**HOW OLD IS THE EARTH?**

Could our Planet really be thousands of years old as plainly claimed by the Bible rather than the billions Evolution Theory is forcing down our throats?



The question of whether the earth is billions or thousands of years old is not trivial. It is crucial for two reasons, at least. First, the Evolution Theory which boldly postulates that everything we can see and all the grand harmony in the universe came out of nothing, and by mere CHANCE, depends critically on the earth being at least billions of years old to have even an iota of credibility. On the other hand, if indeed the earth is at least billions of years old, then it in turn casts great doubt on the credibility of the Bible which suggests the earth was created less than 10,000 years ago. Once we begin to doubt the factuality of the Bible, there is no end to what will follow - as countless of sad examples have clearly shown.

**But can’t Evolution Theory be harmonized with the Bible?**

No more than Belial and Christ can reach a concord! (2 Cor. 6:15). Evolution Theory is the BELIEF (without any concrete EVIDENCE whatsoever) that there is no purpose for the Universe, talk less of a destiny (e.g. heaven or hell) for individual humans. Here there is certainly no room for any God as everything is hypothesized to proceed by pure “natural selection”. This is the core of the theory of evolution. Bible on the other hand teaches clearly that God, being omnipotent and omniscient, created everything the way He wanted them by fiat. Some people scoff and look with disdain at ‘fanatics’ who dare to believe that the earth was created in only six literal days. However, there is no other reasonable way the earth system could have been sustainable if it took more than literal days as stated in Genesis 1 for the earth to come into existence. For instance flowering plants created on Day 3 need the insects (e.g. bees) created on Day 6 to pollinate them and ensure their survival. Therefore Day 3 and Day 6 cannot be separated by a thousand years, for instance!

More serious however is the fact that the single grand theme of the entire Bible is the fact of Man’s fall and the need for a Redeemer, Jesus Christ. The Lord Jesus in Mark 10:6 clearly stated that Man was created from the very beginning of Creation and that death was introduced into the world only as a result of Man’s sin. (Romans 5:12,14; 1 Corinthians 15:21-22). Evolution however teaches that Man is a recent comer unto the earth and not only did the concept of death precede Man, death of billions of previous life-forms actually made the emergence of Man possible. Clearly if this were true, there would be no need for a Redeemer, and Bible’s claim that Jesus came to save mankind (and entire creation indeed) would be untrue!

**All this is theology. How old, really, is the earth. What are the scientific facts?**

Good question! We now proceed PURELY ON SCIENTIFIC PREMISES alone to discuss the age of the earth.

First, how is dating done? Apart from situations where hard historical records are available (about 4,000 – 5,000 years back), we have no way of dating the past without recourse to some far-reaching assumptions. As will become evident, the problem with dating is not the scientific measurements itself, but the validity of these assumptions which are required to convert sound scientific DATA to DATES. By way of illustration we can consider an hour glass-like device as shown in the figure on the next page. If we assumed that the rate of movement of sand from the top compartment to the bottom compartment is known, then we can deduce how long the sand has been falling into the bottom compartment (i.e. date!) simply by measuring the amount of sand in that compartment - provided we are sure there was no sand in the bottom compartment to start with and there are no leaks in the compartment! Hence from this simplistic illustration at least 3 basic assumptions inherent in every dating system are obvious:

**Basic Assumptions in Dating**



1. The initial state of the system being measured is known (e.g. how much sand initially in the bottom compartment)
2. The system has remained closed to external contributions during the whole period (no unknown additions or leakages to the bottom compartment).
3. The rate of transformation of the system into the present state is known (e.g. how fast is the sand trickling down?) This is usually assumed constant (uniform)

