

The Beginnings According to Modern Science

An Assemblage of Items on the Subject that are Also Mentioned in the Bible

By Max B. Frederick, AnOldScientist

With Commentary by Clyde Spencer

And Occasional Reply by Max B. Frederick

Many and various rich people have been credited with the answer, “Just a little bit more.” when asked the question, how much money is enough?

So is the case with the question of, “How much information is enough?”

We would like the bible to present enough information on the subject of the beginning times to either decide as to the validity of the bible. Is its claim to contain information from a supernatural source a fraud or a reality?

Currently, it appears that there is just enough information to present a quandary to the mind of humans in search of certainty.

On the other hand, there is sufficient information to make the quandary legitimate.

We just wish we had a little bit more.

People have had many questions about my work. It is apparent to me, many of the questions are driven by that wish for just a little bit more information.

But there is enough information there to refute the idea that the information found in the bible all came from the creative imagination of a few intellectually superior humans. There is too much that is in coincidence with reality that could not have been known when it was originally recorded.

The ancient scriptures of the bible have much to say about the beginning times.

What they really say has been hidden for centuries—even thousands of years. It has been hidden from both theologians and scientists.

A comprehensive search reveals that what it really says is not in accord with what religion has been saying for thousands of years. It is in accord with reality as more recently discovered by modern science. Maybe even I should say, ...is in accord with reality as is currently in the process of being discovered by modern science. During my lifetime, the accord has increased due to two factors, the continuing discoveries of modern science, and the discovering that what the ancient scriptures actually say is not what the additive imagination of intelligent theologians have interpreted it to say.

During our life times (those of us that went to school during the sixties and before) modern science has been drifting closer and closer to what the bible really says.

A few hundred years ago, about the time of Galileo and the time of the translation of the King James Version of the bible, it became apparent that what theologians had been teaching on the subject of beginning times was at extreme variance with reality.

Since then there has been a war of ideas raging. Fantastic imaginative explanations have been devised by those holding to the traditional imaginative interpretation of the bible. They even call them theories. Mainly they are pseudo-theories about how scientists have to be wrong about reality. Such explanations include such things as the hydro-plate theory, the unreliability of radiometric dating, time compression theory—and many others. All these pseudo-theories have been for the single purpose of defending the erroneous theological religious imaginative teachings of licensed theologians who did not realize the wealth of information the bible really contains.

If any of those scholars, either religious or secular, would look further, into other parts of the bible, or even into the original language of the ancient scriptures, they would find the bible does have a very correct description of what really happened.

Just what does the bible really say about the beginnings?

The answer to that question seems to be, “Not enough to satisfy, but enough to present a valid quandary. There is certainly enough to show that theologians have interpreted it wrong, and that what it really says is more in accord with reality than critics would wish.

There are many creation accounts recorded in the bible, not just one up front.

These many accounts record many technical details of the beginning and development of all creation. Many of these details seem improbable to have been known by humans before their recent discovery by modern science.

A simple note of explanation may be in order here: It is much easier to recognize what the ancient scriptures originally said in the realm of reality when you go all the way back to the original language. That is because the English versions are tainted with religious interpretation. By about two hundred fifty years before the time of Christ, theologians had already inserted their interpretation of what they thought the bible said. Their insertions were based on what Greek philosopher/scientists considered to be reality. True reality, as it was originally recorded, was waiting for about another two thousand years to be discovered by modern science.

Like I said, there are many creation accounts found in the bible. There are about three dozen major ones in all. Also, there are many minor ones.

[Clyde Spencer:] And if they are not in agreement, then you have to reconcile the differences and explain them, not just ignore them. Most notably, traditional accounts in Genesis are at odds with modern science.

