Daystar Creation Course

Outline

Worldviews

Is God the Creator of all things, or is the concept of God just a product of mankind's imagination? How you answer that question forms the basis for your "worldview". Your worldview is the framework from within which you interpret the world and the events happening around you.

Illustration

Solar system viewed from two perspectives: earth and sun.

Naturalism: also called **materialism** and **modernism.**

All things have arisen through a naturalistic, mechanistic evolutionary process from a single source, which itself arose by a similar process from a dead organic world. The fundamental assumption is that random chance couple with probability and statistics acting over a long period of time only through process observable today has brought about all that we see around us.

The progression is upward; from clouds of gas to stars; from non-life to life; from unintelligent life to intelligent life; from chaos to organization. Thus time is creative. Evolution is the primary doctrine.

> Under any of those names this philosophy assumes that in the beginning were the fundamental particles that compose matter, energy and the impersonal laws of physics. To put it negatively, there was no personal God who created the cosmos and governs it as an act of free will. ...In consequence, all the creating had to be done by the laws and the particles, which is to say by some combination of random chance and lawlike regularity. …modernist scientists conclude that all plants and animals are the products of an undirected and purposeless evolutionary process—and that humankind is just another animal species, not created uniquely in the image of God.
>
> (Johnson, Phillip, **The Wedge of Truth**, pp 13-14.)

Theism: also called **creationism.**

The origin and development of the universe and of major categories of living things can only be explained in terms of a unique creative process which operated during a period of special creation through the agency of a supernatural being: a CREATOR. The only assumption that needs to be proposed is that there exists such a being who is capable of acting outside the known physical laws and performing creative acts.

Since the moment of creation things have been decaying; it takes great energy to maintain the status quo. The progression is towards decay, and time is destructive.

Comparison

A comparison of the effects of evolution and creation on our worldview is important. Which cosmogony a person believes has a profound effect on **how they think**, and thoughts have consequences in actions. Below is a comparison of four areas of thought life that have significant effects on how we live.

a. Gradual improvement of all things (evolution), or gradual decline of all things (creation). Evolution teaches that things are getting better, that there has been a progression from random matter to life, from amoeba to man. The Bible, on the other hand, clearly states the reverse. Man and all creation was created perfect, i.e.

"very good", and that as man introduced sin into creation that things have been declining over time. This is clearly illustrated in the vision of the five kingdoms given to King Nebuchadnezzar and interpreted by Daniel. The progression was from gold – > silver – > bronze – > iron – > iron/clay. All humanity and human institutions have progressed away from God's ideal. It is only in Christianity that this trend has been reversed at all.

b. Randomness (evolution), or design (creation). The presence of design in the natural world and universe implies, if not demands, a Designer, an intelligent being with the power and ability to bring His designs into being.

c. Hopeless future (evolution), or an eternal plan (creation). To the evolutionist, the future belongs to the science fiction writer, not to reality. The Biblical Creationist, on the other hand, recognizes that the God who created and who now sustains the universe has a long term plan and the ability to carry it out.

d. Atheistic, humanistic world-view (evolution), or Biblical world-view (creation). The world-view of the evolutionist is man centered, and it stands is total opposition to the Biblical world-view, which is God centered. Man's basic nature is selfishness, which has never changed, and the end result of a world-view centered around mankind is destruction. God, the Creator's, nature is giving and loving, and maintaining a Biblical world-view results in salvation.

Personal testimony

Conflict

The Biblical account stands is stark contrast to the tenets of evolution, and thus there is an irreconcilable conflict between the two. In the normal marketplace of ideas the goal is to determine the truth.

Tactics

Authority

Creationists often appeal to the authority of the Bible, which is rejected by naturalists.

More recently there has been a growing movement in academic and scientific circles called **intelligent design**.

Marginalization

The tactic that is most often employed by the naturalist is called "marginalization". When a viewpoint or theory is marginalized it is categorized in such a way that it is excluded from serious consideration **without being refuted**. There have been many examples of marginalization in our time, not only of ideas but also of people. Nazi Germany marginalized Jews and others, making them less than human, and thus provided a justification for exterminating them. The same type of argument is used to justify abortion: the fetus is not human.

Marginalization occurs in the conflict between worldviews when the naturalists label the theist position as "religion" and their position as "science". Since religion involves an element of the supernatural it is not rational; science, on the other hand, is supremely rational. Judges and

journalists come largely from the world of academia, and thus they are mostly naturalists. They will tend to assume that people who base their thinking on the premise that God is real are irrational and thus dangerous when they influence public policy. From their perspective, religion does not belong outside of churches and in public institutions. As an example, when Christians become involved in politics they are labeled derogatorily as the "radical religious right". What is seen by the Christian as bias in the media comes not so much from a different political viewpoint as much or more from a different worldview.

Seven Perspectives from the Creation worldview

1. **It is because God is God that He created the universe and the earth**
2. **We are created in God's image**
3. **Because God made us He is intimately acquainted with us and how we work**
4. **Because God created us the way He did, He communicates with us**
5. **Because God is Creator He has an order for all things**
6. **Because He is our Creator we are to constantly praise Him**
7. **Because He is our Creator he has everything under control, and He has a plan**

Science

Definition

The word "science" comes from the Greek word for "to know", and thus it is a search for knowledge. At the core of scientific knowledge is the concept that any theory that is put forth on how the physical world operates can be formulated into an experiment, which can then be performed and repeated. Kenneth W. Ford, in his introduction to his college physics text, **Basic Physics**, states it this way:

No idea in science survives because it is aesthetically pleasing, or mathematically elegant, or magnificently general ... The idea must weather the test of experiment, and not just one experiment. (p. 10)

Under a naturalist philosophy the only permissible agents of change are materialistic ones. Thus scientists can aver:

There is no alternative theories to the principle of evolution, with its "tree of life" pattern, that any competent biologist of today takes seriously.... Creationism is not scientific; it is a purely religious view held by some religious sects and persons ... "A Statement Affirming Evolution as a Principle of Science", **The Humanist**, Jan/Feb 1977, pp 4-7

Biblical perspective

Prov 25:2 – It is the glory of God to conceal a matter, But the glory of kings is to search out a matter. (NASB)

Deut 29:29 – The secret things belong to the LORD our God, but the things revealed belong to us and to our sons forever, that we may observe all the words of this law. (NASB)

Rom 1:20 – For since the creation of the world His invisible attributes are clearly seen, being understood by the things that are made, even His eternal power and Godhead (NKJV)

Model or theory?

Both creation and evolution seek to address the same issue, that of origins. How did life begin? How did we get here? The subject is historical in nature and deals with unique events in our past. As such, the field is not limited to scientists, although without some knowledge of science is required to understand the arguments on both sides. It is not useful or reasonable to simply make dogmatic statements defining "true" science as being in agreement with evolution.

A better way to proceed, and the proper way to compare the ideas of creation and evolution, is to talk in terms of models. **A model is a conceptual framework**, an orderly system of thought, within which one tries to correlate data and then possibly to predict new data. The scientific validity of models rests upon how well scientists and others can relate, by a series of deductions, diverse scientific data, like a jigsaw puzzle, to form a meaningful picture. Models differ from theories in that they are built on assumptions, most of which cannot be tested in the laboratory. The test of models lies in their ability to predict facts based upon the logical extension of those assumptions.

The Cosmos

Cosmos: the space—mass/energy—time universe and all its arrays of complex systems. It has three fundamental properties:

Space
Mass/energy
Time

Other properties, such as force and speed, are combinations of these three fundamental properties.

