

Nature's Record in the Dating of Creation

By Raymond C. Faircloth

Encouragement to Observe Nature

THE BELGIC CONFESSION (a key Reformation creed) says:

We know Him [God] by two means: First, by the creation, preservation and government of the universe, since that universe is before our eyes like a beautiful book in which all creatures, great and small are as letters to make us ponder the invisible things of God: his eternal power and his divinity, as the apostle says in Romans 1:20...Second, he makes himself known to us more openly in his holy and divine Word...

- ❖ “Ask the beasts and let them teach you...or speak to the earth, and **let it teach you.**” (*Job 12:7, 8*).
- ❖ “He did not leave himself without **witness**, in that He did good...satisfying your hearts with food and gladness.” (*Acts 14:17*).
- ❖ “Since the creation of the world His invisible attributes...have been clearly seen, being under-stood through **what has been made.**” (*Rom. 1:20*).
- ❖ “The heavens are telling the glory of God: and their expanse is **declaring the work of His hands...**” (*Ps. 19:1*).

From the above Scriptures it is evident that we may add to our knowledge of God by observing nature's record.

The Bible Should Not Be Studied In an Interpretive Vacuum

CORRECT INTERPRETATION BRINGS HARMONY

We read in both nature's record and the Bible record that God does not tell lies. So both the Scriptures and nature's record must harmonize. If one holds a view whereby these two do not harmonize then the interpretation of one or the other is inaccurate. In other words either one's scientific interpretation of nature's record is wrong or one's theological interpretation of the Bible record is wrong.

INTERPRETATION THAT REJECTED SCIENTIFIC KNOWLEDGE

In the 16th century Luther, Calvin, Melancthon and later John Wesley all rejected the idea of a moving earth as proposed by Copernicus. This rejection was based on Joshua's command for the sun to stand still as well as statements in the Psalms that “*the earth is firmly established; it cannot be moved.*” (Ps. 93:1, 96:10, 104:5). Furthermore, there was, at the time, little evidence available to the general public for a moving earth. Nowadays we can see the wisdom of interpreting these Psalms poetically and the sun's movement only as taken from the viewpoint of man on earth. So if, today, one interpreted these Scriptures so as to state that the earth really does not move, then one would imply that God is deceiving man by giving a false appearance of the way the solar system works. So concerning the fight between faith and science theologian Edward Fudge comments:

This dilemma is both tragic and unnecessary according to Dr. Francis S. Collins, head of the Human Genome Project and author of *The Language of God: A Scientist Presents Evidence for Belief* (Free Press, 2006) ... The key to “a comfortable synthesis,” he believes, lies in recognizing the roles and limits of both science and faith. Regarding origins, he says, it is the role of science to answer the questions “when?” and “how?” and the role of faith to answer “who?” and “why?” Having seriously studied the Bible for more than 50 years, I wholeheartedly agree with Collins' assessment of which questions the Bible intends to answer and which answers science is equipped to resolve. I also agree with Collins when he tells *Christianity Today* that “God is the author of all truth. You can find him in the laboratory as well as in the cathedral.

Superior Modern-Day Interpretation of Nature's Record

Superior modern-day technology and methods of observation must be allowed to affect one's approach to Bible interpretation.

THE UNIVERSE HAD A BEGINNING

The remnants of the initial creative burst (the so-called ‘Big Bang’) have been observed. This proved Einstein’s prediction that the universe had a beginning to be true. Such a beginning of the universe is just what evolutionists do not want because it does not allow enough time for any proposed evolution to have taken place.

Nature’s Record Reveals an Ancient Universe

Subject to accuracy of methods of measurement, the testimony of the natural world is that it is very old, being possibly about 4.5 billion years old. This observation of nature does not contradict God’s special revelation through the Scriptures. Yet no non-Bible believing scientist believes the universe to be only thousands of years old. They along with many Bible believing scientists understand that the universe came into existence 13.7 +or- 0.2 billion years ago. They do so for the following reasons:

1. The expansion of the universe.

Because the velocity of this expansion and the distance between galaxies can be measured scientists can calculate backward to the starting point and determine that the universe is 13.7 billion years old. Because these are astronomical calculations they have only a small margin of error.