[Max Frederick response:] Concerning the “traditional accounts in Genesis,” It is not the original version, but the traditional interpretation of the same that is at odds with modern science. Not only is the traditional interpretation at odds with modern science, but also it is at odds with both reality and the many accounts of the bible, including the original version of the one in Genesis whose interpretation is at odds with reality. If a theologian would look closely at the main “traditional” account one would see there are two, superimposed chronologies in it. One chronology agrees with the rest of the accounts found in the bible,

with reality, and with modern science. The other is the seven-day chronology, superimposed upon the pre-existing underlying chronology, added when Moses compiled his collection of pre-existing written accounts into the book of Genesis. When one realizes the giving of the Ten Commandments and the compilation of the Book of Genesis was done in the same phase of the life of Moses, it becomes obvious that this superimposed, seven day chronology, is fictional, to illustrate an unrelated point. It becomes obvious that this superimposed chronology, similar to the fictional parables of Jesus, was fiction for the purpose of illustrating the fourth of the Ten Commandments about working six days and resting on the seventh.

When you put all the biblical creation accounts together, a time-line of items appears. That time-line has no absolute time scale, but it stretches all the way from before the beginning of the current universe, to long after the current era.

That biblical time-line records the verifiably correct order of the events that are in the past.

That correct order is not the order that bible scholars traditionally teach us that the bible says.

That correct order is not even the exact order that modern science taught some forty years ago. But modern science is currently zeroing in on the reality of that correct order.

What went so wrong?

That correct order is more in accord with what modern science is currently discovering since this old scientist went to college.

The complete, chronologically ordered, list of biblical events and details is about as long as the modern science list below. A version of that list as published in 2008 in my book, *Eyewitness to the Origins*, can be found on the internet at, <http://www.scienceandthebible.net/articles/BibleChronology.pdf>

The Modern Science View:

Lets start by looking at the details of what modern science taught about the beginnings some forty years ago, then what modern science is currently coming to. Never mind the fact that some sixty years ago, modern science was having a hard time accepting the idea that there even was a beginning. (“Big Bang” was not invented until the nineteen-sixties.)

[Clyde Spencer:] And science is still not sure that there was a single beginning. The universe may be cyclical, depending on how much Dark Matter exists. It is also possible that our universe has always existed, but in a different dimension and the Big Bang was the transition from that dimension to the one(s) we exist in. Does the bible provide any insight on resolving these alternate hypotheses?

Sequence of Events we were Taught Some Forty Years Ago: (brief version)

(Actually, the portions in *italics* were added more recently.)

In the beginning, Earth was molten.

[Clyde Spencer:] Actually, Earth may have coalesced from cold materials and initially existed as a dirty ‘snowball’ similar to comets. Eventually, enough material accumulated that compression melted the material.

[Max Frederick response:] Perhaps I should have said, "Sometime, in the beginning times, the earth was molten." I did not intend to imply that the earth started out molten. I apologize for about my lack of preciseness, or apparent preciseness when not intended. I am trying to be consistent with my use of "In the beginning" to be a reference to beginning times which is not a single event, but the accumulation of everything that happened that resulted in the environment that we live in today. That means this list is not a complete listing of everything that happened, but is a list limited to those items that really happened that also happened to be referred to in the biblical records. The purpose of this list is to show items (in limited context) that humans were quite unlikely to know from natural sources at the time when they were recorded in the ancient scriptures of the bible.

By the time it cooled enough to have solid rocks, it was still too hot for liquid water to exist.

Water, along with other volatile gasses, escaped from internal to the earth and accumulated as an atmosphere.

Eventually, it would have rained.

However, there may not have actually been a lot of water early on.

[Clyde Spencer:] Even if there wasn't as much water in the early times as there is today, it doesn't negate the sequence of events, it only modifies the magnitude of the early deluge.

Asteroids provided extra-terrestrial water over a long period of time.

Thus, Earth may have been all land to begin with,

and then the lower portions were drowned by asteroid-imported water.

The land did not rise; [to emerge from below sea level]

the lower portions were flooded by the new water!