Cosmology: the study of the cosmos

Cosmogony: The division of cosmology having to do with it beginning.

Singularity: Every cosmogony requires a singularity of some sort, i.e. a time in the past when the physical laws as we know them did not operate the way they do today or that other physical laws were operating which we do not see today.

First Law of Thermodynamics: Conservation of mass/energy

Second Law of Thermodynamics: a) entropy must increase in any transformation of energy from one form to another; b) the disorder of a (closed) system must increase; c) the amount of information must decrease.

Comparison of Evolution and Creation models

Evolution requires a vast increase in organized complexity over the ages, from primeval chaotic particles to present-day complex people.

Biblical Creation predicts a steadily decreasing organization as a result of the curse of sin.

Creation account

Introduction: The first several chapters of the **Bible** give us the account of the creation of the earth, animals and mankind, of the introduction of sin and rebellion into man's relationship with his Creator, and of the early history of the earth. It is an amazingly detailed description of how God created everything and how man, by his willful act of disobedience, gave everything that God had placed in his trust to God's enemy, Satan (Rom 6:16). The Biblical account of creation is unlike any other account in all of human history. All of the ancient mythologies contain fantastic images, but the Bible is almost laconic in its description.

Not only in Genesis, but throughout the entire **Bible**, the theme of God as Creator is repeated and expanded. Thus, the account of creation and the early history of mankind and the earth as found in the **Bible** is seen as containing deep spiritual meanings. Consider the following list of "firsts": Genesis contains the first:

Life -- Day 5 when God created living creatures.
Humans -- Day 6; made in the image of God
Marriage -- the union of man and woman
Sin -- seated in rebellion against God
Lies and deception -- outcome of sin
Death -- spiritual and physical

Judgment on sin -- banished from the garden
Promise -- a savior would restore creation

Reliability: the Generations Theory [P. J. Wiseman, **New Discoveries in Babylonia About Genesis** (London: Marshall, Morgan & Scott, 1946)]

The first five books of the Bible are known as the "Books of Moses", but there seems to be a difference between Genesis and the other four books in style and in the way they are referenced in the New Testament. Even within the book of Genesis there seems to be style differences. These differences in part led to the emergence of the "documentary" theory of the Pentateuch. It also used to be widely believed that writing was not known at the time of Moses, and there was this popular (and liberal) theory concerning the passing down by word of mouth of the stories of the early Bible.

Now it is known that even before the time of Abraham that writing was widely known and practiced and that the languages used were very similar to Hebrew. So it is absolutely certain from archeology that as far back as we can trace men knew how to write.

This is important in determining the structure of Genesis. The differences between Genesis and the other four books of Moses can be explained in that Moses is the author of Exodus, Leviticus, Numbers and Deuteronomy, but he is the editor of Genesis. That is, that Moses took pre-existing written accounts and compiled them into a single volume much like a modern editor would do. This theory has been fully and convincingly developed by P. J. Wiseman.

There is a phrase which occurs many times throughout Genesis that is translated "These are the generations of ...". One of the first examples of this phrase is found in Gen 5:1: "These are the generations of Adam." According to the **Generations Theory**, or ***Toledoth***, this phrase is the equivalent of a signature. It was common in antiquity for a chronicler to affix his signature to the end of a completed tablet. The next writer, if there was one, would then tie into the previous one by some phrase to provide continuity. While there seems to be some doubt as to whether the generations phrase belongs at the beginning or the end, the context in Genesis would clearly point to the end.

This is an exciting concept, for what it means is that the records we have in Genesis are actual eyewitness accounts. Here are the instances of the phrase and the proposed author:

Reference	**Author**
Gen 2:4	God? (Often translated differently in English, but the same)
Gen 5:1	Adam
Gen 6:9	Noah
Gen 10:1	Sons of Noah
Gen 11:10	Shem
Gen 11:27	Terah
Gen 25:12	Ishmael
Gen 25:19	Isaac
Gen 36:1	Esau
Gen 37:2	Jacob

Thus, we have two eyewitness accounts of creation: one from the hand of God, and one from the hand of Adam. It has often been argued in creation-evolution debates that, since we are

dealing with an historical event, not strictly a scientific one, that we cannot know how it happened. This is very clear evidence that we do have an eyewitness account from the only one who could give it.

Genesis 1:1 – Biblical Cosmogony

God	created	the heavens	and the earth	in the beginning.
Elohim	*bara*	*space*	*matter/energy*	*time*

This is a true scientific statement, and it affirms that God existed prior to the cosmos. That is, God is eternal; the cosmos is temporal. All other cosmogonies pre-suppose the existence of the space-time-mass universe.

As we look at the structure of this sentence we see that "Elohim", the uniplural name for the omnipotent creator God, is the subject and the object is the universe. The Hebrew word translated "heavens" is literally "the stretched out space". Only Biblical cosmogony is a true creationist cosmogony. All others, ancient and modern, presuppose the existence of the space-mass/energy-time universe.

Since God is the subject, it is He that is pre-existent. As humans we have a difficult, if not impossible, time imagining what could be before space and time, but it is clear in this statement that God existed before all three. Not only does He exist before the space-mass-time cosmos, He transcends it, so that He is not effected by the passage of time, the vastness of space or the inertia of mass.

The verb in this sentence in Hebrew is "***bara***", which means to create from nothing, ***ex nihilo***. It is not that something else existed before our cosmos and God just changed the form, but rather there was nothing.

The tense of the verb is clearly past tense. That is, creation is not something that is continuing, but rather was a completed act. What God has done since the creation is to sustain, or conserve, His creation.

It is a common misconception that science is not found in the Bible. While it is true that the Bible is not a science textbook, it is also true that it is scientific.

Ante-diluvium conditions--The **Bible** does not give us a specific description of what the conditions on earth were like before the Flood, but God did leave us with plenty of evidence. Some of the conditions before the Flood were:

a. **The climate was more tropical than temperate**. There is abundant fossil evidence everywhere in the world, from pole to pole, of plants and animals that could only live in a topical environment. The vastness of coal and oil deposits would also indicate that there was a super- abundance of plant life.

b. **Humans and other life systems lived to great ages and sizes**. The Bible gives evidence of the longevity of life, and fossils of dinosaurs and other life forms that are familiar to us today give evidence of great size, which would also infer great age.

c. **Increased barometric pressure and a different composition of the air**. The evidence for this is varied. For example, the lung capacities of many of the large dinosaurs are too small for them to take up enough oxygen in our present atmosphere. Also, pterodactyls, the flying dinosaurs, would be unable to fly in our present atmosphere, but would require increased atmospheric pressure. The super-abundance of plant life would indicate ideal growing conditions, including increased carbon dioxide concentrations.

d. **An absence of rain as we know, and the presence of mists rising from the earth**. The evidence for this is found in Genesis 2:6 and coordinates well with other evidence. The climate was exceptionally benign with the absence of severe weather patterns that we see today.

e. **Rivers and seas that were fed from subterranean sources**. The lack of rain as such would eliminate rivers caused from run-off, but Genesis 2:10-11 describe rivers that were similar to large Artesian springs.

f. **"Mountains" that were considerable different from today's mountains**. The mountain ranges that we see today were formed by the violent collision of tectonic plates and other catastrophic activities such as volcanoes. The mountains mentioned in the Bible were different, but we really don't know how high, etc.

g. **A dipole magnetic moment for the earth many times stronger that today**. The evidence for this comes from modern day measurements of the earth's magnetic field. Dr. Thomas Barnes, University of Texas, El Paso, has accumulated magnetic dipole measurements made over many years and has concluded that the dipole moment of the earth, i.e. the strength of the earth's magnetic field, is decreasing with a half-life of about 1400 years. If the Flood occurred 4000-5000 years ago, the earth's magnetic field would be 7-10 times as strong as it is today. The earth's dipole moment can be pictured as an electromagnet caused by an effective electrical current in the molten core of the earth. In order for this dipole moment to be larger the core must have been larger and hotter than currently. The source of this heat could have been radioactive decay in the core, since most of our radioactive-bearing ores are found in rock from volcanoes.

h. **There were massive subterranean sources of water**. These are called the "fountains of the deep" in the Bible and were the primary source of the water that covered the earth during the Flood. The increased temperatures in the core could heat the water so that at night a mist would arise as the temperature dropped slightly. This would also provide the pressure necessary for the Artesian springs and rivers.

