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## The Regression of Modern Science Part 5 The Age of the Earth

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**Abstract.** The reduction of the role of logic in modern science has led to the false or incomplete theories of electrodynamics, gravitation, strong interaction, weak interaction, special and general relativity, quantum mechanics, the chemical atom, the atomic nucleus, the standard model of elementary particles, the Big Bang Theory of the origin of the universe, the abiogenesis origin of life, and an age of the earth of 4.5 billion years. This is known as the regression of modern science. The solution to the problem is to properly combine the axiomatic (logical) and empirical (experimental) scientific methods in such a manner that the full potential of logic, experiment and mathematics to discover truth is employed.[1]

**Big Bang History of the Universe.** The Belgian astronomer and Catholic priest Georges Lemaître in 1927 proposed, on theoretical grounds, that the universe is expanding, which appeared to be observationally confirmed soon afterwards by Edwin Hubble with his discovery of the Hubble redshift which was considered a Doppler shift. [2]

The **Big Bang Theory** is the cosmological model for the origin of the universe from the earliest known periods through its subsequent large-scale evolution. The model describes how the universe expanded from a quantum fluctuation producing a very high-density and high-temperature state, and offers a potential explanation for a broad range of phenomena, including the abundance of light elements, the cosmic microwave background radiation

(CMB), the large scale structure of the universe and Hubble's law. If the known laws of physics are used to extrapolate backwards in time to the highest density regime, the result is a singularity which is associated with the Big Bang. Measurements of the current expansion rate of the universe based on the observed Hubble redshifts being interpreted as Doppler red shifts place the Big Bang at around 13.8 billion years ago, which is thus considered to be the age of the universe. After the initial expansion, the universe cooled sufficiently to allow the formation of subatomic particles, and later simple atoms like hydrogen and helium. Giant clouds of these primordial elements later coalesced through gravity in halos of dark matter eventually forming the stars and galaxies visible today.

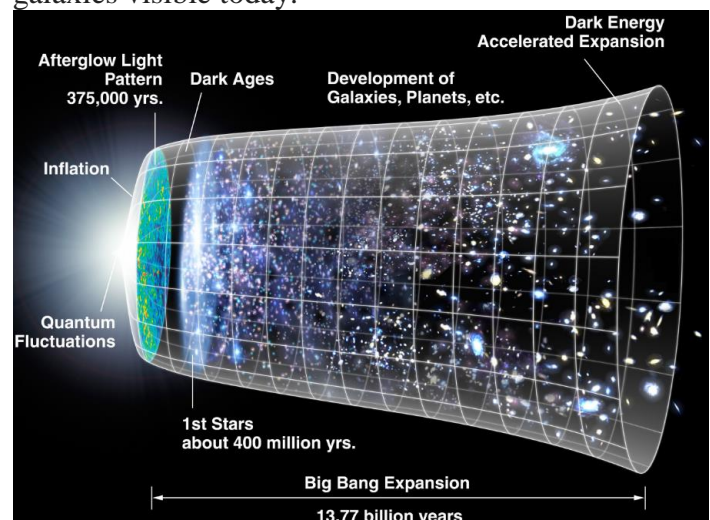


Figure 1 Timeline of the Big Bang Expansion of Space[3]  
(Continued on page 3)

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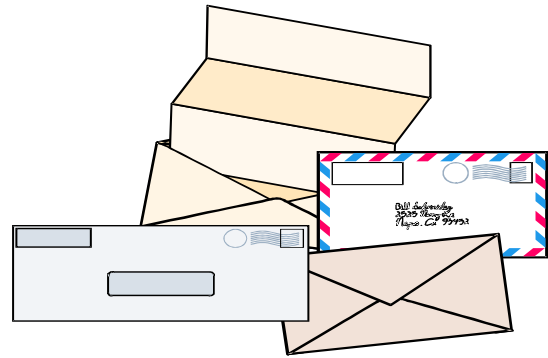
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## Letters and E-Mail Correspondence Special Notices

In July Bill Lucas received the Lifetime Achievement Award from the Chappel Natural Philosophy Society (CNPS) for his published works at their meeting at the University of Connecticut at Storrs, CT June 27-30, 2018. Bill was also the keynote speaker at the banquet for this annual meeting of the CNPS. See

<http://www.naturalphilosophy.org/site/cnps-2018-annual-conference/>

We are continuing our efforts to establish a list of leaders at each of the major scientific institutions in the United States. The list will consist of contact name, position, institution, postal address, email address and telephone number. Each leader will also be given a code to identify their interest as only science or also the Judeo-Christian religious aspects of science. We will also be creating a list of leaders with a special religious code at the Judeo-Christian seminaries, Bible colleges, and universities. Once these lists are established we will begin regular emails to them with information about the reformation in science that we are attempting to lead. All feedback from these contacts will be welcome. If you are interested in helping us to develop our contact lists or speaking engagements, please contact [Bill.Lucas001@gmail.com](mailto:Bill.Lucas001@gmail.com).

