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Bible Study

# Radiometric Dating Problems

Less $C^{14}$ (half life 5700 yrs) in the past giving the appearance of older age.

- Less cosmic radiation caused by atmospheric shielding. This would cause less nitrogen to be converted into $C^{14}$.
- Volcanoes adding more C to atmosphere, lowering $C^{14}$.
- Warmer climate and more water vapor in atmosphere. Causing cosmic radiation to react with hydrogen nucleus instead of nitrogen.
- Extraterrestrial sources. e.g. comets, planetoids.
    - Atmospheric dust particles, atmospheric chemical processes.
    - Influx of carbon and nitrogen altering $C^{14}$ ratio.

- Less nitrogen in atmosphere because of nitrogen fixation by plants. There would be less nitrogen to convert into $C^{14}$.
- More carbon in the atmosphere before the flood, because of smaller oceans holding less carbon. This would affect the $C^{14}$-$C^{12}$ ratio.

Uranium and Lead (U-Pb)* processes (alpha decay) giving older ages.

- More cosmic radiation reaching earth, because of no atmosphere, or reduced atmosphere, at creation causing a lack of atmospheric shielding. More radioactive disintegration, or alpha decay caused by this increased cosmic radiation. The uranium nucleus has an electric potential barrier of 27 mev (million electron volts). The alpha particles have a potential of 4 mev causing infrequent decay. Cosmic radiation is composed of high speed neutrons, protons, and mesons. It has a potential of 1 billion – billion$^2$ electron volts. Cosmic rays collide with atmospheric particles (shielding effect equal to 34 feet of water). The debris from these collisions has been recorded hundred of feet underground.
- Supernovae causing increased cosmic radiation.
- Increased solar cosmic radiation.

*two decay rates are given for (U-Pb) half life of 4.5 billion years for $U^{238}$—$Pb^{206}$ and 703 million years for $U^{235}$—$Pb^{207}$.

Potassium and Argon ($K^{40}$-$Ar^{40}$) half life 1.25 billion years

- Excessive starting argon in samples.
- Loss of argon in samples through leaching, weathering, and/or acidification.
- Contamination with old/young argon.