The Canopy Model – Gen 1:6 "firmament"—***raqiya:*** **"**properly, an expanse, i.e. the firmament or (apparently) visible arch of the sky " (Strongs #7549

There has been a lot of research in the last decade or so trying to determine and model the early earth's atmosphere and condition of life on earth. While there is still much to learn and there are many details still unclear, there also seems to be broad agreement on the general nature of the pre-Flood world. Much of what is proposed is speculative in nature, but much can be gleaned from careful study of the creation account and of fossil records.

It is very instructive to look in some detail at the first three days of creation. The most dominant features of the creation in Day 1 are water and light. There is no mention anywhere of dry land or of anything solid. Is it possible that the only elements created at that point were oxygen and hydrogen, the component elements of water? There is an interesting passage in II Peter 3:3-6 that also speaks of the importance of water in creation.

The only thing that seems to happen in Day 2 of creation is that God makes a separation of the waters into two areas with an expanse in between. This is not a horizontal separation, since there is no mention of dry land until Day 3, but is rather a vertical separation. The Hebrew word for firmament or expanse is ***raqiya***, which means to compress or pound out, and stretch out in thin sheets. It is not totally clear what that means, but it seems to present of picture of a sphere of water, and inside that sphere is a thin layer of something, and then another layer of water.

In Day 3 it becomes apparent that the layer of water on the inside is what we call earth, because God creates the dry land and separates it from the water. There is still an outer layer of water, the water above the firmament, and it is this layer of water that leads scientists to propose the canopy model.

The canopy model of the pre-flood earth answers several perplexing problems about trying to reconcile the accounts of Genesis 1-11 with modern day experience and with the fossil record. For example, we know from the fossil record that many plants and animals grew to be considerably larger and lived longer than they do today. Mosses that today are only a fraction of an inch high were many feet high in the ancient past. Dragonflies had wingspans of up to 3 feet. Lizards grew to be 90-100 tons in size. The Bible tells us that men routinely lived to be more than 900 years old.

Some of the effects of a vapor canopy:
a. The canopy would be a shield for the earth. Today the Van Allen belt, a belt of electrically charged particles many miles from the earth's surface, and the ozone layer trap much of the harmful radiation from the sun. If the full spectrum of radiation from the sun were to strike the earth it would be disastrous for all forms of life on earth. Water and water vapor would be an extremely effective absorber of all radiation above the visible spectrum: uv, gamma rays, x-rays, etc. This would have many beneficial effects on plant and animal life on earth.
b. The canopy would produce a greenhouse effect. It has been calculated that the presence of the canopy would increase the average surface temperature by several degrees. This would occur for two reasons: 1. The canopy would increase the effective diameter of the earth by approximately 20-30 miles, thus intercepting more of the sun's energy. 2. The canopy would act as a thermal blanket holding the infrared part of the spectrum.
c. The canopy would act to distribute the sun's heat uniformly over the surface of the earth. What this means is that from equator to pole there would be little difference in temperature as well as from night to day. This is born out by the presence of fossils of tropical plants and animals everywhere on the face of the earth. Combining this with the greenhouse effect would indeed produce semi-tropical conditions throughout the entire earth. A side effect of this feature
is that there would be no weather patterns as we now know them. Weather is caused by the differences in temperature between the equator and the poles as well as day and night. Clouds, rain and wind are formed as a result of these temperature differences. However, with the super-abundance of water in the earth and atmosphere even the small changes in temperature at night would result in significant dew in the morning. (Gen 2:5,6)
d. The presence of the canopy would increase the atmospheric pressure, perhaps dramatically. This feature used to be used as an argument against the canopy theory, but recent medical research has totally reversed our thinking. Hypo baric pressure chambers with enriched oxygen content are becoming standard medical treatment for a wide range of maladies. There is also much anecdotal evidence to suggest that hypo baric conditions would have dramatically beneficial effects. Dr. Carl Baugh, of the Creation Evidences Museum, Glen Rose, Texas, has been doing considerable research in this area. He is in the process of constructing a hypo baric biosphere in which he hopes to reproduce the pre-flood environment. It is his opinion that the pre-Flood atmospheric pressure was 2.18 times our present pressure, that the oxygen content was 25% and the carbon dioxide content about 1 %.

Foundations of the World - Biblical Geophysics

1. **The earth was created uniquely for life**. Psalm 115:16; Acts 17:24-26

Everything about the earth makes it suitable for life: an abundant supply of water; the right temperature range; the right size to produce the correct gravitational force to hold our atmosphere at the proper amount of pressure; the atmosphere itself. Our atmosphere consists of just the right mixture of gases, 79% nitrogen, 20% oxygen, 1% carbon dioxide. Too much oxygen is toxic; too much carbon dioxide, which would be good for plant life, would suffocate animal life. The nitrogen, while being chemically inert in breathing, is vital for nutrients and is important for vegetation. The atmosphere also allows the light and energy from the sun to make it to the surface, yet protects us from the deadly high energy radiation from the sun. No other planet in our solar system even comes close.

The key to life on earth, or anywhere, is an abundant supply of water. Water is unique among the molecular compounds. It exists in all three chemical forms – gas, liquid, solid – in the normal temperature range of the earth. Even more unique is the property that the **solid** form is **less dense** than the **liquid** form near its freezing point. The maximum density of water occurs at 4 degrees Celsius (39 degrees Fahrenheit). This assures that even moderate sized bodies of water will never freeze solid and life can survive.

2. What the Bible has to say about the size and shape of the earth.

a. The relative size of the earth – Ps 8:3,4. Many ancient cosmologies not only viewed the earth as central, but also as the largest body in the universe. However, the Psalmist here sees a different perspective. He realizes how insignificant we are relative to the vastness of the astronomic universe.
b. The complexity of the earth. What measures importance, however, is complexity, not size. The human brain is by far "the most complex and orderly aggregation of matter in the universe." (Isaac Asimov, Smithsonian (June 1970) p.10) In terms of size, man stands about midway between the microscopic world of the atom and the size of the universe.
c. The Bible describes a spherical earth suspended in space – Prov 8:27; Isa 40:22. The word used in both these references can be accurately translated as "circle". There is no Hebrew word for sphere, but a sphere is just a cirle turned on its axis.
d. The Bible also describes a limited atmosphere. The word "tent" in these verses has some clear implications; the use of "heavens" refers to the atmosphere. He compasses the atmosphere as a tent: inside that tent is safe; outside is dangerous.
e. The earth is described as being suspended in space – Job 26:7. The word "nothing" is emphatic: nothing whatever. It is neither resting on pillars or suspended from a ceiling. The term "pillars of the earth" is found in I Sam 2:8. Pillars here really means "firm summits", and thus the use of pillars here primarily refers to the divine strength of God Himself.
f. The earth rotates on its axis – Job 38:14. The image is of a clay vessel being turned on the wheel to receive the design impressed upon it by a seal or signet.
g. The "four corners" of the earth – Isa 11:12; Rev 7:1. These references have sometimes been used to prove the Bible teaches a flat earth. A more precise translation is "four quarters of the earth" as in Rev 20:8, or four directions. Even so, geodetic studies have shown that the earth really does have four "corners", or high spots:

55º N, 10º W (near Ireland)	50º S, 48º E (near S. Africa)
15º N, 140º E (near Philippines)	18º S, 80º W (near Peru)

Corruption -- Genesis 6:1-13

Remember the temptation in the Garden was "You shall be as gods ..." How far did the ancients go in their quest for supernatural powers?