2. Distant starlight.

Such light takes billions of years to reach earth. Light travels at 186,000 miles per second and this speed has been constant for at least 14 billion years according to measurements on the spectral line in distant galaxies. Light from the Andromeda nebula takes 2 million years to reach earth, indicating the universe is at least that old.

3. The age of the sun.

The various measured characteristics of the sun, namely its effective temperature, luminosity, spectra, radius, outflow of neutrinos, and mass guarantee that the burning of the sun by nuclear fusion has been proceeding for about 5 billion years.

Eight ‘Young Earth’ Science-Based Challenges to an Ancient Universe

1) Astronomers are wrong about the distances (and therefore the age) to the stars/galaxies.

Reply:

If the universe is young, then this light could not be here yet. Stars must be distant and therefore large. Otherwise, they would be smaller than the minimum size necessary for stars to burn and, therefore, could not exist.

Direct methods used by astronomers:

Because of the **Hipparcos satellite** astronomers have been able to obtain precise trigonometric parallaxes to several global clusters out to about 3,500 light years. Radio astronomers have used very long **baseline interferometry** (a technique employing multiple telescopes in unison) to measure accurate trigonometric parallaxes to pulsars. The **Hubble space telescope** was used to measure expansion parallaxes to planetary nebulae as distant as 5,300 light years.

Indirect methods used by astronomers:

Redshifts of spectral lines. The Brightness of type 1a supernovae and Cepheid **variable stars**—their rate of blinking is directly related to how much light they emit. These methods confirm the direct methods.

The universe is large. This is proof that it is old. If Adam had lived in a young universe it would have been small and with no stars for him to view; yet Day 4 shows that Earth did receive light from the stars.

2) God could have created light waves already in transit.

Reply:

Astronomers note that the **spectral lines** of stars and galaxies are broadened in direct proportion to the distance they travel. This indicates light-travel times of 12 or 13 billion years. So, for God to have made the light appear to have already travelled several billion light-years when it has, in fact, only travelled a few thousand is to suggest that He has deliberately deceived us on a vast scale. It would suggest that God artificially fixed the broadening and reddening of the light individually from 10 billion trillion stars and 100 billion galaxies to have travelled for only 10,000 years. The same is true of **exploding stars**. Their light which we see would have come from stars which never existed. They would have exploded before they were created.

3) Light may have travelled faster in the past.

Reply:

There is no proof of this. There is only 3% difference between the calculations of the speed of light by Olaus Romer in 1675 and of the current calculations. The velocity has been constant for more than 50 measurements over 325 years. The existence of stars depends on this constancy.

Since the c in $E=mc^2$ is the speed of light, its constancy is paramount for matter to exist. If it were not for Planck's constant, which relates the energy of a photon to its frequency, stars of mass greater than 0.8 solar masses or smaller than 1.4 solar masses would not be able to form.

4) Light may have taken a shortcut through space.

Reply:

This is an attempt to overthrow $E=mc^2$. No mathematical proof has ever been given in support of this assumption. One problem with this idea is that light would reach us from 2 different directions so that we would see duplicate images of all stars and galaxies. Astronomer and Creationist Danny Faulkner does not see a solution to the light time travel problem, p. 275 of "In Six days."

5) Distant clocks run at faster rates.

Reply:

Humphreys proposed that the Earth was the geographical centre of a bounded universe which initially was a ball of water of 2 light years diameter that became a black-hole and then evaporated to become a **white-hole**. With the Earth at the centre of the whole, Earth clocks would run slowly relative to clocks in distant parts of the universe. This scenario violates nearly every law of physics and is discounted by experts in general relativity because it does not yield the required gravitational time dilation. Even the tiniest black-hole would take about 15 billion years to become a white-hole.

