compounds

Dissolution - Congruent if components all soluble

Incongruent if all components are not in solution.

Oxidation- Pyrite FeS<sub>2</sub> (fools gold) (yellow)