# The Regression of Modern Science Part 5 The Age of the Earth

(Continued from page 1)

**Big Bang History of the Earth.** According to the theory of the Big Bang, a star and its planets form out of a collapsing cloud of dust and gas within a larger cloud called a nebula. As gravity pulls material in the collapsing cloud closer together, the center of the cloud gets more and more compressed and, in turn, gets hotter forming the sun. The various planets are **thought** to have formed from the solar nebula, the disc-shaped cloud of gas and dust left over from the sun's formation. The currently accepted method by which the planets formed is **accretion**, in which the planets began as dust grains in orbit around the central protostar. As the planets got bigger and hotter, they became molten bodies which eventually cooled to form Precambrian granites on the surface of the planets like the earth.

The Big Bang is presumed to have produced just hydrogen and helium, i.e. only 2 of the 92 elements found in the earth's crust. Theoretically they came from thermonuclear fusion reactions that occurred billions of years ago deep inside certain stars. In this scenario, space became lightly sprinkled with other elements when those stars later exploded as supernovae. No explanation has been given on how the supernova remnants from throughout the far reaches of interstellar space reaccumulates to become the raw materials for our solar system whose star was never a supernova.

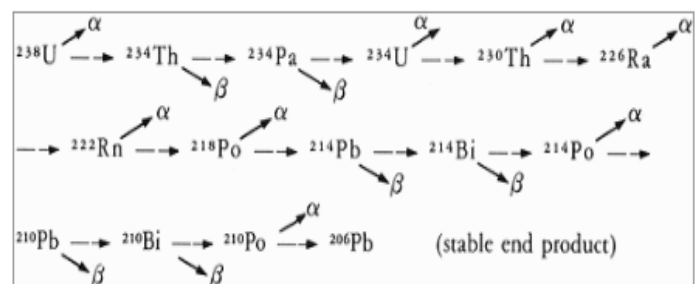
According to radiometric dating techniques and the assumptions made, the oldest Precambrian rocks on earth formed 4.5 billion years ago when the hot, molten proto-earth began to cool. The assumptions made in the radiometric dating technique began to be questioned with the discovery of radiohalos.

**Discovery of Pleochroic Halos in Minerals.** In the late 1800's improved microscopes became available to mineralogists that enabled them to see inside thin, translucent slices of minerals. These mineral specimens which appeared to the unaided eye to be clear of defects actually contain tiny grains of other minerals. Some of these grains were surrounded by a

series of beautifully colored concentric rings. The tiny ring patterns resembled a miniature archery target with the grain at the center of the bull's eye. Because of their halo-like appearance and their exhibited color variations, known as pleochroism in certain minerals, these concentric ring patterns came to be known as pleochroic halos.

Upon further study mineralogists discovered by changing the focus of the microscope that what appeared to be a series of flat concentric rings under one focus of the microscope was actually a cross section of a group of centered spherical shells. In this case the tiny grain at the center of the spherical shells was thought to hold the key to the origin of the halos. Some mineralogists speculated that an organic pigment might have been trapped in the halo center when the mineral formed, only to diffuse out later to form tiny colored spheres. However, no one could identify the pigment or satisfactorily explain how diffusion could produce multiple well defined spheres.

**The Radioactive Nature of Halos in Minerals.** Pleochroic halos defied explanation until uranium and other elements were discovered to be radioactive. In 1907 the solution to the halo puzzle was discovered in the geology laboratory of John Joly of Trinity College in Dublin. Joly was examining the halos in biotite, a dark mica that is easily split apart into thin slices. Joly realized that the diffusion hypothesis could not explain the well defined edges of the halo rings in biotite consisting of well defined layers or sheets. He began to consider a radioactive origin for the halos. By that time scientists knew that uranium is the parent of a radioactive decay chain as shown in Figure 2.