It is extremely difficult, if not outright impossible to guarantee the validity of these assumed conditions. And the longer the time period we are dealing with, the more unreasonable the uniformitarian assumption in conditions 2 and 3 becomes. There are several possible processes that can be used to estimate the age of the earth, all of them necessarily incorporating the above assumptions. The goodness of those assumptions differs for these various systems, and so the ages obtained for the earth vary from a few thousands to millions of years in the most extreme cases. The only system that yields ages of billions of years is the radiometry method, and even in this system, only if we use some particular long-lived radioisotopes. For these radioisotopes systems whose half-lives are in the order of millions and billions of years, the resulting ages can ONLY be in millions and billions of years. Even a zero age will still have to be zero million years! For instance, if it takes millions of years for a grain of sand to drop from our hour-glass mentioned above, then if due to the failure in any of the basic assumptions made, a few grains of sand is extraneously added to the compartment, then a minimum age of several millions of years is already guaranteed! We first look in somewhat closer details at radiometry dating (using long-lived radioisotopes) before looking at the other methods of dating and the results they give.

**LONG-LIVED RADIOISOTOPE DATING**

Radiometry dating is based on the transformation of one radioactive specie (radioisotope) into another. This is called radioactivity. The original radioisotope being transformed is termed the “parent” while the resulting radioisotope is called the “daughter”. The rate of transformation can be specified in terms of half-lives, one half-life of a particular parent-daughter system being the time taken for half the available amount of the parent radioisotopes to be transformed into the daughter. Now how can radiometry give us the date of the earth? The age of the earth is simply taken to be at least that of the oldest igneous rocks found on earth. These rock-types are formed by the cooling and solidification of volcanic lava released from the earth’s hot interior. It is believed that daughter products from radioactive decays occurring after the rock has cooled are trapped within the various crystals as the rock solidifies. Thus we can begin counting time from this event (‘clock’ is set); and by measuring the build-up of a particular daughter product (and usually also the decay of the parent isotope), we can deduce how long ago the whole build-up started. Hence the age of the rock.

We can now re-state what the fundamental assumptions, previously stated, translate to in the particular case of radioisotope dating and see how accurate these are:

1. The initial level of the daughter product in the crystals of the rock is known – often assumed to be zero

2. None of the atoms of the daughter or the parent has migrated out of the particular crystals being used for the measurements, and none also have come in from the outside. Hence, the system is closed. If this were not true, then the system will be taken as ‘undateable’ by that technique.

3. The rate of radioactive transformation of parent to daughter is not only known, but is constant throughout the entire period

There are currently over forty different radiometric dating techniques being used, each based on a different pair of long-lived isotopes (see Table 1 for a few of the popular ones). Each of these has its peculiar way of trying to ensure the validation of the above-stated basic assumptions. Although these are mainly ingenious and impressive, the fact is that none is adequate and in many situations all the assumptions are easily seen to be seriously flawed. The magnitude of error introduced by the flaws is directly related to the magnitude of the half-life of isotopes being used! We will take a quick look at the more obvious and well documented flaws. There are several other technical ones which we cannot discuss in this short write-up.

Table 1: List of some common radioisotope ‘clocks’ used for radiometry dating

|  |  |  |
| --- | --- | --- |
| Parent Radioisotope | Daughter Radioisotope | Half-life (in years) |
| Samarium-147 | Neodymium-143 | 106 billion |
| Rubidium-87 | Strontium-87 | 48.8 billion |
| Rhenium-187 | Osmium-187 | 42 billion |
| Lutetium-176 | Hafnium-176 | 38 billion |
| Thorium-232 | Lead-208 | 14 billion |
| Uranium-238 | Lead-206 | 4.5 billion |
| Potassium-40 | Argon-40 | 1.26 billion |
| Uranium-235 | Lead-207 | 0.7 billion |
| Beryllium-10 | Boron-10 | 1.52 million |
| Chlorine-36 | Argon-36 | 300,000 |
| Uranium-234 | Thorium-230 | 248,000 |
| Thorium-230 | Radium-226 | 75,400 |
| Carbon-14 | Nitrogen-14 | 5,730 |