All the ancient civilizations of the world were obsessed with supernatural power, with gods and goddesses and supermen that were the union of the gods with human women.

A. God placed man on earth to govern; He gave man all the authority he would need.
B. Man gave that dominion to Satan, an angel in rebellion against God, when he obeyed Satan rather than God. Thus Satan became the ruler of this world:
1. Rom 6:16; Eph 2:2-3
2. John 12:31; 16:11;IJohn5:19;IICor4:4
C. The planet earth has become the battlefield
Eph 2:2-3

Sons of God: three possibilities: Jesus, the saints, angels. In this context can only be angels.
Angels have sinned: Jude 6,7: sexual perversion
II Peter 2:4-6: angels that sinned.

Nephilim: giants. Could they in fact be the result of a union of demon and mankind? Did they have no human spirit in them capable of being redeemed? Gen 6:4

after that: the flood: The giants in the land spied out by the twelve; Goliath;

Why was God's judgment so total at the flood? God had promised a redeemer, one who would undo all the Adam had done. Is it possible that mankind was so polluted with the seed of demons that Noah and his immediate family were the last uncorrupted humans? Gen 6:9 -- the word translated "perfect": without blemish, without spot, undefiled (Lev 22:21)

The Flood – Gen 6:11 – 8:22 Next to Creation itself, the Great Flood is the most important geological event in all of history.

The Ark of Noah. The Hebrew cubit was either 17.5" or 20.4", more likely the shorter. Using the smaller measure the dimensions of the ark are:

Length = 437.5 ft. or 133.35 m.
Width = 72.9 ft. or 32.4 m.
Height = 43.75 ft. or 19.45 m.
Shape: boxy, flat bottomed; made to float and not capsize. It would have been more or less rectangular.
Storage Area: 3 decks each with 31,900 sq. ft. or 4320 sq. m.
Volume: 1,395,000 cu. ft. or 189,000 cu. m.
Equivalent of 13,960 tons gross tonnage or 280 box cars or 19,940 tons displacement.

Chronology:

Initial rain and upwelling	40 days	Gen 7:12
Prevailing waters	110 days	Gen 7:24
Mountains visible	74 days	Gen 8:5
Noah sent raven	40 days	Gen 8:6
Dove 1	7 days	Gen 8:8
Dove 2	7 days	Gen 8:10
Dove 3	7 days	Gen 8:12
Covering removed	29 days	Gen 8:13
Earth dry	57 days	Gen 8:14
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	371 days	

Notes: Gen 7:20 probably refers to the draught – 22 ft.

Gen 8:11 – The olive leaf would have had at least 4 months to sprout from an asexually propagated olive branch.

Geologic events:

Gen 7:11 – "fountains of the deep were broken up"

– The single continent began to break apart. These pieces of continent would move rapidly until they collided with one another, forming the major mountain chains in the world.

– Warm, subterranean waters surged upward. The warm waters dissolved minerals; violent scouring of the land occurred as the waters surged; as the waters would find a place of less turbulence enormous quantities of sandstone and limestone would be deposited giving rise to what is now known at the Geologic Column. Grand Canyon in Arizona is an example.

– Volcanic activity began. The Pacific Ring of Fire are the remnants of this. There would also be widespread layers of volcanic ash and lava.

– Enormous mats of vegetation would collect and float until such times as they would be buried, producing coal, petroleum and natural gas deposits

Gen 7:11 – "the windows of heaven were opened"

– The collapse of the water vapor canopy. There would be immediate and drastic changes in temperature resulting in the rapid formation of polar ice caps. There would also be great temperature instabilities that would result in periods of large changes of temperature, such as the ice age.

Gen 7:23 – "So He destroyed all living things which were on the face of the ground"

– Massive collections of land and sea animals would be buried, even buried alive, resulting in large beds of fossils.

Table of Nations

Races: In modern times we have distinguished people by the surface characteristics of their appearance. Based primarily on skin color we divide people into "races". Technically speaking, a race is a subspecies. The distinctions which we use are rather superficial and are very much a part of an evolutionary way of looking at people.

The **Bible** never uses the word "race" and any other word that could be interpreted that way. People are always identified by "every tribe and tongue and people and nation". (Rev 5:9)

***phule*:** a company of people united by kinship or habitation, a clan, a tribe
glossa: the tongue; by implication, a language
laos*:* the people at large
ethnos: a nation, usually denoted by physical borders

There is only one race of mankind, but that race is divided into three families. When the flood waters subsided Noah and his family left the ark and were the only living human souls in the world. All of us are descended from Noah and his wife.

Noah was 600 years old at the time of the flood and had three sons, Japheth, Shem and Ham. The **Bible** indicates that the families of these three sons formed all the peoples of the world. It probably did not take long for each of these sons to settle in a different place, and there was apparently no taboo against marrying close relatives. Each of the sons and their wives had specific gene pools and genetic characteristics. Once the families were separated these gene pools solidified. The genetic characteristics included not only physical features, such as hair and skin color, but features of the soul: mind, emotions and will.

In chapters 10 and 11 we have a genealogy of these three families known as the Table of Nations. The three families apparently did not stay in the same place.

Japheth: The descendents of Japheth, in particular, spread out. The Japhetic people are, in general, the peoples of India and Europe, and cover more territory on the globe than any of the other two families, which is consistent with Gen 9:27. Culturally the Japhites are identified with ancient Greek culture and tend to be intellectual.
Ham: The descendants of Ham spread to the Near East, Africa and Asia.
Shem: The Semitic peoples all descend from Shem and include the Arabs and Jews.

The territories of Ham and Shem overlapped, and there was much mixture of the two in the Near East.

History of evolution

Geology and the Rise of Evolution

Geology, the study of the earth, is the area in which evolutionists first gained ground and is still the area in which they have their strongest foothold. In order to introduce this subject, I want to digress and give a little history leading up to Darwin and the general acceptance of the theory of evolution.

Living in a mountainous area of the world we are well aware of one of the most striking features of rocks: they occur in layers. One glance at a picture of the Grand Canyon is enough to illustrate this. These layers are called "strata" and are formed by water action. Moving water picks up sediments like sand, lime, small rocks, and clay, and when the water reaches an area where is slows down, these sediments settle out according to their relative densities. If these sediments are subjected to some cementing action, such as high pressure, they can form into layers of rock. These layers will have different hardness and color depending upon the makeup of the material and the cementing action. Sometimes sedimentary rocks are subjected to intense heat, in which case they change to become metamorphic rock, such as granite or marble.