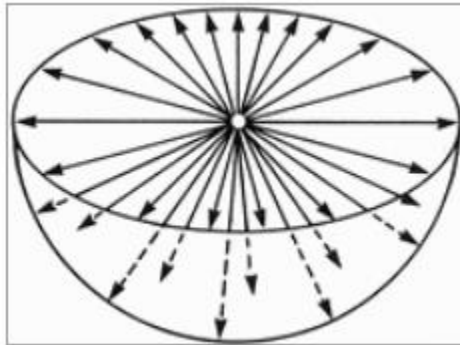


U-uranium, Th-thorium, Pa-protactinium, Ra-radium, Rn-radon,  
Po-polonium, Bi-bismuth, Pb-lead

**Figure 2 Uranium Radioactive Decay Chain**

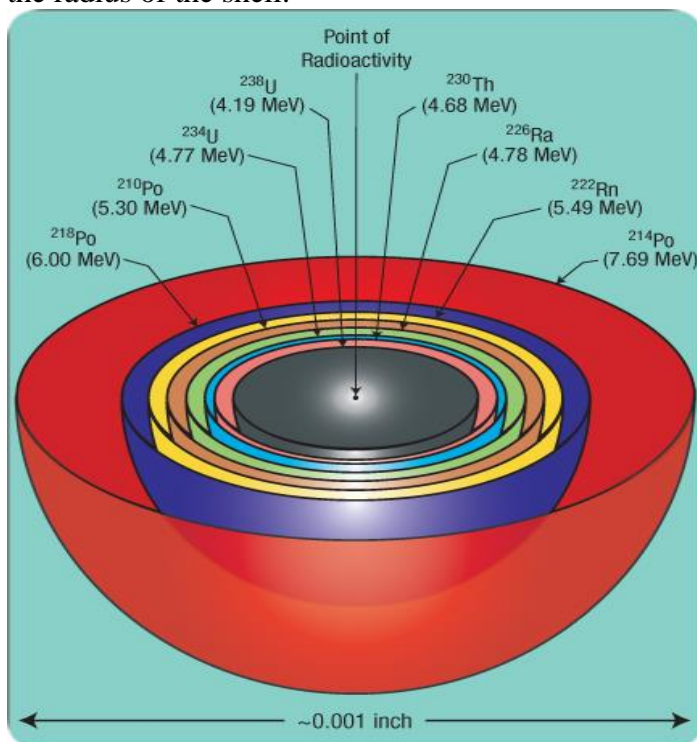
Joly was aware that uranium and its radioactive daughter products decayed in one of two ways: (1) by

ejecting a very light particle called the beta particle which causes little damage as it passes through a mineral substance, or (2) by ejecting a much heavier nuclear fragment called the alpha particle with a mass of nearly 8,000 times that of the beta particle. The alpha particle interacts strongly with a mineral as it passes through it scratching or etching it leaving a scar. Joly realized that the heavier alpha particle was the one producing the spherical halo shells as shown in Figures 3, 4 and 5.



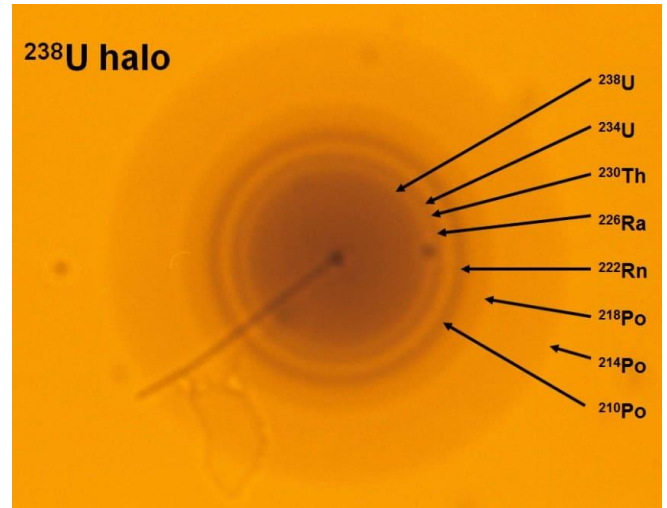
**Figure 3 Spherical Etching of Mineral By Alpha Particles from Halo Center[2]**

Of the 14 decay products coming from Uranium, 8 are produced by alpha decay and 6 by beta decay. Thus the halo pattern for uranium decay has only 8 rings as shown in Figure 4. Note the kinetic energy for each alpha decay in MeV. The greater the energy the larger the radius of the shell.