Actually, we were taught at that time, some forty years ago, [back in the early 1970's,] that the earth was like a terrarium, neither losing water to outer space, nor gaining water from outer space. The oceans therefore had to be filled from water out gassing from the interior of the planet earth. The theory of the ocean being filled with water from outer space is a later development. That was hardly even imagined until a significant discovery was made back in the early 1980's.

[Clyde Spencer:] Actually, it is my recollection that even 40 years ago calculations were performed that quantified the rate of UV dissociation of water. The same process was used to explain why Mars appears to be relatively dry.

[Max Frederick response:] I too have a vague recollection of talk about the earth should be losing water to outer space, but it was with the disclaimer that their hypothetical source for the water was insufficient for the planet earth to be losing any [or it would become dry like they later concluded is the situation on Mars. Therefore, the earth had to be a closed system, [like a terrarium.]

The part about the continents growing to their current height of over 4 kilometers above sea floor level, and finally emerging from below sea level sometime after they were inundated by ocean sometime in the beginning times sequence that scientists call the "Archaean," was not popularized in modern science until even more recently than that.

[Clyde Spencer:] The concept of plate tectonics was in its infancy in the '60s, but it was still recognized that colliding plates would allow one slab to over-ride another and create a mountain

range. Two things are necessary for that to happen; 1) the surface rocks have to have rigidity similar to what they have today, and 2) mantle convection had to be occurring. There are Precambrian gneisses and migmatites that have survived indicating that the processes are indeed very ancient.

Updated Sequence from Observations of the Cosmos & Geologic Column:

Anyway, here is presented a rough draft of the current updated thinking on the sequence of events by modern science. This listing of the sequence of events is presented in divisions using the names invented by modern science for those divisions in the sequence of events. This is a rough draft without references. References are long and tedious and would be a distraction at this current level of presentation. Like I said, it is a work in progress so feedback is appropriate. If you need a particular reference, if you question any particular detail in the sequence of events, let me know and I will resolve the order of events, or furnish a reference.

This list includes Stages of Development, Significant Events, and Details of Conditions that were Present at the various times along the time-line—Just like the list of biblical details.

This list is by no means complete, nor all-inclusive. It is intentionally limited to items that are mentioned in the biblical accounts, or related to items mentioned in the biblical accounts.

Definitions:

The universe is the all-inclusive interdependent existence of energy, matter space and time.

The strange sounding names at the headings of the various divisions are the names scientists have assigned to the various stages in the development of the earth and life on the earth.

ETERNITY PAST (Pre-Universe):

There had to have been existence of some unknown nature before the beginning of the universe because conditions had to have been set up for that event to occur.

Before that event, conditions were set up to cause that event.

Whatever set up those conditions, it included all the order necessary to develop into the universe of today.

[Clyde Spencer:] I'm not sure that it follows that there was an existence before the creation of the universe. It may well have been that the conditions necessary for the universe to be created simultaneously created the universe – that is, they are inseparable.

Before the universe came into being, time as we know it may or may not have existed, perhaps in a different dimension.

PRE-HADEAN:

The universe had an origin, a beginning.

[Clyde Spencer:] Or not. Depending on how you define the universe and everything that exists in it. As we have previously discussed, the seminal event may have been the conversion of

preexisting energy into matter. One might argue that the universe simply existed in a different form (dimension?) before a portion of it was converted into matter.

There are various theories as to the events involved in the origin of the universe, the most well known by the general public is some version of the one the scientists called the “Big Bang” back in the 1960’s.

The Universe may have begun when interdependent energy, matter, space and time simultaneously came into existence [or maybe escaped some hold.]

Light is one of the forms of energy that [became?] abundant at the origin of the Universe.

(Light is currently the form of energy which provides a steady transfer of energy from the sun to the planet earth, where it is relied upon to be a steady source of energy to allow the existence of life.)

[Clyde Spencer:] One small quibble: Light is a narrow portion of the electromagnetic spectrum that our eyes can discern. Earth also receives invisible radio waves, IR, UV, X-rays and high-energy particles; it also receives coronal mass ejections that possess kinetic energy.