Most of the science we call Geology is a true science in every respect. There is an area of geologic study, however, called historical geology that goes beyond the bounds of science. To the historical geologist, the history of the earth is recorded in the rocks, and he claims to be able to read and understand that history.

Geology is actually an old science in the modern sense. Some of the early geologists were contemporaries of Sir Isaac Newton: Nicholas Steno (1631-1686) is known as the "father of stratigraphy"; John Woodward (1665-1728), a friend of Newton, formed modem paleontology and founded the paleontological museum at Cambridge.

Uniformitarianism

The early geologists believed that the Biblical Flood was responsible for the sedimentary rocks, but by the end of the eighteenth century the concept of long geological ages and uniformitarianism was taking hold. "Uniformitarism" is the concept that geological processes have occurred in the past at the same rate they are occurring in the present. In other words, we can measure the rate at which sediments are occurring now and assume that they have always occurred at that rate. Since we know that these things are occurring at an extremely low rate today then they must have taken an extremely long time to form the results we observe today. An example of such thinking occurs in plate tectonics. Since the movement of the tectonic plates today is very slow it is concluded that the continents took hundreds of millions of years to move to their present positions.

Uniformitarianism has become the foundational principle of historical geology. As an illustration of this consider this quote from a standard textbook:

> The uprooting of such fantastic beliefs [that is, those of the catastrophists] began with the Scottish geologist, James Hutton, whose **Theory of the Earth**, published in 1785, maintained that the present is the key to the past, and that, given sufficient time, processes now at work could account for all the geologic features of the Globe. This philosophy, which came to be known as the doctrine of uniformitarianism demands an immensity of time; it has now gained universal acceptance among intelligent and informed people.
> Carl 0. Dunbar, **Historical Geology**, 2nd ed. (New York; John Wiley and Sons, 1960), p.18

This doctrine of uniformitarianism led to the development of a method of classifying and arranging the various strata found all over the world. The entire sequence of strata is called the
Geologic Column, with each level of strata assigned an age. This in turn leads to a chronology, known as the Geologic Time Scale, which is the backbone of historical geology. The history of the earth is divided into "ages" of immense periods of time.

One might ask, "How are various rocks and formations assigned to the appropriate ages?" It would seem to the uninformed observer that if a formation or strata was on top of another one that it would be more recent. Or if two strata are of the same composition, etc. that they would be of the same age.

In fact, however, the most important factor used to assign strata to their geologic "ages are the fossils that are found in them. For example, if the same fossil is found in two rock formations that are widely separated in distance it is assumed that those rock formations were deposited at the same time, regardless of sequence or composition.

If it is the fossils that determine the age of the rock, how do we determine the age of the fossils? The key is, of course, evolution!!!

How do we know that evolution is correct? From the fossil record.

Fossils

Fossils are the remains of animals that have died. Normally when a creature dies it is eaten or decays before it has a chance to become fossilized.

The rise of Evolution

It seems to me that the genesis of the thinking that eventually led to Darwin lay in the period of French rational philosophy. European civilization was overwhelmingly Christian until the period of the Renaissance in the 16th and 17th century. During the Renaissance Greek and Roman culture and literature were re-discovered:

> The men of the Renaissance ... saw behind them in the far distance ... the peaks of classical antiquity, representing the summit of human reason, the heights which had been reached by the Greeks and since lost, the ideal for the return of which they themselves were engaged in their finest endeavors."
>
> H. Butterfield, **The Origins of Modern Science**, p. 222.

But even during the Renaissance the prevailing view of history among intellectuals was one of decaying.

The beginning of the age of mechanization brought with it a feeling that we were getting better. An idea of progress emerged:

> The introduction in modem times of a view which envisioned the whole universe in terms of historical process was a new thing, however, and represents an important stage in the development of the modern mind. ... Science and history had come together to present the idea of the whole nature advancing slowly but relentlessly to some high goal.
>
> H. Butterfield, **The Origins of Modern Science**, p. 236

Rationalism took over in Europe in the 18th century, culminating with the French Revolution. Rationalism is a purely materialistic philosophy that glorifies man's reasoning and rejects revelation. "It was France, whose social system was dissolving, that produced the first modern evolutionists." (Loren Eiseley, **Darwin's Century**, p. 10)

The early men who worked at schemes for classifying forms of life were Christians. John Ray, for instance, was the one who originated the concept of species. It was Carl Linnaeus, a man of immense popularity and influence, who traced each specie back to its original pair of creation. Linnaeus systemitized the naming of plants and animals, introducing the dual name - genus and species - and larger divisions such as classes and orders.

> For him [Linnaeus], as for all Christians of his era, there had been one act of creation. The modern species were as fixed as on the sixth day of God's labor. But he had glimpsed, more than his fellows, the wonderful pattern of creation, the unities as well as the diversities of form that existed in the mind of God.
>
> Loren Eiseley, **Darwin's Century**, p.23

Also during the eighteenth century there arose a concept of the "Great Chain of Being", that there was a continuity of creation, an unbroken gradation of organisms in nature. At the top was God and the angels; next came man, with one foot in the spiritual realm and one in the physical realm. Next came the apes, and so on all the way down to the minerals in the ground. The Chain of Being doctrine was not evolutionary, since it was founded in creationist thinking. The scale was static, since creation had ceased.

Two major developments occurred that transformed the Chain of Being into an evolutionary sequence. As fossils began to be discovered the idea of extinction began to emerge. Georges Cuvier, a French paleantologist, gained great fame from his ability to reconstruct an entire animal from bones, and had a reputation for being able to reconstruct any animal from even the most fragmentary remains. Jean Baptiste Lamarck, however, was the one who converted the Chain of Being into a geneological tree. Lamarck introduced and developed the idea of the "progressive- development theory".

The early geologists, James Huffon and William Smith, began to see in the layers of rock an historical record. James Hutton was one of the first men to ignore the flood hypothesis and put forth a uniformitarian point of view. Fossils of many kinds of animals extinct today were being discovered, and this gave credence to the concept of long periods of time. Uniformatarianism was put forth as a theory for the formation of the strata of rock.

It was Charles Lyell, a young lawyer, the founder of modem geology, that provided the groundwork for infinite periods of time. The effect of Lyell's writing cannot be overestimated. He had a profound effect on Darwin and re-introduced the ideas of Lamarck in a powerful way.

Thomas Malthus, an English clergyman, wrote a study of human population. He put forth the idea that population tends to increase at a faster rate than its means of subsistance and this results in the idea of struggle, the survival of the fittest.

Charles Darwin published the **Origin of the Species** in 1859, and the baffle was quite intense for many years.

Carl Linnaeus (1707-1778)

Carl Linnaeus, born in Sweden in 1707, essentially laid the foundation of natural history by devising a system of classification whereby any plant or animal could be identified and related to an overall plan. He started with the Biblical concept of "kinds"; in fact, the word "species" is from the Latin Vulgate translation of "kinds" in Genesis. Following the general acceptance of the Linnean system, fixity of the kinds became fixity of species.

All organisms formed an ascending scale with man at the summit, but they were not related. He took the unusual step for his day of placing man in the same genus as the orangutan. Linnaeus believed firmly in Special Creation. His book, ***Systema Naturae***, was internationally accepted by nineteenth century naturalists.

Jean-Baptiste Lamarck (1744-1829)

Although only moderately successful as a scientist, Lamarck's ideas survive in strange ways. Sometime after 1800 he abandoned the idea of Special Creation and began advocating his ideas for evolution, although he did not use that word. He proposed that the shape or size of animal organs was modified according to the circumstances in which the creature might find itself, and then these changes could be passed on to the next generation. This idea, known as "the inheritance of acquired characteristics", was largely ignored in his day.