Astronomers observe 'clocks' near and far in the Universe that run at nearly the same rate. And the observable cosmic expansion (by redshift measurement) does not happen at the rate that Humphreys proposes. Our galaxy cannot be the geographic centre of the universe because it is being pulled toward the Virgo cluster which is being pulled toward the Great Attractor etc.

6) Earth-based clocks once ran at slower rates.

Reply:

This is Hartnett's revision of Humphreys' model. On day 4 Earth's clocks supposedly sped up by 10 trillion times to bring them into line with the distant universe. This would mean that Earth's rotation rate and plate tectonics would speed up by 10 trillion times. However, a time discontinuity between our solar system and the rest of the universe cannot occur because Earth is dynamically connected to the rest of the universe.

7) Radiometric decay was faster in the past.

Reply:

Astronomers directly observing radiometric elements as they were thousands, millions and billions of years ago can confirm to geophysicists by the measured abundances of these elements that the radiometric decay rates have not varied through time. Constancy of radiometric decay rates is essential for life. If the decay rates were thousands of times faster at any time, even long before Adam, there would be no possibility of life on Earth. Additionally, the released heat would evaporate Earth's water and melt the rocks.

8) You weren't there!

Reply:

Astronomers cannot observe or record the present but they **can observe the past**. When they study the Crab Nebula (4000 light-years distant) they are recording the physics of God's creation 2,000 years before the birth of Jesus.

Scientific Reasons for an Ancient Earth

NATURE'S CALENDARS

- **Dendrochronology**
- Greenland's **ice layers** provide a continuous record of the past 110,000 years.
- **Coral reef layers** extend back 400,000,000 years.
- **Magnetic Orientations**. Every 10 miles or so on each side of the Mid-Atlantic ridge the direction of the magnetic field background reverses. This is an indicator of the reversal of earth's magnetic field every million or so years. Hundreds of these magnetic domains have been measured on the ocean floor showing that the earth is at least hundreds of millions of years old.

These natural calendars largely confirm radiometric dating methods.

RADIOMETRIC DATING

This is based on the half life decay of radioactive isotopes. There are 40 different methods. The fact that there is no more naturally occurring plutonium-239 (half-life 24,110 years) convinces geophysicists that Earth must be older than $15 \text{ half lives} \times 24,110 = 361,650$ years. No Plutonium-244 means that Earth is at least $15 \text{ half-lives} \times 83 \text{ million} = 1,245$ million years.

Conditions Required for Reliability:

1. Proximity of the actual date to the half life of the radiometric chronometer e.g. Carbon 14 (used for organic materials only) has a half-life of 5,715 years and is unsuitable for samples older than 35,000 years. Uranium-238 has a half-life of 4.51 billion years and it is, therefore, ineffective for samples less than several million years old.
2. Adequate sample size. Small samples provide only crude dates. The bigger the better.
3. Purity of sample. The investigator can sometimes isolate the original from contaminants by taking numerous readings.

Most *Young Earth* criticism focuses on inaccuracies when the method is applied outside its limitations.

Have Decay Rates Changed?

Astronomers directly observing radiometric elements as they were thousands, millions and billions of years ago can confirm to geophysicists, by the measured abundances of these elements that the radiometric decay rates have not varied through time. Furthermore, the amount of Argon-40 in Earth's atmosphere matches well with what would be expected from 4.5 billion years of potassium-40 decay (which decays to Argon-40). The same result applies to uranium-238, uranium-235, thorium-232 and their three different lead isotopes end products. These give an investigator three independent tools for determining age in a sample. The rubidium-strontium 'isochronal' method leaves no question about the original abundances of these elements in all situations. So when different methods using different decay processes, half-lives, isotope ratios, and isochrones are applied to a particular sample and all produce the same age, they calibrate one another, removing much of the uncertainty. So geologist and *Young Earth* creationist Elaine Kennedy states:

Those of us who believe in a short chronology...do not have an adequate explanation for radiometric dates.
In Six Days p. 315.

