

# More on the Age of the Earth

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## Radioactive Decay

The rate of radioactive decay is easily measured. It is generally expressed in terms of half life. Some radioisotopes have short half lives, others have long half lives.

The only radioisotopes with short half lives are those that have a means of being renewed.

Carbon-14 has a half life of 5,730 years. If it were not renewed, all carbon-14 would decay away in under 100,000 years. Carbon-14 is produced when cosmic rays knock neutrons out of atoms in the upper atmosphere. These neutrons react with nitrogen atoms, making carbon-14.

There are at least 11 radioactive isotopes (like lead-205) that have half lives between 1 million years and 80 million years, but they cannot be found anywhere in the solar system unless they are made in the lab.

**This is evidence that the earth is at least several hundred million years old.**

This reasoning makes a BIG assumption.

It assumes that radioactive decay rates are **CONSTANT**.

There are several lines of evidence that indicate this is **NOT** the case:

- Reifenschweiler showed that the decay rate of tritium (a radioactive isotope of hydrogen) varies by as much as 40% with changing temperature when exposed to titanium. (Reifenschweiler, O., Phys. Lett. A, 1994, **184**: p. 149)
- Bosh and others showed that in a fully-ionized state, the beta decay rates of heavy isotopes can be accelerated by a factor of a **billion**. (Bosh, F., *et al.*, Phys. Rev. Lett, 1996, **77**: 5190-5193)

## Helium Trapped in Zircons

- One mode of radioactive decay is **alpha decay**. When this happens, a nucleus ejects an alpha particle, which is a helium nucleus.
- This helium nucleus begins to speed away from the emitting nucleus, but it can get trapped in surrounding material.
- While examining zircons from a borehole in Fenton Hills, New Mexico, scientists noticed large amounts of helium in the zircons. This was surprising, as helium should diffuse out of zircon fairly quickly.
- If the radioactive decay that produced the helium was as slow as expected from the half lives of the isotopes present, there should not be much buildup

The researchers looked through the literature and were surprised to find that although it was generally assumed that helium diffuses quickly through zircon, the actual rate had **never been measured**.

The researchers set up two scenarios:

- ✓ Assuming the rocks were as old as standard geology claims (greater than 1.5 billion years old) and that the radioactive decay rates are constant, they predicted how quickly helium must diffuse out of zircon to get the buildup that was observed.
- ✓ Assuming the rocks were only 6,000 years old and that there was an early “burst” of radioactive decay that produced more than “500 million years” worth of alpha decay in a few days, they predicted how quickly helium must diffuse out of zircon to get the buildup that was observed.

Not surprisingly, the predictions were off by a factor of 100,000!

Two years later, the diffusion rates were measured

The data lined up **perfectly** with the prediction that the rocks were thousands of years old and that there had been a “burst” of radioactive decay in the past.

See: [http://www.icr.org/research/icc03/pdf/Helium\\_ICC\\_7-22-03.pdf](http://www.icr.org/research/icc03/pdf/Helium_ICC_7-22-03.pdf)

### Carbon-14 Dating

- Carbon-14 atoms decay to Nitrogen-14 atoms with a half-life of 5,730 years.
- All living organisms (including plants) exchange carbon-14 with the atmosphere.
- Upon death, this exchange ceases. As a result, the carbon-14 concentration begins to decrease
- If you know how much carbon-14 was in a living creature when it died, you can use the decay rate and the amount left to determine how long ago the organism died.

#### **Assumptions of Carbon-14 Dating:**

- The decay rate of Carbon-14 is constant. It is not clear this is a good assumption.
- Carbon-14 cannot enter or leave a fossil. This has been demonstrated to be false in some cases.
- The Amount of Carbon-14 in the Atmosphere Must Have Always Been What it is now. This has been demonstrated to be false.

## An Even Bigger Problem With Carbon-14 Dating

Lots of items that are supposedly **MUCH OLDER** date as relatively “young” with the carbon-14 method

- 10 coal samples from all over the U.S. that are supposedly 45-330 MILLION years dated 50,000 ± 5,000 years old with the carbon-14 dating method.
- 5 diamond samples from 5 different mines in Botswana and South Africa are all supposed to be several hundred million years old. They dated as roughly 57,000 ± 10,000 years old.
- Baumgardner and others list NINETY other cases in the literature where materials that are supposed to be millions of years old date as tens of thousands of years old with the carbon-14 system.