**Faulty Assumption 1: Initial level of daughter product is known.**

It should be clear that there is simply no way of ascertaining what the initial levels of the various radioisotopes were as the rock cools! Uncertainty in the initial level of the daughter is perhaps the most cited reason for explaining the myriads of so-called ‘bad dates’ that characterize radiometry dating. For instance, igneous rocks from volcanic eruptions noted to occur in 1941, 1954 and 1975 at Mount Nguaruhoe (New Zealand) were sent to two reputable laboratories for analysis. Using by the much acclaimed K-Ar method, dates between <0.27 million to 3.5 million years were obtained! (Snelling A.A.:The cause of anomalous Potassium-argon ‘Ages’ for Recent Andesite Flows at Mt. Nguaruhoe, New Zealand, and the implications for Potassium-argon Dating,”. Proc. 4th ICC, 1998, pp. 503 – 525). Believers in the antiquity of the earth protest that the matter is just as simple as not using the million years half-lived isotopes for ‘young’ samples; but what if ALL SAMPLES are actually ‘young?’ As a matter of fact, radiometry laboratories will require that an expected age of the sample be supplied before such can be radio-dated, ostensibly to ensure that the ‘right isotope’ is used.

**Faulty Assumption 2: The system is “closed”**

Of course, it is well-known that most systems are not closed and radioisotopes can be leached out or incorporated into the crystal under study. What is done is simply to look for tests that can confirm whether the crystal is closed to a particular parent-daughter radioisotope system. This involves the use of so-called “Isochrons”. In principle, the establishment of Isochrons should assure us that our assumption is valid and we could go ahead to use such a parent-daughter pair for radio-dating. Where no isochrons can be established, we seek another method. However, the reality on ground is eloquently attested to by the several cases of ‘anomalous’ isochrons that have come to be defined in the scientific literature. These are situations where ‘bad dates’ still result even where valid isochrons have been established. A current list of various names given to such false isochrons include “apparent isochron”, “mantle isochron”, “pseudoisochron”, “secondary isochron”, “source isochron”, “erupted isochron”, “mixing line”, “mixing isochron”, etc. All these can be responsible for ‘bad dates’, with the explanation usually coming only after the date obtained has been adjudged unacceptable. Clearly something is wrong here, and who knows what else are yet to be discovered? According to an expert in the field (an evolutionist, by the way):

*“Some of the basic assumptions of the conventional Rb-Sr isochron method have to be modified and an observed isochron does not certainly define valid age information for a geological system, even if a goodness of fit of the experimental results is obtained in plotting Sr-87/Sr-86. This problem cannot be overlooked, especially in evaluating the numerical time scale. Similar questions can also arise in applying Sm-Nd and U-Pb isochron methods” Zheng Y.F. Influence of the Nature of Initial Rb-Sr System on Isochron Validity, Chemical Geology, 1989, 80:1-16 (p.14)*

**Faulty Assumption 3: Constancy of radioactive decay rates**

This is generally held to be the most ‘water-tight’ of the 3 assumptions:

*“….there is no reason to doubt that the decay constants of the naturally occurring long-lived radioisotopes used for dating are invariant and independent of the physical and chemical conditions to which they have been subjected”*

Faure, G., Principles of Isotope Geology, 2nd ed., John Wiley & Sons, New York, p. 41, 1986.

However, in recent years, the story is fast changing. And in fact it is now clear that the more serious errors for dating work can be introduced from this faulty assumption.

 For decades theoretical physicists have hypothesized the possibility of changes in radioactive decay rate in a process called bound-state β- decay; and one analysis in 1987 suggested that a significant perturbation of radioactive decay rates could occur in the nuclides of 25 different elements as a consequence of the process.  Subsequently, by the 1990s, experimental demonstrations of acceleration of radioactive decay rates in bound-state beta decay have been reported. One of these reports involved the rhenium-osmium (187Re-187Os) system which is one of the commonly used isotopic ‘clocks’ for radiometry dating. In the experiment which involved the circulation of fully-ionized 187Re in a storage ring, the 187Re ions were found to decay with a half-life of only 33 years, a staggering billion-fold increase over the conventional half-life of 42 billion years! (See table 1). In short, a process that actually took place in 33 years can be erroneously thought to have taken place in 42 billion years! This is a **scientific FACT.** (Bosch, F. et al, Observation of bound-state β- decay, Physical Review Letters 77 (26), 5190-5193, 1996)