All this is not to say that there are no problems with Carbon-14 dating and Potassium-Argon dating; but they are not sufficient to discount them as methods.

A Somewhat Faulty System Does Not Prove a Young Earth Creation

The geologic column is built up from various locations and is therefore theoretical. There is not one example of a complete column. For example, Grand Canyon has hundreds of millions of years of deposits missing. The actually existing geologic layers take millions of years to form and show distinct divisions with distinct species in each that appear suddenly and complete. This is contra evolution. It is also contra a young earth scenario. Furthermore, the potassium-argon dating method suffers from a fatal flaw in its assumption of no initial argon trapped in volcanic rocks at the time of their solidification, according to *Young Earth Creationists*. Radiometric dating is based on the assumption that there was no daughter element present when the rock was formed - there is no way of telling this. According to *Young Earth Creationists* the basis for dating rocks is evolution. Physicist Robert Gentry stated that: "all the dates determined by radioactive methods may be out by orders of magnitude."

Scientific Proposals and Details Related To the Creation

CREATION IN STAGES

Genesis 1 indicates that all of God's activities were in preparation for the introduction of mankind. Hence Genesis 1 is not a description of the natural history of the surface of planet Earth or of the introduction of all life on Earth. However, it does, by analogy, indicate that God progressively created everything in stages because of the breaks of "and there was evening and there was morning" i.e. periods of cessation before beginning the next stage. The following datings relating to the stars, sun, moon and earth are those which are given as current estimates by the scientific community.

THE CREATION OF THE PHYSICAL UNIVERSE INCLUDING ALL THE LIGHT SOURCES

- According to a new solar age determination method based on helioseismic data **the sun** is claimed to be **4.57 +or- 0.11 billion years** old. At a possible age of **4.25 billion years the moon**, with its crust being chemically distinct from that of the earth, is younger than the **4.5 billion year** age claimed for **the earth**.
- Each year the moon moves 4cm farther from the earth. By extrapolation *Young Earth creationists* teach that the moon would have been in contact with the earth 1.3 billion years ago about 1/3 of the proposed dating of 4.25 billion years ago. Nevertheless, this dating does not fit with the teaching of an earth that is only 6000 years old.
- The rotation rate of Earth is slowing, bringing calmer conditions. It lengthens by 4 hours per day per billion years.

EARTH'S SURFACE COVERED IN WATER

- There is oxygen-isotope evidence from ancient zircons for liquid water at Earth's surface 4.3 billion years ago.
- Oxygen sufficient for photosynthesis is claimed to have first appeared between 4.1 and 4 billion years ago. Theoretically, Earth's atmosphere should be heavier and thicker than that of Venus.
- The fossil record of small **primitive sea creatures** is stated to extend back 3.5 billion years. The fact that sea shells have been discovered in many very high locations indicates that the seas were full of at least a few species of simple life. These were then thrown up as the dry land appeared.
- Carbon-13 to carbon-12 ratios in ancient apatite grains indicate that life apparently goes back to 3.86 billion years.

The context of **Psalm 104** is that of creation Not of Noah's Flood:

- ❖ "...stretching out the heaven...establishing the earth...covered it with the deep...the waters were standing above the mountains. **The mountains rose; the valleys sank...**You set a boundary, so that they [*the waters*] will **not** return to **cover the earth.**" (*Ps. 104:2-9*).

See the NIV study notes and Bible cross references which link to other creation accounts. Also note what most commentaries say. These verses do not mandate that the land was manufactured ex nihilo on this day. The text indicates that one land-mass (Pangaea) began to split apart through tectonic plate movements. Such movements are at the rate of ½ inch per year to form the 7 continents. This tectonic and volcanic activity is now one fifth of its original level.