See: [http://www.icr.org/research/icc03/pdf/RATE\\_ICC\\_Baumgardner.pdf](http://www.icr.org/research/icc03/pdf/RATE_ICC_Baumgardner.pdf)  
[http://www.icr.org/research/icc03/pdf/RATE\\_ICC\\_Baumgardner.pdf](http://www.icr.org/research/icc03/pdf/RATE_ICC_Baumgardner.pdf)

### **There is a lot of Carbon-14 in Dinosaur Bones**

Evolutionists have always assumed there would be no detectable carbon-14 in dinosaur bones.

Creationists predicted the opposite.

Samples of 8 dinosaur fossils from Texas, Alaska, Colorado, and Montana, China, and Europe were sent out by creationists to be carbon dated. If evolutionists were correct, the result should be that there wasn't enough carbon-14 to give an age.

*Acrocanthosaurus* fossils (supposed to be 100 million years old), carbon date from 23,760 to 30,640 years old.

*Triceratops* fossils (supposed to be 65 million years old), carbon date from 24,340 to 39,320 years old.

Samples of 8 dinosaur fossils from Texas, Alaska, Colorado, and Montana, China, and Europe had so much carbon-14 in them that they couldn't be more than 39,000 years old. Not a single sample tested as expected by evolutionists.

[Hugh Miller, et. al., “A comparison of  $\delta^{13}\text{C}$  and pMC Values for Ten Cretaceous-Jurassic Dinosaur Bones from Texas to Alaska USA, China, and Europe,” AOGS-AGU (WPGM) 2012 conference]

### **How Did Evolutionists Respond?**

The facility that did the carbon-14 analysis now refuses any samples they send!

“The scientists at CAIS and I are dismayed by the claims that you and your team have made with respect to the age of the Earth and the validity of biological evolution. Consequently, we are no longer able to provide radiocarbon services in support of your anti-scientific agenda.”

[<http://newgeology.us/presentation48.html>]

Famous paleontologist Jack Horner refused the offer of a \$10,000 to his museum to use carbon-14 dating on the soft tissue that Schweitzer found in the dinosaur fossil in 2005. He said that “the spin” creationists can get off it “is not going to help us.”

[<https://www.youtube.com/watch?v=szHNDAMfA0s>]

The \$10,000 grant was above and beyond the cost of the test. In addition to the \$10,000, the grant included the cost for four other artifacts of the museum’s choosing!

### Potassium-Argon Dating

Uses the radioactive decay of potassium-40 into argon-40

This technique is used to date volcanic rock. The assumption is that all argon-40 boils out of the lava while it is hot. Thus, when the lava cools, it starts with no argon-40.

- Rocks from a 200-year old Hawaiian lava flow dated as  $1.6 \pm 0.16$  million years old.
- Rocks from a 500-year old lava flow dated as  $12.6 \pm 4.5$  million years old.
- Rocks from the Kilauea basalt in Hawaii that history tells us are 200 years old dated as  $42.9 \pm 4.2$  million years old.
- Snelling lists **23 examples** of volcanic rocks whose ages are known being dated as far too old using the potassium-argon dating method.

See: <http://www.icr.org/pubs/imp/imp-307.htm>

### **Ancient Drawings Contain Incredibly Accurate Pictures of Dinosaurs**

A petroglyph (Natural Bridges National Monument) has been attributed to the work of the ancient Anasazi Indians who lived in this area from approximately 400 A.D. to 1300 A.D. It is an accurate representation of a sauropod dinosaur.

A petroglyph discovered in the Havasupai Canyon in Arizona shows the proper stance and shape of an Edmontosaurus. There is no creature (other than this type of dinosaur) that has such a body shape and stance.

A rock sculpture on a Cambodian temple is from the 12<sup>th</sup> or early 13<sup>th</sup> century has an accurate representation of Stegosaurus.

The tomb of Richard Bell was made in 1495. The brass frame around the marker is engraved with words, many of which have animal drawings between them. The animals are mostly common things we see today, such as bats. However, there are sauropod dinosaurs as well.