From the beginning, the universe expanded from a central location. The universe continues to expand from that point of origin.

[Clyde Spencer:] Have you ever given thought to the implications of the geometry of the universe as a result of the expanding ‘shock wave’ of energy and matter?

The galaxies formed.

HADEAN:

Early Hadean:

The sun of our solar system developed

[Clyde Spencer:] Made from the materials of supernovas of previous stars.

Many stars were developing simultaneously with our sun

[Clyde Spencer:] Just as many were also dying.

The formation of the solar system.

The planet earth came into being after the formation of the sun.

[Clyde Spencer:] It may have been essentially simultaneously formed. The subsequent pressure of the solar wind may have just cleaned things up some.

It came into being far after the beginning of the universe, yet without life of any kind

While the planet earth developed, other planets developed simultaneously

Water was, and/or had been, abundant in the outer space of the solar system.

A Hydrologic Cycle developed in outer space of the Solar System.

Small Comets developed to transport water in toward the sun from the outer reaches of the solar system.

[Clyde Spencer:] Fundamentally, water was able to accumulate once it was pushed far enough from the sun to exist in a crystalline frozen state.

Solar winds existed in the outer space of the solar system.

Solar winds transport the components of water from the interior of the solar system to the outer reaches of the solar system.

The planet earth first existed without oceans. It had a hot molten surface. [Generally, the biblical "foundations of the earth" refers to what scientists call the "mantle," or "molten mantle," (under continental and oceanic crust)]

[Clyde Spencer:] The Mantle as we know it, did not really exist until the material from the primordial accretion melted and segregated by overturning; until the siderophile elements were scavenged from the primitive melt, the mantle did not really exist. Although, one might get picky and say that a further requirement is sialic crustal material as well. Another unknown in the timing of this sequence is the role of radioactive elements, which were much more abundant 4 billion years ago, in heating and melting rocks.

When the Planet Earth cooled sufficiently to have a solid crust, it first existed without surface liquid water.

And still without life.

Juvenile surface water appeared first (ejected from interior by volcanic action as from fountains).

[Clyde Spencer:] Probably along with the water vapor that had not been incorporated into the molten rocks as was also the case with the methane, ammonia, Hydrogen, and CO2.

The planet earth existed with juvenile surface water before it had deep oceans.

At that stage of development, the Earth existed without soil.

Atmosphere developed, (primordial, with lack of oxygen.)

One of the functions of the atmosphere is to collect water from outer space into oceans by capturing water from small comets.

Water from outer space was added to juvenile water to form oceans.

The oceans were filled to some depth by the collection of water from outer space.

[Clyde Spencer:] This is where things get a little problematic. Whereas it might have been cool enough on the surface to allow liquid water to exist, there may not have been a sufficiently great temperature differential to allow mantle convection currents, and even if convection was taking place, there may not have been crustal slabs of sufficient rigidity and thickness to create mountains. So, Earth may have had an appearance similar to Mercury. Therefore, I suspect that the original inundation may have drowned the entire surface.

Middle Hadean:

Filling of the oceans continued until covering even the then existing accumulations of lighter continental material

Before the continents emerged, ocean covered planet earth including continental crust.

There were no continents above sea level.

[Clyde Spencer:] I can accept this. Although, we see some very large basaltic volcanoes on Mars, and see some high crater rims on the moon, whose Earth analogues may have stood above the water.

Late Hadean:

Initial gathering of the continental material into continents that emerged to be above sea level. When the continental material gathered and emerged to be above sea level, all the conditions necessary for erosion and deposition of erosion products were present, and thus began the deposition of the sedimentary geologic column.