TREES and VEGETATION

These are dated as being from 370 million years ago and flowering plants from 290 million years ago. **Vegetation** "sprouting forth" means that it was growing. Such growing is not accomplished in 24 hours. Plants on land need a day-night cycle and a water cycle to survive.

EARLY LIFE

The sun shines about 35% more brightly today than it did on Earth's first life forms. Primitive forms of life including vegetation require much less light than do advanced forms.

BIRDS AND SEA CREATURES

Fossils of four extinct species of whales have been dated to 52, 52, 50 and 48 million years ago respectively.

LAND ANIMALS

The 3 Genesis classifications were not the only land animals. These were the ones God created to co-exist with humans. Unless or until further discoveries reveal otherwise, the fossil record shows that there were **land mammals before the first sea mammals**.

PRIMITIVE BIPEDALS (500,000+ years ago according to scientists)

God's direct creation of bipedal, tool using, large-brained primate animals of which Neanderthal may be just one of a series, each one more skilled at hunting than the one before. The Croatian specimen is dated to

40,000+B.C and the infant specimen to 27,000 B.C. Yet, Neanderthals have no biological link with humanity or apes and analysis of mitochondrial DNA shows that they have made no contribution to the human gene pool. Other differences are:

- The spinal hole at the base of the skull in Neanderthals is oval not round.
- The lower jawbone is squarish not triangular.
- A unique bony protrusion near the rear of the lower jaw is evident in Neanderthals.

Through his studies of samples of Neanderthals Jack Cuozzo determined that Neanderthals had a life span of between 250 and 300 years. See *In Six Days* p. 290.

HUMANS

Science gives a date of c.50,000 B.C. Even if an arbitrary but generous 20% margin of error is allowed for errors in dating methods regarding the time when Adam was created, this would give a date of 40,000 B.C. This date would likely be more in the area of the Genesis 5 evidence. However, this margin of error does not move these events back in time to only 6,000 years ago as in *Young Earth Creationism* for the creation of mankind.

1. Evidence of man's spiritual dimension—**religious artefacts**—date to between 6,000 BC and 24,000 BC.
2. The most ancient remnant of **advanced art** is dated to 32,000 years old (allow for error in dating methods).
3. Evidence of clothing, jewellery making and **complex language** is dated by archaeologists to about 40,000 years ago (note margin of error).
4. The measurement of diverse peoples' differences in **mitochondrial DNA** and **Y-DNA** reveals dates of 37 to 49 thousand years ago for the most recent common male ancestor—Noah. (This is because males receive a large portion of the Y chromosome from their fathers only) and about 50 thousand years ago for the most recent common female ancestor—Eve, because the four women on the ark were not blood related to Noah (This is because all of us get most of our mitochondrial DNA from our mothers only).
5. The Chinese date their origin as long before 4,000 BC.
6. American Indians date their origin to 9,500 BC.
7. Australian Aborigines date back to 25,000 BC. (Allow for error in dating methods).
8. European advanced cave art dates back to 30,000 BC. (Again allow for error in dating methods).

Failure of 'Young Earth' Science-Based Proofs

Earth could not exist in a younger universe defined by the laws of physics as they exist. To adopt such a view of the universe would also require abandoning most earth sciences and astronomy. 'Young Earth' proponents teach that:

- 1) **Galaxy clusters** would be more widely **dispersed** if the universe were old.

Response:

This is based on the wrong assumption that the luminous mass is the total mass; whereas the luminous mass is only 1/7th of the total mass. This extra mass greatly lengthens the dispersal times. Also, by treating the galaxy as a mathematical point rather than the star, results in a misapplication of the calculations. The dispersals that astronomers see in galaxy clusters indicate that those clusters are 10 to 13 billion years old.

- 2) Computer models of galaxy structures show that **spirals** tend to collapse after 2 or 3 rotations, so spiral galaxies must be very young.