**Figure 4 Halo Shells for Decay of Uranium to Lead[4]**

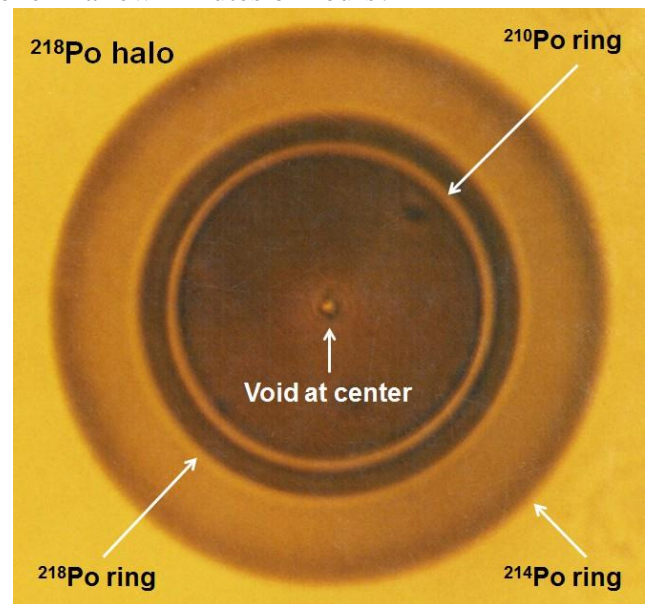
As a result of Joly's work the origin of each halo spherical ring has been explained. Also the name of the halo has been changed from pleochroic halo to radiohalo.



**Figure 5 Picture through Microscope of Uranium 238 Radiohalo in Biotite[2]**

**Implications of Radiohalo Data on the Formation and Age of the Earth.** As geologists searched through the various minerals such as biotite, they found many different radiohalos. One is shown in Figure 6.

An examination of Table 1 giving the decay half-life of the decay products of Uranium-238 reveals that the half-life of Polonium-218 is approximately 3 minutes. What does that mean? Could enough Polonium-218 escape from a crystal of Uranium to form a secondary crystal and produce a radiohalo pattern? Could this be done in a few minutes or hours?



**Figure 6 Polonium 218 Radiohalo in Biotite**

**Table 1 Decay Half-life of Isotopes of Uranium-238 [5]**

Isotope	Half-life	Energy in MeV
U-238	$4.47 \times 10^9$ years	4.196
U-234	$2.455 \times 10^5$ years	4.776
Th-230	75400 years	4.6876
Ra-226	1599 years	4.784
Rn-222	3.823 days	5.4897
Po-218	3.04 minutes	5.181
Po-214	163.7 microseconds	7.686
Po-210	138.4 days	5.304
Pb-206	stable	0

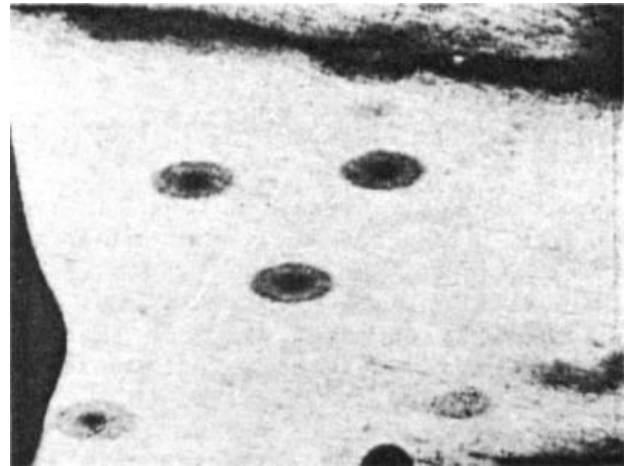
The answer to this question was discovered when radiohalos were found in coalified wood in uranium mines. The uranium had seeped into the wood and formed a crystal center fast enough and with enough polonium atoms to form a recognizable radiohalo pattern.