It has also been PROVEN AND DEMONSTRATED that physical conditions, such as would have prevailed during Creation or Big Bang (whichever one chooses to believe) can significantly affect radioactive decay rates. For instance, at very high temperatures, the Lutetium-Hafnium system – one of the new methods for radiometry dating, see table 1 - bypasses the conventional slow route, and goes into an isomeric state which has a half-life of only 3.68 hours. (Kappeler, F., Beer, H., and Wisshak, K., S-process nucleosynthesis – nuclear physics and the classical model, Reports on Progress in Physics 52:1006-1008, 1989).

All other technical factors taken together then, it effectively amounted to the half-live of 176Lu being reduced from its conventional 41 billion years to only about 8 days! According to Woodmorappe, “This exciting demonstration that isotopic ‘clocks’ can be accelerated at least a billion-fold ….. raises fundamental questions about [their] temporal stability …. What *else* have we failed to consider in the physics of radioactive decay?”

Even chemical conditions HAVE BEEN SHOWN to affect radioactive decay rates. In a recent paper, Huh showed that up to 1.5% variation could be introduced into the half-life of the radioisotope 7Be, due to the chemical environment (Huh, C.-A., Dependence of the decay rate of 7Be on chemical forms, Earth and Planetary Science Letters 171:325-328, 1999)

 There are several other possibilities that could result in even more acceleration of decay rates, whatever the modes. For instance the evidence is mounting that the speed of light has been decreasing over the years (see Guardian June 8, 2000, p.29 for a layman’s review). Should this be proven, it will follow automatically that all radioactive decay rates would have been considerably greater than they now are, some thousands years ago. We can leave a discussion of this and the myriads of other geological evidences for more technical references.

**DISCORDANT DATES**

 When scientists discuss dating, the public is usually not told the many problems involved and the great discrepancies in the results obtained. For instance hundreds of cases could be cited showing discrepancies in dates obtained by different radiometry systems. A few examples:

* Coal from Russia (the “Pennsylvanian”) supposedly 300 million years old was dated by Carbon-14 (C-14) method at **1,680** years. In fact any coal older than 70,000 years should not contain any C-14 whatsoever (half life of only 5730 years). HOWEVER, NO C-14 - FREE COAL HAS EVER BEEN FOUND! True, young coals are continually produced, but where are the old ones? This remains one of the scientific “puzzles” of our time.
* Wood found clearly buried in lava flow. Wood dated by C-14 at **45,000 years** but Basalt dated by Potassium-Argon method at **45 million years**.
* Below are actual results obtained for ages of 5 uraninite crystals from Australia
	+ Using lead-lead isochron : 841 ±140 Million years.
	+ Using Thorium-lead isochrons:275, 61, 0, 0, 0 Million years
	+ Using Other isotopes: 1550 – 1650 Million years

Hence dates ranging from 0 – 1.7 billion years for the same materials! There are other compelling evidences that the millions and billions of years obtained in radiometry are nothing but hogwash. A few interesting indications:

* The Antartic ice cap is supposedly 60 Million years old; but a detailed map of an ice-free Antartic, historically dated 1513, hangs at National Museum of Turkey. Details found on this map have been scientifically confirmed. The simple clear implication: there was no ice on the Antartic as recently as 1513. So much for millions of years!
* Red blood cells and hemoglobin have been found in some (unfossilized!) dinosaur bone. These could not last more than a few thousand years – certainly not the 65 Million years since the last dinosaurs were supposed to have lived. In any case those who insist dinosaurs lived millions of years ago have to explain the widespread oral (and even written historical evidences – eg Job 40:15) that man co-existed with dinosaur-like creatures, now extinct, only a few thousand years ago.
* Musk ox muscle dated at 24,000 yrs, but hair of same ox dated at 17,000 yrs!
* Eleven human skeletons, the earliest known human remains in the western hemisphere, have been dated by the new accelerator mass spectrometer technique for C-14. All 11 dated about 5,000 radiocarbon years or less (R. E. Taylor, *Major Revisions in the Pleistocene Age Assignments for North American Human Skeletons by C-14 Accelerator Mass Spectrometry,* American Antiquity , Vol. 50, No. 1, 1985, pp. 136-140.