Response:

As long as new stars continue to form at a significant rate within a galaxy, the spiral structure remains intact. Star formation in spiral galaxies seems prolific.

- In the vicinity of the Milky Way 6% of galaxies are spirals.

- At 4 billion light years distant 30% are spirals.
- At 10 billion light years distant 50% are spirals.
- This is the expected pattern for a universe that is 13.7 billion years old.

3) The lack of greatly expanded **supernova remnants** proves that remnants have been expanding for no more than a few 10s of thousands of years.

Response:

A supernova explosion occurs when a massive star burns up all its fuel. This takes several million years. There are many observational difficulties, but a breakthrough came in 2002 when an extended supernova remnant centred on the constellation Antila Pneumatica was discovered right within our solar system. Its age is calculated at 1.1 million years or more. Furthermore, the supernova remnant GSH 138-01-94 is 4.3 million years old. Other million-year plus SNRs have been discovered and many more are anticipated.

4) Since a **comet's average life span** is only a few thousand years and the supply of comets is limited, the existence of comets today proves the solar system cannot be more than several thousand years old.

Response:

Halley's Comet has an estimated life span of 40,000 years, Kohoutek 40 million years and Griggs-Mellesh 1.5 billion years. These two latter comets are more typical. In 1993 and to a greater extent in 1998 new imaging technology enabled astronomers to find hundreds of asteroids and comets in the Kuiper Belt that extends 1½ billion miles beyond Neptune's orbit. These show age-signs of at least a few billion years.

5) The **Sun burns by gravitational contraction**, so it must not be billions of years old.

Response:

The measured characteristics of the Sun are its effective temperature, luminosity, spectra, radius, outflow of neutrinos, and mass. These factors establish that the Sun is burning primarily by nuclear fusion which has been proceeding for 4.5 billion years. For 3 decades astronomers wondered why they detected only 1/3 of the neutrinos that nuclear burning should produce. The detectors were tuned to only one of the 3 types of neutrino which have now been discovered to oscillate from one type to another. In 2001 the Sudbury Neutrino Observatory and the Super-Kamiokande Detector confirmed that nuclear burning, and not gravitational contraction, accounts for virtually all of the Sun's energy output and is very stable. This indicates that the Sun is middle-aged because all observed young stars burn erratically for the first 50 million years.

6) The **faint sun paradox**. If one believes that the sun is ancient then 3.86 billion years ago the sun was 30% less luminous than it is today and one must concede that the earth had a green-house effect that has continued to grow and making it impossible for life to still be existing on Earth.

Response:

Two processes gradually remove green-house gasses:

- a) A continuous supply of 'exposed to the atmosphere' silicates the production of which is dependent upon **plate tectonics**.
- b) A continuous burial of carbon-rich organic matter. As the luminosity of the sun increased the early appearance of the land masses allowed for complete ecosystems to operate and exist at the right population levels throughout time and thereby producing the continuous burial of carbon-rich organic matter necessary to remove the carbon dioxide.

7) The Earth would have to have been created at the same time as the rest of the universe for harmony to have existed in the universe.

Response:

Many stars and planets (therefore whole solar systems) are constantly changing form, exploding and reforming as new stars. Such activity does not affect the balance of the universe.

8) **Backward rotating planets** and backward-revolving moons in a solar system demonstrate that the solar system cannot be very old.

Response:

Any planet that rotates more slowly than it revolves merely seems to rotate backward. Any planet that has its rotation axis tilted by more than 90 degrees will appear to rotate backwards. Because of having a single large moon Earth is unique in maintaining a stable rotation axis tilt.

Since the direction of capture of moons by the four gas giants is random, captured bodies will manifest a 50% probability of revolving in the direction opposite to that of the planet's rotation. These processes take millions of years to work their effects not just a few thousand years.