Cosmos/Column Boundary

ARCHAEAN:

Initial Gathering of Continental Material. (Earth) After the oceans covered the planet earth, continental material gathered and emerged above sea level. These continents moved on the surface of the earth. They were supported by floating on molten mantle below, and were surrounded by water. Multiple continents developed. (Plate Tectonics)

[Clyde Spencer:] Although, as I pointed out in a previous email, the initial crustal material was limited in abundance. Until such time as mantle rocks became hydrated and added to the initial stock of low-density rocks, and life formed, which allowed the production of abundant limestones and siliceous oozes, there was a dearth of crustal material. Therefore, there could have been a delay in the emergence of continents until the low-density rocks displaced sufficient water to be able to emerge. So, the Great Emergence may really have been as late as Cambrian time.

Lithologic Cycle - Mountains rose by the periodic addition of buoyant rock material to their roots and then by being buoyed up by the mantle.

Isostatic Balance. The continents achieve vertical equilibrium by floating on viscous molten mantle

Mountain Building: Mountains rose by the periodic addition of buoyant material to their roots and then by being buoyed up by the mantle. (Plate Tectonics)

Hydrologic Cycle Established. (This allowed life to later be possible far inland from the sea.)

[Clyde Spencer:] This had to have come earlier!

[Max Frederick response:] True, the mechanisms involved in the Hydrologic Cycle had been around for a long while. But the significance of its ability to move water inland from the ocean was not established until there was dry land for it to move the water inland to. Thus, my cryptic statement Hydrologic Cycle Established is actually intended to refer to the establishment of it functioning to move water inland.

Atmosphere still lacked abundant oxygen.

Photosynthesis not yet fully developed.

Anaerobic life forms.

PROTEROZOIC:

Stable continents appeared and grew.

Atmosphere became habitable as well as a part of hydrologic cycle.

Carbon/hydrocarbon cycle developed to support life forms.

The continents joined in a single supercontinent called Rodinia.

Beginning of long periods of stable ecology after continental rise.

Development of Photosynthesis, the basis of the food chain.

[Clyde Spencer:] Something overlooked is the change in ocean chemistry resulting in the chemical deposition of oxides such as the banded-iron formations that became part of the crust.

[Max Frederick response:] Actually, a lot is overlooked in this listing. This listing is an attempt to intentionally be limited to only the items that are mentioned, or at least inferred by what is actually included in the collection of accounts of the beginning times that is found in the ancient scriptures of the bible. So far I have not recognized anything in the bible referring to that change in the ocean chemistry—though it may be there and I may have overlooked it. I am sure I have overlooked some of what is there. I fully expect more details to be recognized as modern science makes further advances in discovering reality that we have not yet considered. I have seen that pattern in my lifetime.

PALEOZOIC:

Atmosphere had reached modern level of oxygen

Animal Zoological (DNA) Biogenesis developed

Food chain increased supporting larger life forms.

Food Chain, Basis for more diverse ecology

Circadian Cycle develops among animal life

[Clyde Spencer:] Which brings up the question why the moon wasn't mentioned in your account. It is responsible of the length of the day. What does the bible say about the origin and timing of the creation of the moon?

[Max Frederick response:] It says it has something to do with the establishment of the circadian cycle early in the sequence of events. I hadn't thought of the modern science discovery/theory that it is responsible for the length of the day.

Cambrian:

Sustained Ecology Era

Continents break up (Plate Tectonics)

Major Mass Extinction

Ordovician:

Sustained Ecology Era

Sea life becomes abundant.

Followed by another major mass extinction.

Silurian:

Beginning of new era of sustained ecology

Climate stabilizes into global warming era

All continents more habitable worldwide

Melting ice

[Clyde Spencer:] You forgot to mention the previous glaciations that provided the ice to be melted, and the lowering of ocean levels at that time.

Rise in sea level

First vascular plants.

First fish with Jaws

Devonian:

Plant Seeds (DNA) Biogenesis

[Clyde Spencer:] Wasn't this when animals first colonized the land?

Era ends with another mass extinction

Carboniferous:

First Amniota eggs (the egg form common to turtles, lizards, birds, dinosaurs and mammals)

Era of sustained ecology with global warming and increased habitability.