Georges Cuvier (1769-1832)

Born in France, Cuvier was immensely popular in his lifetime. A strong Creationist, Cuvier's theories of creation withstood the theory of evolution, developed in England, for almost the entire nineteenth century. He is known as the father of paleontology, and developed methods of identifying and developing the structure for an entire animal from fragmentary evidence.

He recognized that fossils are the remnants of catastrophes, but he was hard pressed to explain the disappearance, and then reappearance, of fossil species. As a result, he developed and popularized a theory for the origin of the earth that incorporated multiple catastrophes. Although God created the earth in some remote past era there were a series of violent catastrophes that devastated most of the animal and plant life on the earth. However, there were always some remote geographical location that was spared, so that there was a general repopulation. The last of these was Noah's flood. In his scheme, the Scriptures were not violated.

His theories were immensely popular both in France and England, and while they continued so in France, they were soon superceded in England.

The Lunar Society of Birmingham (1764-1800)

This was a small but extremely influential group of intellectuals and scientists in England. Its members included: Erasmus Darwin (Charles Darwin's grandfather) who founded the society and, in 1794, wrote a relatively popular book in which he outlined his theory of evolution; John Wilkinson, a cannon maker; James Waif, inventor of the steam engine; Matthew

Boulton, a manufacturer; Joseph Priestly, a chemist; Josiah Wedgewood, founder of the famous pottery business; and Benjamin Franklin.

Thomas Robert Malthus (1766-1834)

His book, ***Essay on the Principle of Population***, published in 1798 laid the groundwork for social Darwinism. His theory of population was: "Population when unchecked, increases in a geometric ratio. Subsistance increases only in an arithmetic ratio." He suggested that the population doubled every 25 years at the geometric rate 1, 2, 4, 8, 16, ... while the food supply was expanding during the same time at a rate 1, 2, 3, 4, 5.....It is thus the food supply that limits population growth. His ideas gained wide acceptance, primarily because he used mathematical methods in his social ideas. His principles formed a vital part of Darwin's theory.

Charles Lyell (1797-1875)

Lyell was trained in law and was an amature geologist, yet his ideas became the foundation for modern geology. He built on Hutton's principle that the present is the key to the past (i.e. uniformitarianism). He rejected the Biblical record and popular catastrophic theories by changing the catastrophes from being world-wide to local regions.

In the first volume of Principles of Geology he dealt with species and the relationship between fossil remains and the rocks in which they appear. It is this relationship that later formed a crucial part of the theory of evolution and is equally important with Darwin's theory. In his day most people considered fossils to be remnants of the Flood, but Lyell expanded the time frame to millions of years. The structure was seen to be simple fossils on the bottom-most layers with more complex fossils in subsequent layers. A further subtlety is that the Scale of Nature became a developmental sequence, from the simplest in the early ages to the more complex in more recent times. Lyell also developed the comcept of an imaginary geologic column that could be assembled
from bits and pieces.

Lyell became a close friend with Charles Darwin, and it was Darwin that eventually caused Lyell to drop his belief in the fixity of the species in 1863 in favor of the evolutionary position.

Alfred Russel Wallace (1823-1913)

Wallace was an exceptional naturalist who may have been the actual originator of the ideas that formed the basis for Darwin's theory of evolution. In 1855 Wallace enunciated a principle that "every species had come into existence coincident both in time and space (geographical distribution) with a pre-existing closely allied species." Later, in 1858, inspired by a recollection of Malthus's ideas, he wrote a paper which he sent to Lyell in which he clearly outlined the theory of the survival of the finest. Darwin received a copy of this paper one year before he published ***On the Origin of the Species***.

Age of the Earth

The radioactive decay process.

In order to understand the radioactive decay process it is first necessary to understand something of the structure of atoms. Basically, atoms are the fundamental building blocks of all matter. Everything that we see is made up of atoms combined in various ways, and it is the varying chemical properties of atoms that give the variety to all around us.

Atoms themselves are made up of three basic particles of matter: light, fast electrons that have a negative electrical charge, heavy protons that have a corresponding positive charge and heavy neutrons, which have no electrical charge. The structure of an atom is something like the structure of our solar system, that is, the light electrons spinning around a heavy nucleus, made up of the protons and neutrons, like the planets orbiting around the sun. Since the nucleus is made up of both protons and neutrons they have a common term: nucleons. The total number of nucleons in the nucleus is the sum of protons and neutrons.

The electrical charges of these "sub-atomic" particles play an important role in the structure of atoms. Like electrical charges repel and unlike electrical charges attract. It is the attractive force between the electrons and protons that keep the electrons from flying apart. The protons, however, want to repel each other, and the nucleus should be unstable, wanting to fly apart at any moment. This is where the neutrons play an important role. They help to space the protons apart and at the same time hold the nucleus together, so that it is usually quite stable.

The simplest atom is hydrogen, which consists of one proton in the nucleus and one electron. The chemical properties of elements, i.e. what the element is, are determined by the number of electrons the atom has, so that the nucleus may contain varying numbers of neutrons and still be the same element. For example, the hydrogen nucleus may consist of the proton plus 0, 1, or 2 neutrons. An atom with the same chemical name, but differing numbers of neutrons is called an **isotope**. Almost all atoms have several stable isotopes.

Each chemical element has its own unique symbol, which is usually the first one or two letters of either its name in English or Latin. For instance, hydrogen is given the symbol H. Some of the more common elements are:

Carbon - **C**	Oxygen - **0**	Uranium - **U**
Helium - **He**	Lead - **Pb**	Iron - **Fe**

When we are dealing with different isotopes of the same chemical element the chemical symbol is preceded by a superscripted number giving the number of nucleons. For example, two common isotopes of carbon are ^{12}**C**, and ^{13}**C**. Carbon has 6 electrons, so that means that there are 6 protons and either 6 or 7 neutrons, depending upon the isotope.

For the light elements the number of neutrons in the nucleus is approximately the same as the number of protons, but as the elements get heavier the number of neutrons increases proportionately. For example, ^{56}**Fe** has 26 protons and 30 neutrons in the nucleus; ^{235}**U** has 92 protons and 143 neutrons.

Not all possible isotopes of elements are stable. Some are so unstable that if they were to form for even the shortest time they would instantly disintegrate. Others seem to be stable for a while but eventually disintegrate into another nucleus, which itself may or may not be stable. This disintegration of unstable nuclei is what causes radioactivity and is called radioactive decay.
The original nucleus is called the parent and the product nucleus (or nuclei if there are more than one) is called the daughter.

An example of radioactive decay is uranium. Uranium spontaneously decays by emitting an alpha particle, which is a helium nucleus (2 protons and 2 neutrons). Thus

$$^{235}\mathbf{U} \rightarrow {}^{234}\mathbf{Th} + \mathbf{alpha}$$

Thorium (**Th**) is also unstable and will decay. This process will continue until a stable nucleus (lead in this case) is reached.

An important number that is used to measure the stability (or instability) of a nucleus is known as the half-life. It is a characteristic that for a given radioactive element half the number of atoms will radioactively decay in a given amount of time. Some half-lives are very short, others very long. It is the elements with long half-lives that also are found in rocks that are used for dating the age of the earth.

Radiocarbon dating.