9) **Lunar dust** accumulates too quickly to allow for an old Moon and therefore an old Earth. Petterson (1950s) calculated that if the moon was 4 billion years old then its layer of dust would be 35 feet deep: whereas it is between 1/8th and 3 inches.

Response:

Petterson's calculation was based on inaccuracies. A 1993 study, taking into account erosion and meteorites/comets that expel debris beyond the pull of the Moon's gravity, calculated that the surface accumulation of dust after 4.5 billion years matches the actual depth of moon-dust.

10) The **appearance of age** argument.

Response:

This distorts God's witness of the general revelation of God through nature. The universe would then be seen as an illusion rather than providing lessons:

- ❖ "Ask the beasts and let them teach you...or speak to the earth, and **let it teach you**" (*Job 12:7, 8*).
- ❖ "He did not leave himself without **witness**, in that He did good...satisfying your hearts with food and gladness" (*Acts 14:17*).
- ❖ "Since the creation of the world His invisible attributes...have been clearly seen, **being understood through what has been made**" (*Rom. 1:20*).
- ❖ "...heavens are telling the glory of God: and their expanse is declaring the work of His hands..." (*Ps. 19:1*).

We read in both nature's record and the Bible record that God does not tell lies. The testimony of the natural world is that Earth is very old, possibly being about 4.5 billion years old. This general revelation through nature does not contradict God's special revelation through the Scriptures. The deceptive '*appearance of age*' argument would be a violation of God's own stated character. The creation of Adam and Eve as adults and the turning of water into matured wine are not examples of the appearance of age. **Did Adam have an appearance of history?** Did he have slightly worn teeth or any other signs of a beginning of deterioration or calluses on his feet? Did he carry memories of a non-existent childhood? With regard to **the wine that was water** the text does not indicate that a fermentation process took place. Would the wine have had the appearance of a history? No age is indicated in either case. We do not know at all what the results would be if dating methods had been applied to them. However, the universe does have an actual history as ascertained by many different dating methods. For example there are 4 million alternating layers at Green River which could not logically have been formed at one single event, such as the Genesis Flood. Furthermore, why would God want to make Mercury, Mars, the Moon and parts of the earth look old with craters? Why make them look as though they had been bombarded for millions of years by meteors if, in fact, they hadn't? Mars also shows a history of having had water on its surface. Why would God pretend such a history if it wasn't actually true? There was no artificial appearance of age for the growing vegetation: "Then God said, 'Let the earth **sprout** vegetation...the earth **brought forth** vegetation'" (*Gen. 1:11, 12*). And *2:9 tells us that* "God caused **to grow** every tree..."

11) **Earth's magnetic field** decays too rapidly to allow for an old Earth.

Response:

Earth's magnetic field has an alternating pattern of weakening and building up and often reversing polarity. There is no permanent decay.

12) The continents **erode too quickly** for Earth to be old.

Response:

Earth building processes (uplift from colliding tectonic plates, lava flows, delta and continental shelf build-up and coral reef build-up) occur at rates roughly equivalent to erosion rates.

13) The crystal halos that arise from radioactive **Polonium-218 decay** (half-life 3 minutes) indicate that the earth is young. This decay produces granite crystals which seemed to be in primordial rock (the samples were not from such rock).

Response:

This simply indicates rapid formation of certain rocks, not of the whole planet. Such formation could be the result of asteroid collision, volcanic eruption or sudden geological effects. **Could radiometric decay have been greatly accelerated during a global flood?** It would, in fact, have generated a pulse of energy enough to destroy the ark and all its passengers. Also all the water would become steam and the rocks would have melted.

14) Rapid sedimentation and peat deposition following the 1980 **Mount Saint Helens** eruption demonstrate that geological processes are rapid. So Earth could be young.

Response:

Most processes are gradual e.g. coral atolls, layers of ice, rock sediments, anthracite coal etc. Some processes are rapid e.g. lava flows, avalanche scars, asteroid/meteor impacts and polar ice-cap shifts. Some formations combine gradual and rapid processes e.g. Grand Canyon. The Mount Saint Helens event is no proof that all geologic processes are rapid.