The scientific genius Einstein was reputed to have said that whereas a thousand concordant data cannot prove his theory, only a single discordant one is sufficient to falsify it. Radiodating is falsified by the thousands of discordant data it produces annually. For an exhaustive treatment and listings, see The Mythology of Modern Dating Methods by John Woodmorappe or Radioisotopes and the Age of the Earth by Vardiman et al. both available from the Institute for Creation Research, Box 2667, El Cajon, CA 92021, USA.

**WHAT THEN IS THE TRUE AGE OF THE EARTH?**

Of course no one can say the exact age of the Earth. But as previously stated, there are several terrestrial processes that could be used to obtain a rough estimate. Even when making exactly the same assumptions that are made in Radiometry they all yield ages far, far less than the billions of years obtained by radiometry dating. A few of these are listed:

* **Salination of the Oceans:** If we measure the rates at which salts (or various other chemicals, up to 30 have been identified) are being added to the oceans by river and coastal erosion, depending on the particular salts/chemicals used, we obtain ages for the oceans ranging from a few thousands to a few hundred million years. This is assuming there were no salts in the oceans to start with, and the rate of salination has been constant. Both obviously incorrect and leading to gross exaggeration.
* **Decay of Earth’s Magnetic field:** the earth’s main dipole magnetic field is known to be decreasing. Extrapolating back in time, it is clear that the earth could not have supported life over 10,000 years ago.
* **Short -Term Comets**. As comets go around the sun in their elliptical orbits, they lose part of their materials in what is seen as the “tails”. If the solar system had existed for billions of years, no comet should remain in circulation. Indeed, calculations based on Halley Comet give the age of the Solar System as only 23,000 years. (Nature, vol 339, May 11, 1989)
* **Meteoric Dust:** Considering that meteoric dust settles on earth at an estimated rate of 14.3 million tons per year, in the billions of years alleged as the age of the earth, we should have a layer of about 54 ft thick over the earth. On the moon where there is no atmosphere or oceans to disperse the dust, the Apollo team were bothered there would be hazard from the thick dust. It turned out that the dust is only about 1/8th of an inch, corresponding to less than 10,000 years
* **Population growth:** If man had been on earth for the 100,000 years suggested by evolution theory, every single space on earth should have been filled with human beings!. In actual fact, following the practices used for dating, if we assume that the current population growth rate of about 2% has been uniform, and starting from one man and one woman, it will take only 1,100 years of exponential growth to generate the current human population of 6 billion!
* **Historical evidences:** The limit of recorded history and civilization for mankind is about 4,000 years (6,000 years if one believes in the book of Genesis in the Bible). What was man doing on earth prior to this time?

 The overall evidence for the young age of the earth and its implications are clear enough. The question to the reader is, can you afford to believe the Truth? We close with a relevant passage from the Scriptures:

“NEVERTHELESS AMONG THE CHIEF RULERS ALSO MANY BELIEVED ON HIM; BUT BECAUSE OF THE PHARISEES THEY DID NOT CONFESS HIM, LEST THEY SHOULD BE PUT OUT OF THE SYNAGOGUE: FOR THEY LOVED THE PRAISE OF MEN MORE THAN THE PRAISE OF GOD” John 12:42-43

**The choice is yours.**

For a more technical write-up get the article Radiometry Dating and the Age of the Earth available at our Secretariat, Shop 7 OAU Conference Centre Annex, OAU, Ile-Ife or on our website [**www.ChurchArise.org**](http://www.ChurchArise.org)