There are several methods that are used to date rocks and fossils using radioactive elements, but they break down into two types. The first type is radiocarbon dating, which uses a radioactive isotope of carbon, "`C, to date fossils and other remnants of living things. This method of dating is distinctively different from the type of dating used to date rocks, and so needs to be separated out in the discussion of radioactive dating.

The radioactive isotope of carbon, ^{14}**C**, is formed in the upper atmosphere by the collision of ultra-high energy electrons from the sun. These high energy electrons convert one of the neutrons in normal isotope of nitrogen, ^{14}**N**, to a proton and transmute the nitrogen to carbon. This radioactive carbon has a **half-life** of 5730 years, and slowly mixes with the atmosphere and becomes a part of the normal carbon cycle. Carbon is the backbone of all living things; all foods and nutrients contain carbon. Living plants and animals are constantly taking up carbon as part of the food chain, and this includes the radioactive ^{14}**C** as well. The concentration of radiocarbon is very small -- only one atom in a million million (trillion, or 10^{12}) is radiocarbon. Although the radiocarbon is constantly decaying it is also constantly being replaced with new carbon. When the organism dies it no longer is acquiring new carbon to replace the old, and the radiocarbon continually decays. If a scientist can measure the specific activity of the radiocarbon, i.e. the amount of radiocarbon relative to the amount of regular carbon, he can make an estimate of how long ago the organism died.

Since the level of radiocarbon is so low there is an upper limit on how far back one can go. Typically, with the best methods available, scientists can measure about 10 half-lives, or 55,000 years. The primary assumption in equating the level of radiocarbon to age lies in the constancy of the rate of production and the time in the past when the process started.

From the Biblical creationist perspective, assuming a protective canopy of some description that would provide some screening of the high-energy particles from the sun, this assumption is highly questionable. Scientists are agreed, for example, that we have not yet reached an equilibrium concentration of radiocarbon. If the process of the formation of radiocarbon had been going on for a long time the rate of decay would equal the rate of production. It is known, however, that the disintegration rate is only about 2/3 of the production rate, a condition that would indicate either a relatively recent start to the whole process or a radical change in the amount of high energy particles from the sun. Because of these uncertainties scientists often refer to the dates derived from carbon dating as **apparent dates**.

It should be noted that in radiocarbon dating fully half of the dates are rejected by scientists as being invalid. Some of these dates are rejected because of pre-existing evolutionary prejudices. For example, coal is presumed to be so old (millions of years) that it does not

contain any radiocarbon. Yet when coal is actually measured it often yields a recent date (less than 25,000 years).

Robert Whitelaw, a professor at VPISU, did an extensive cataloging of published carbon dates. He cataloged over 16,000 dates, dividing them into 5 categories: man and animals in Europe, Asia and Africa; man and animals in North/South America; trees worldwide; marine fossils found 50' and higher above sea level; and marine fossils found below 50' above sea level. He then grouped these samples into 500 year increments and plotted the number of samples found in each 500 year segment of time. What he found clearly shows a world-wide catastrophe that occurred about 5000 years ago, apparent age.

Rather than be to tool of the evolutionist, radiocarbon dating may actually be a powerful weapon of the creationist.

Other radiometric dating methods.

A foundational argument in the creation-evolution debate concerns the age of the earth, and a key aspect of that argument is radiometric dating. It is becoming increasing evident that evolutionary scientists are questioning many of the assumptions of Darwinism and other characteristics of evolution, but one thing in which there is total agreement is the age of the earth. Regardless of how many weaknesses their arguments for evolution contain as long as they can show the earth and universe are billions of years old they believe that they are on solid ground. Belief in the antiquity of the earth preceded Darwin by many years and is the cornerstone of all evolutionary concepts. Radiometric dating has seemed to provide solid proof of the age of the earth, and it is an area that is difficult to attack primarily because of the highly technical nature of the process.

There are several radioactive isotopes of elements that have long half-lives and that are often found in rocks. The ones that are used most frequently in radiometric dating are:

Parent		Daughter	Half-life
^{238}U	→	^{206}Pb	4.46 billion years
^{235}U	→	^{207}Pb	.713 billion years
^{232}Th	→	^{208}Pb	14.1 billion years
^{40}P	→	^{40}Ar	1.3 billion years
^{87}Rb	→	^{87}Sr	47 billion years

In radioactive decay the relative amounts of the parent and daughter isotopes as a function of time can be plotted on a curve. If at any time one can measure the amount of the parent isotope and the amount of the daughter isotope one can use this curve to determine the age of the rock sample. The equation is:

$$\ln (U_n) - \ln (U_0) = -Kt$$

where

$\mathbf{U_n}$ is the measured amount of the parent in the sample
$\mathbf{U_0}$ is the original amount of the parent in the sample (time = 0)
K is the rate of decay, assumed to be a constant
t is the time since the decay process started

In order to estimate the original amount of the parent ($\mathbf{U_0}$) one can use the amount of the daughter isotope provided that:

a) the only source of the daughter isotope is from the radioactive decay (radiogenic);
b) the system is "closed", i.e. all of the daughter and parent are there - none has leached out or been mixed in from other sources;
c) the decay constant, **K**, has not changed due to ambient circumstances.

All three of these assumptions provide difficulties.

The fact is that not all of the ^{206}**Pb** comes from the radioactive decay of the uranium, and it is difficult, if not impossible, to prove how much does. It turns out that the same rocks that contain ^{238}**U** also contain about .7% ^{235}**U**, which has a daughter product of ^{207}**Pb**. If one writes the same equation for the ^{235}**U** decay process as above and takes a ratio of the two equations you can eliminate the requirement to know how much of the original parent there was. So instead of measuring the absolute amount of the isotopes one need only measure the ratios:

^{206}**Pb**/^{238}**U** and ^{207}**Pb**/^{235}**U**

When one plots these ratios against each other a **uranium-lead concordia** curve is obtained. If the assumptions are all correct the only expected values for these ratios lie on that curve, i.e. the two different uranium-lead isotopes give the same dates. Measurements of these ratios that do not fall on the curve, that is that give different dates, are call **discordant dates**, and discordant data is the rule and not the exception. The reason that data is discordant is that the system, i.e. the context from which the piece of rock is taken, was "open" sometime in the past. That is, condition **b** above has been violated.

Discordant data sometimes falls on another curve, a straight line that lies below the concordant curve, called a **discordia curve**. Without the presence of discordia curves radiometric dating would be useless, but evolutionists have been able to rationalize this data to their purposes. When discordant data falls on a straight line, as it often does, it intercepts the concordant curve in two places, an upper intercept and lower intercept. The lower intercept is usually assigned a relatively recent date, and it is assumed that it was at that date that the geological event, i.e. a metamorphic event that re-melted the rock, occurred and that some of the daughter product evaporated. Using this theory, the upper intercept would indicate the original age of the rock, and it is that age which is assigned to that sample.

There is an alternative model that explains the discordia curves just as well -- the **mixing model**. That is, assume we have two rocks of differing composition given by the endpoints of the discordia curve. At some point they undergo a metamorphic event in which they are partially mixed. The isotope ratios produced at various places in the resultant rock fall on a straight line with the original concentrations the end points. In other words, it produces the same discordia curve as above. This model is totally independent of the age of the rock; that is, it works just as well for rocks a few thousand years old as billions of years old. The short term models, such as mixing, have the added advantage that they explain all of the data.

Other dating techniques.

There are dozens of other dating techniques available, and they give a very wide range of dates for the age of the earth. Radiometric dating techniques are the only ones that give such immense dates for the earth. Virtually all the others give ages ranging from a few hundred to a several million years, but none besides radiometric dating gives billions of years. That is precisely the reason radiometric techniques get so much attention.