Rainforests abundant.

[Clyde Spencer:] Some of this apparent climate change was the result of continental drift, allowing plates to move into latitudes of greater (or lesser) solar heating. What does the bible say about continental drifting and subduction?

[Max Frederick response:] In the English versions of the bible, it comes out saying something like overturning mountains, and casting mountains into the sea.

Permian:

Era ends with largest mass extinction recorded in the history of the earth.

[Clyde Spencer:] The Deccan flood basalts added to the stock of crustal material and probably restocked the juvenile water.

MESOZOIC:

Triassic:

Survivors of mass extinction spread and recolonized.

[Clyde Spencer:] And evolved into new forms filling the ecological niches vacated by the creatures that became extinct.

[Max Frederick response:] Also referred to as “Punctuated Equilibrium” where new life forms came into existence, a big factor may not have been their being the more fittest, but the destruction of their prior competitors in the earlier ecology, making room for a new suite of life forms.

Continents again reform into one supercontinent Pangaea.

Era of sustained ecology.

Ends with another mass extinction.

Jurassic:

First Birds

Large life forms form and thrive

[Clyde Spencer:] As I recollect, there were some fairly large amphibians as early as the Carboniferous, and most insects were pretty large.

[Max Frederick response:] Actually, in the book of Job, the bible refers to this period, not the present era, as the pinnacle of ecology.

Sustained Ecology/biogenesis

Cretaceous:

First Flowering (Seeding) Plants

Break up of supercontinent Pangaea.

Era ends with mass extinction caused by meteorite crash into earth.

[Clyde Spencer:] Asteroid

Mass Extinction by great flood

[Clyde Spencer:] Along the Atlantic coasts. The others probably were incinerated. Although, what is not obvious is why both large and small marine animals disappeared, even on the other side of the Earth!

[Max Frederick response:] I guess modern science still does not know everything. That leaves more of the excitement of discovery for future scientists. That is one of my favorite ways of inspiring young people to become scientists.

Cosmic Night/Great Storm

Order and Ecology Restored after Mass Extinction

Continuation of cycle of Extinction & Renewal (Punctuated Equilibrium)

CENOZOIC:

Stable Ecology After Mass Extinction

Age of mammals, flowering Plants, Insects...

Tertiary:

Era of tropical or sub-tropical climate

[Clyde Spencer:] *Again, what part of the apparent warming was the result of continental drift 50 million years ago?*

[Max Frederick response:] *Again, unanswered questions are good reasons for modern science to continue to function. It may be just my imagination, but as I read the latest, it seems the rate of discovery is increasing. Or maybe I am just slowing down.*

Man appeared on earth

[Clyde Spencer:] *Man's immediate ancestors.*

Tropical Ecology (as in Global Warming)

Minor Mass Extinction with Tectonic volcanism.

Quaternary:

Pleistocene:

Ecology Restored, Yet colder, harsher habitat.

Ice ages

[Clyde Spencer:] *Most recent ice ages. Where does the Precambrian Snowball Earth come into your account? Does the bible say anything about any of the ice ages?*

[Max Frederick response:] *Again, I have intentionally left out of this list what I do not recognize as being in the bible. What is amazing, is the level of completeness of what is actually in this list.*

Human species flourishes.

Another Mass Extinction (North American Large Animal Extinction.)

[Clyde Spencer:] *This is unlike all of the other extinctions defining the various geologic periods. The other extinctions involved marine life and typically are delineated by an unconformity in the rock record. Neither of those are characteristic of the NA large Animal Extinction.*

Holocene:

Historical Past of Man. Proliferation of civilization after near extinction.

Living in present & Future

END OF TIME:

Scientists have speculated that since the universe had a beginning, it will have an end.

Another Mass Extinction. [If the universe ends, all current life forms will be extinct.]

ETERNITY FUTURE:

As with before the existence of the universe something existed, scientists speculate that something similar is possible.