A close examination with a microscope revealed that the radiohalo pattern in coalified wood was elliptical in shape. See Figure 7. Using top illumination instead of bottom illumination for the microscope the center of the radiohalo pattern consisted of a long whisker crystal. Heavy elements like uranium and polonium are known to normally form whisker crystals. Thus the known secondary polonium radiohalo was not spherical but elliptical in shape. An examination of the polonium-218 radiohalo in biotite with top illumination revealed a more compact center spherical in shape suggesting that it was not of secondary origin. See Figure 7.

Some geologists have suggested that the elliptical shape of the secondary radioisotopes is due to compression. However the compression of the nearly spherical halocenter could not have made the long, skinny whisker crystal out of it when the rest of the halo was only moderately bent out of spherical shape to elliptical shape.

A speck of polonium in molten rock can be compared to an Alka-Seltzer dropped into a glass of water. The beginning of effervescence is equated to the moment that radioactive polonium atoms begin to emit alpha

particles. In molten rock the traces of the emitted alpha particles would disappear as quickly as the Alka-Seltzer bubbles in water. But, if the water were instantly frozen, the bubbles would be preserved. Likewise, polonium halos could have formed only if the rapidly "effervescing" specks of polonium had been instantly encased in solid rock.



**Figure 7 Polonium 210 Radiohalo in Coalified Wood in Elliptical Shape[6]**



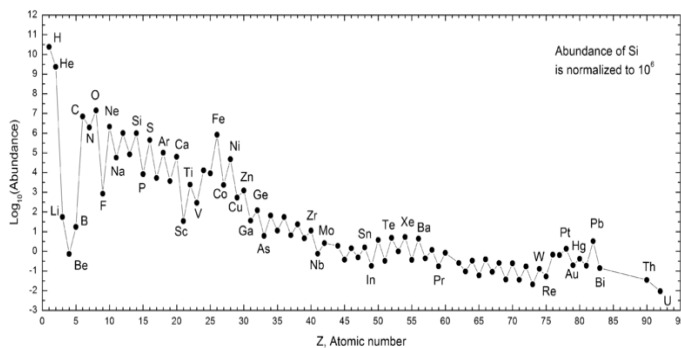
**Figure 8 Spherical Polonium-218 Radiohalo in Biotite[2]**

An exceedingly large number of polonium halos are embedded in granites around the world. Just as frozen Alka-Seltzer bubbles would be clear evidence of the quick-freezing of the water, so are these many polonium halos undeniable evidence that a sea of primordial matter quickly "froze" into solid granite. The occurrence of these polonium halos, then,

distinctly implies that our earth was formed in a very short time.

**Conclusions.** For thousands of years scientists and natural philosophers have had a number of principles that they have followed. (1) No scientific theories are allowed based upon postulates or assumptions known to be false. (2) All scientific theories must be self-consistent with one another. (3) All different types of measurements of the same quantity in science must be self-consistent with one another. The Big Bang Theory has a problem in that it does not conserve mass and energy. Initially space is empty with no mass or energy. Then it explodes with tremendous energy and mass.

The discovery of spherical primordial radiohalos and elliptical secondary Po-218 radiohalos with Po-218 having a half-life of 3.04 minutes indicates that the earth had a sudden catastrophic origin with all of the various radioactive isotopes being present. The relative abundance of the isotopes is given in Figure 9. Note that the relative abundance of the heavy nuclear isotopes declines with increasing atomic number. That means that for measuring the age of the earth using the decay of heavy nuclear isotopes, like Uranium-238 to Lead-206, one must take into account all the other more abundant nuclear isotopes that also decay to Pb-206.



**Figure 9 Relative Abundance of Earth's Nuclear Isotopes[7]**

Unfortunately the Big Bang Theory assumes that all the shorter-lived isotopes decayed away while the earth was in a molten state and need not be taken into account. The observed existence of primordial spherical Po-218 radiohalos in the crust of the earth falsifies this assumption. The result is that the decay of Uranium-Lead, Rubidium-Strontium and Potassium-Argon measurements of the age of the earth

used by the Big Bang Theory are false. See Figures 10-13 below.