Below are a few of the various clocks with an estimate of their **upper limit** on the age of the earth.

a. Decay of earth's magnetic field. Scientists have been making accurate measurements of the strength of the earth's magnetic field since Gauss first did it 165 years ago. Since the magnetic field of the earth varies with latitude and local anomalies an accurate measurement of the earth's magnetic field requires that measurements must be taken around the world. The government has assembled these measurements taken since 1835 and it is clear that the strength of the field is decreasing with time.

The source of the earth's field lies deep in the interior of the planet, in the molten core. The core is made up primarily of iron, which is a conductor of electricity. (Although iron is ferromagnetic, the temperature in the core is higher than the Curie temperature of iron, so the iron itself cannot be the source of the field.) Within this conducting core are large, free currents of electricity which are circulating and producing the magnetic field. Thus, the magnetic field is an electromagnet, not a permanent magnet. As time progresses these currents are slowly decreasing, as they must in any circuit, and thus the earth's magnetic field is decreasing. Dr. Thomas Barnes has calculated that this decrease is exponential in nature (i.e. the same mathematic form as radioactive decay) with a half life of about 1400 years. Going back in time, the earth's magnetic field would be twice as strong in 500 A.D. as it is today, four times as strong at the time of Solomon (900 B.C.), etc. A reasonable upper limit for the earth's field would place the limit on the age of the earth at about 10,000 years.

b. Production of radiocarbon. As was mentioned above, radiocarbon is not yet in equilibrium. If the earth were as old as the evolutionists say the amount of radiocarbon at the earth's surface would be 30% greater than it is. Using the current production rate the age of the earth could not exceed 10,000 years.

Complexity of life

Archeological finds

Dinosaurs

Dinosaurs -- what are they? Did they - do they - exist?

The earliest dinosaur fossils were discovered in England in 1822. That fossil was called Iguanadon. The word "dinosaur", which means "terrible lizard", was not used until 1842. By the 1870's there was a world-wide search for dinosaur fossils.

Dinosaurs come in all shapes and sizes. Some are plant eaters, some meat eaters. They range in size from the size of a chicken to more than 90 tons. Some were armored; some had spikes on their head

or tail. Some had large, sharp teeth and others small, blunt teeth. Their tremendous variety and weird shapes, as well as their enormous size, fire the imagination.

Fossil remains of dinosaurs have been found on every continent and every modem day climate zone. They were extremely abundant, and their remains have been found in enormous graveyards.

Horned dinosaurs -- an example is **triceratops**, which was about 20 feet long and weighed 10 tons. Triceratops had mouth parts uniquely designed to feeding on fibrous plants like palms. The turtle-like beak could rip fronds; then teeth specialized for shearing could chop them up. Another example is **styrecosaurus**.

Plated dinosaurs -- this class of dinosaurs had large, bony plates that projected from the back. An example is **stegosaurus** (literally "plate lizard"), which had two rows of plates down its back. It is proposed that these plates were used for cooling purposes since the bones were laced with channels for blood flow. Stegosaurus was about 20 feet long and weighed 2 tons. The spikes on the tail were 3 feet long and about 6" thick at the base. Its brain was about the size of a walnut. **Ankylosaurus** was about 15 feet long, and its entire body was covered with armor. Its tail was shaped like a club.

Duck-billed dinosaurs -- These were large dinosaurs bearing a wide variety of bony crests on their skulls. An example is **corythosaurus**, which was about 18 feet long. In corythosaurus an air passage ran from the nostrils through the bill, up into the crest and exited in the back of the mouth. **Lambeosaurus** had a hatchet-shaped crest.

Meat-eating dinosaurs -- These are the ones that strike terror in the hearts of children. **Allosaurus** was 35 feet long and stood about 15 feet high. It head was about 2.5 feet long with lots of sharp teeth about 3" long.

Tyrannosaurus Rex means "king tyrant lizard" and was the most frightening of all. He was 50 feet in length, stood about 20 feet tall and weighed about 10 tons. Its head was 5 feet long with a mouth that could open 4 feet and was full of teeth 6" long. With all that, its front feet were quite small and too short to reach its mouth.

Big plant eaters -- **Diplodocus** was almost 100 feet long from head to tail. He was a light weight at 25 tons, and had broad pads on his feet like an elephant.

Brontosaurus ("thunder lizard") was 70 feet long, stood 20 feet at the shoulders and weighed 30-40 tons.

Brachiosaurus was called "arm lizard" since its front legs were longer than the rear legs. It was 80 feet long, stood 20 feet at the shoulders and could browse at 40 feet. Although it weighed as much as 90 tons, its brain was the size of a kitten’s, and it had nostrils on the top of its head.

Birds -- Originally classified as a dinosaur, but now recognized as being a true bird, **archaeopteryx** was about the size of a pigeon.

Dinosaurs and man

Dragons: There are many legends of dragons in literature; almost all people have ancient legends of dragons. Particularly important in China and other oriental countries. Taken together they include many different kinds of dragons.

Glen Rose, Texas: During the 1930's a controversial discovery of both human and dinosaur footprints in the Paluxy River bed at Glen Rose. The area is now called Dinosaur National Park. Carl Baugh has been continuing research in this area with a great deal of success.

Dinosaur pictographs made by early tribal artists have been found in Arizona, Siberia and Zimbabwe

Recent times: There are reports of dinosaur-like creatures: Loch Ness, Congo, interior Amazon; Japanese fishing trauler caught a pleisosaur in its nets.

Dinosaurs in Scripture

a. Creation: Gen 1:21 - the sea monsters.
b. Flood - on the ark.
c. Psalm 148:7 - sea monsters, dragons.
d. Job 40:15-24 - behemoth (brontosaurus?)
e. Job 41:1-34 - Leviathan - may refer to several creatures.
f. Job 41:18-21 - fire breather

There are Biblical references to creatures not known today. These references are made to real living creatures such as behemoth, leviathon, dragon, unicorn. Biblical translators have tried to use currently known animals, but their descriptions don't match. As an example, look at Job 41; leviathan a crocodile?

Dragons: Dragons ("Tannin") are mentioned 25 times in the Bible. The Hebrew is translated a variety of ways:

Isa 27:1 Dragon that is in the sea
Ezek 27:3 The great dragon that lies in the midst of Egypt's rivers
Mal 1:3 the dragons of the wilderness
They made wailing sounds: Mic 1:8
They pant for air Jer 14:6
They had poisonous fangs Deut 32.33
Some were small Ex 7:10 (Aaron's rod became a "dragon")
Some were great monsters Gen 1:21

Human fossils

There has much been made of the origin of man and "missing links" in the chain of being. Look at the evidence. Fossil men fall into four classes: apes, homo erectus, modern man and hoaxes/mistakes.

Ape men: Ramapithecus -- one piece ofjawbone 2" long. Similar to living baboons.
Autralopithecus -- "southern ape". Distinctly ape.

Homo Erectus: Peking man -- 2 teeth, some skull fragments. Skull fragments lost.
Java man -- a giant gibbon.

Modern Man: Cro-Magnon man. Lived in caves; advanced drawings; 100% human.
Neanderthal man. One skeletal find was discovered to be severely deformed by age and arthritis.

Hoaxes/Mistakes: Piltdown man. A hoax not discovered for 41 years.
Nebraska man. A single tooth that belonged to a pig.

Example of bias: **Footprints in the Ashes of Time**.