15) The **entire ecosystem** had to be present for life to go on existing. All plant life systems must have been complete and operative at the same moment so that pollination would take place. Many species need animals for this to occur. Also symbiotic relationships must be working. Furthermore, all the components of the water cycle have to be in place for the forces responsible for the cycle to be in balance. So there could not be a gradual unfolding of ecology.

Response:

A long span of time for creation poses no problem. God could simply put in place all of the necessary complete systems at one particular time and then set creatures together in their symbiotic relationships.

16) The level of salt in the oceans would be much greater if earth is 4 billion years old.

Response:

Scientists do not see any problem concerning the oceans as being billions of years old in relation to their salt content. Some estimate that the oceans contain 50 quadrillion (million billion) tons of dissolved solids and that this would cover all land surfaces to a height of 500 ft. There are many unanswered questions concerning the oceans because of the difficulties regarding their vastness. One such unanswered question is: Why is seawater 220 times saltier than fresh lake water? Although the same processes of dissolving action of rain on the land and run-off into the seas and lakes apply to both the oceans and the lakes it seems strange that the salt content is so vastly different. Apparently scientists are more amazed that the sea is any more salty than the fresh water lakes; yet relatively little is known about the processes involved with the oceans, so it is somewhat meaningless to present figures of how much of the various minerals are dumped in the sea each year as if this would indicate a 'young earth' scenario.

17) Trails of human footprints beside or crossing over **dinosaur prints** prove that dinosaurs were contemporaneous with humans, not millions of years old.

Response:

These are the prints of tridactyls. Given some areas of soft low-viscosity mud some prints would be smaller and poorly defined and have appeared to be human but are not because:

- They are spaced out at the length of the stride of a dinosaur.
- Most of the prints are too large to be human.
- Some of the so-called *human* prints are accompanied by dinosaur features i.e. swish of a tail, claw marks.

The sequence of creation presented by *young earth* proponents contradicts the basic principles of ecology.

Conclusion

As the various sciences of archaeology, geology, palaeontology etc. have developed over the last several centuries it becomes more difficult for individual scientists (especially in the West) to perpetrate the kind of hoaxes of the past (e.g. Piltdown Man) without immediate detection. If several of the appropriate different dating techniques are applied to a sample that is both large enough and uncontaminated, then, allowing for a margin of error, we can feel confident in the dating of most artefacts presented. Even if the above datings are later revised because of new information, they would never be revised downward to a 6,000 year old Mankind, Earth or Universe. We do not doubt that the Creator could have made everything in 144 hours or even instantaneously as taught by Augustine; but the record contained within His creation and the Scriptures says otherwise. There is no reason for concern that this is the slippery slope towards evolution. The datings given through science are far too short for the lengths of time that evolutionists appeal to for sufficient positive mutations to occur for the evolution process leading to modern man. Many other factors also show that biological evolution is a pseudo-science. It is, however contradictory for Christians to accept all that science offers until it touches upon their view of Genesis, a view often based on a surface reading of and certain assumptions made about Genesis One and Two. In reality one can understand Genesis in some depth and come to the conclusion that scientific discoveries are in reasonable harmony with the Bible's account.

The *Young Earth* concept requires the invention of numerous theories concerning the journey of light, the geology of the earth and the fossil record. Most difficult is the *appearance of age theory* which gives a negative reflection of God's own stated character as the God of Truth. This approach is called *Concordist* in-as-much-as it presents its own brand of scientific knowledge as if it were actual science so that it is made to harmonize with the Scriptures.

SUGGESTED READING

A Matter of Days by Hugh Ross
The Genesis Question by Hugh Ross
Creation as Science by Hugh Ross
Who was Adam by Fazale Rana and Hugh Ross

www.biblicaltruthseekers.co.uk

