

## Ch. 1 The Earth System

**Geology**- Study of Earth, extreme events, and gradual change

**Geologic record**- Information preserved in rocks

**Uniformitarianism**- Present is the key to the past

**Eratosthenes** was first to discover Earth's radius (6370km) in 250 B.C.

Continents:

- 0-1 km above sea level
- Highest point- Mt. Everest at 8850 m

Oceans:

- 4-5 km below sea level
- Lowest point- Challenger Deep at 11,030 m

Topography measured with respect to seal level

Seismic waves

- Compressional waves
- **Shear waves**- travels through solids only

Crust

- **Moho**- Separates crust of low-density silicates from high-density silicates of the mantle
  - o More shallow beneath oceans than beneath continents

Inner core

- Transmit shear and compression waves

Iron increases towards the core

Oxygen increases towards the crust

Earth is an open system

Internal heat is released through **radioactivity** (pg. 14)

Lithosphere

- Strong, hard (crust, top mantle)

Asthenosphere

- Weak, hot (mantle 300 km thick)

Convection- Hot material rises, cool material sinks (pg. 18-19)