## URANIUM-LEAD DECAY IN MINERALS

**ASSUME ONLY**  $^{238}\text{U} \rightarrow 8\alpha + 6e^- + ^{206}\text{Pb}$

**4.5 x 10<sup>9</sup> years**

**NEGLECT**  $^{206}\text{Tl} \rightarrow ^{206}\text{Pb} + e^-$

**4.2 minutes**

$^{206}\text{Bi} + e^- \rightarrow ^{206}\text{Pb}$

**35 years**

**AMOUNT  $^{206}\text{Tl}$  AND  $^{206}\text{Bi}$  SIMILAR TO  $^{206}\text{Pb}$**

**Figure 10 Failure of Big Bang Assumptions for U-238 to Pb-206 Decay Measurements of the Age of the Earth**

## URANIUM-LEAD DECAY IN MINERALS

**ASSUME ONLY**  $^{235}\text{U} \rightarrow 7\alpha + 4e^- + ^{207}\text{Pb}$

**0.71 x 10<sup>9</sup> years**

**NEGLECT**  $^{207}\text{Tl} \rightarrow ^{207}\text{Pb} + e^-$

**4.77 minutes**

$^{207}\text{Bi} + e^- \rightarrow ^{207}\text{Pb}$

**35 years**

**AMOUNT  $^{207}\text{Tl}$  AND  $^{207}\text{Bi}$  SIMILAR TO  $^{207}\text{Pb}$**

**Figure 11 Failure of Big Bang Assumptions for U-235 to Pb-207 Decay Measurements of the Age of the Earth**

## RUBIDIUM-STRONTIUM DECAY IN MINERALS

**ASSUME ONLY**  $^{87}\text{Rb} \rightarrow e^- + ^{87}\text{Sr}$

**5 x 10<sup>10</sup> years**

**NEGLECT**  $^{87}\text{Y} \rightarrow e^+ + ^{87}\text{Sr}$

**80 hours**

$^{87}\text{Zr} \rightarrow e^+ + ^{87}\text{Y}$

**94 minutes**

**AMOUNT  $^{87}\text{Sr}$  SIMILAR TO AMOUNT  $^{87}\text{Rb}$**

**Figure 12 Failure of Big Bang Assumptions for Rb-97 to Sr-87 Decay Measurements of the Age of the Earth**

## POTASSIUM-ARGON DECAY IN MINERALS

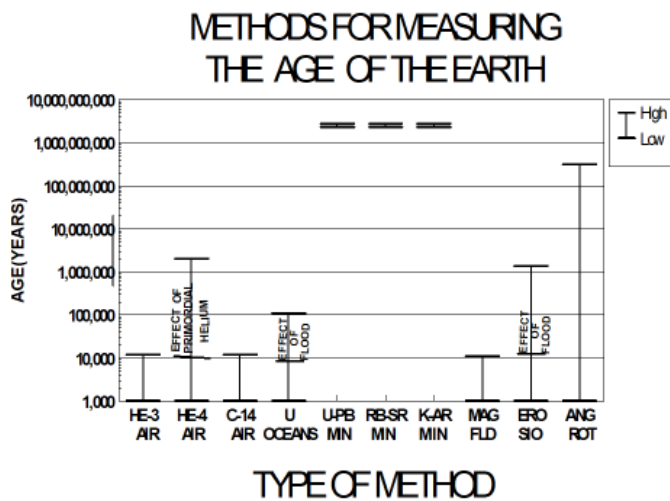
**ASSUME ONLY**       $^{40}\text{K} \rightarrow e^- + ^{40}\text{Ar}$   
                                   $1.3 \times 10^9$  years

**NEGLECT**             $^{40}\text{Cl} \rightarrow e^+ + ^{40}\text{Ar}$   
                                   $5$  seconds

AMOUNT RADIOGENIC  $^{40}\text{Ar}$  SIMILAR TO  $^{40}\text{K}$

**Figure 13 Failure of Big Bang Assumptions for K-40 to Ar-40 Decay Measurements of the Age of the Earth**

Many other measurements of the age of the earth have been made beside these measurement as shown in Figure 14. Some of them are affected by Noah's world-wide flood.



**Figure 14 Other Methods for Measuring the Age of the Earth**

Figure 15 gives the formula for the buildup of helium-3 in the atmosphere taking into account the helium-3 coming from the decay of uranium and thorium in the earth's crust and also tritium made in the atmosphere by cosmic rays. Assuming no contributions of helium-3 from short-lived isotopes gives an upper limit for the age of the earth's atmosphere of 400,000 years. If

the hundreds of abundant short-lived isotopes in the earth's crust also contributed, the age of the atmosphere drops drastically.

Also the assumption that the rate of production of helium-3 has been constant over the life of the earth is invalid. Over time the rate of production of helium-3 decreases due to the decrease in the amount of radioactive matter left to decay.

## BUILDUP OF HELIUM-3 IN THE ATMOSPHERE

AMOUNT OF HELIUM-3 IN THE ATMOSPHERE  
 = AMOUNT OF HELIUM-3 FROM URANIUM & THORIUM  
 + AMOUNT OF HELIUM-3 FROM TRITIUM DECAY  
 (INSIGNIFICANT AMOUNT)

AGE OF EARTH < 400,000 YEARS

IF SHORT-LIVED ISOTOPES ALSO CONTRIBUTE  
 AGE OF EARTH < 12,000 YEARS

**Figure 15 Failure of Big Bang Theory's Age of the Earth to Agree with Amount of Helium-3 in the Atmosphere**

Cosmic rays from outer space transmute  $^{14}\text{N}$  into  $^{14}\text{C}$  with a half-life of 5,600 years. The  $^{14}\text{C}$  starts filling up the reservoir of the atmosphere. However, the atmosphere is in contact with the oceans and the plants on the land. Thus all three act as reservoirs of  $^{14}\text{C}$ . It takes about 30,000 years at the current rate of production of  $^{14}\text{C}$  for the  $^{14}\text{C}$  to fill these reservoirs to the point that the rate of decay of  $^{14}\text{C}$  equals the rate of production. NOAA measurements of the rate of production and rate of decay of  $^{14}\text{C}$  reveal that they are not yet in equilibrium. The measured difference of 30% indicates that the age of atmosphere is less than 10,000 years. It is less than 10,000 years, because the assumption of constant cosmic ray bombardment resulting in a constant rate of  $^{14}\text{C}$  production is incorrect. The rate of cosmic ray bombardment is generally decreasing over time. See Figures 16 and 17.

The decay of the Earth's magnetic field, the erosion of salts, soil and minerals like uranium down the rivers

into the ocean, and the current angular rotation rate of the Earth are described in other documents.

## BUILDUP OF CARBON-14 IN THE ATMOSPHERE

COSMIC RAYS MAKE  $^{14}\text{C}$  FROM  $^{14}\text{N}$  WITH HALF-LIFE=5,600 YR

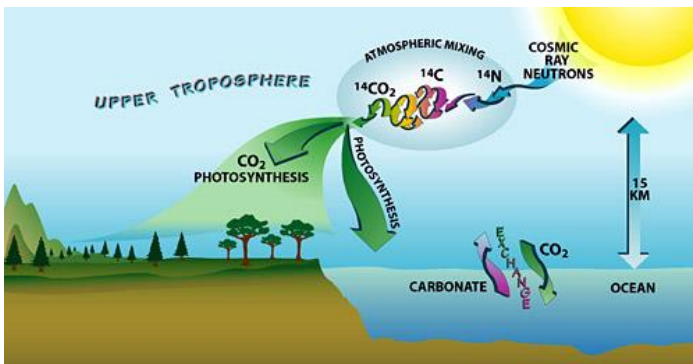
TAKES 30,000 YEARS FOR PRODUCTION OF  $^{14}\text{C}$  TO EQUAL DECAY RATE OF  $^{14}\text{C}$

PRODUCTION RATE OF  $^{14}\text{C}$  = 18.4 ATOMS/MIN/G

DECAY RATE OF  $^{14}\text{C}$  = 13.3 ATOMS/MIN/G

30 % DIFFERENCE  $\implies$  AGE OF ATMOSPHERE < 10,000 YR

**Figure 16 Failure of Big Bang's Theory's Age of the Earth to Agree with Amount of C-14 in the Atmosphere[8]**



**Figure 17 C-14 Production Illustration by Jayne Doucette, Woods Hole Oceanographic Institution[8]**

In conclusion we see that the Big Bang approach to explaining the origin of the universe and the planet earth has been falsified due to its use of false assumptions such as no conservation of energy, no secondary isotope decays taken into account to determine the age of the earth. When the catastrophic origin of the earth is properly taken into account to explain the spherical Po-218 primordial radiohalos found on every continent of the earth and ellipsoidal secondary Po-218 radiohalos due to whisker crystal formation of the secondary site plus the contribution of secondary isotope decays contributing more of the final isotope such as Pb-206, Pb-207, Sr-87 and Ar-40

than the heaviest isotope in the decay sequence, all the major ways of measuring the age of the earth now agree that it is approximately 5,000 years old.

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