

Creationist Cosmology

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(note: Much on cosmology is rearranged and modified from D. Russell Humphreys, *Starlight and Time*, (1994, Master Books, Colorado Springs))

I. Our Approach to Scripture—Matt 5:18

- A. Inspiration—The Bible in its original (autographs) is verbally inspired—Neh 8:1-8; 2Tim 3:16-17; 2Pt 1:21; Matt 5:18
- B. Grammatico-Historical Method (see Milton S. Terry, *Biblical Hermeneutics* (Zondervan))—Matt 5:18, etc.
 - 1. Defined briefly—the natural meaning for the words to the original hearers (authors)
 - 2. Meaning of expression
 - a. Grammatico—(=literal=)—the most simple, direct and ordinary meaning
 - b. Historical—that meaning of author's words required by historical considerations
- C. Occam's razor (simplest explanation wins)—Do we apply it to our interpretation of scripture or to mathematical formulas? (Bouw believes both agree even here.)

II. The Problem

- A. Basic Question—If the earth is less than 10,000 years old, how can we see stars that are millions of light-years away?
 - 1. Galaxies are about 100,000 light-years in diameter
 - 2. Galaxy M31 in Andromeda is two million light-years away
- B. Previous Creationist Theories (note: these are honest attempts to be true to scripture)
 - 1. Mature Creation—God created the light rays from there to earth for each star
 - a. Problems in events that appear to have happened more than 10,000 years ago
 - 2. Moon-Spencer Theory—Light takes a shortcut from distant stars to us
 - a. Scientific measurements have not verified such short cuts
 - 3. Decay in the Speed of Light—the alleged observed decays can be explained in other ways
 - 4. Heating of Galactic Gas and Dust—technical and has a weak assumption

III. Physics Overview

- A. Gravity Distorts Time
 - 1. Einstein's General Theory of Relativity (GR)
 - a. Well tested
 - b. Physical basis for this cosmology
 - 2. GR implies that clocks at low altitude tick slower than clocks at high altitude
 - a. For example, an atomic clock at the Royal Observatory in Greenwich, England, ticks five microseconds slower per year than an identical clock at the NBS in Boulder, CO.
 - b. Both clocks accurate to one microsecond per year
 - c. Altitude difference is one mile
- B. Which is right?
 - 1. Both are right—in their own frame of reference
 - 2. God sees all time—Isa 46:10; Rev 22:13; Jn 8:58
 - 3. Comment—GR indicate that time itself had a beginning!
- C. Different cosmologies come from the same mathematical formulation of GR
 - 1. The universe @ evolutionists
 - a. No boundaries (though might be finite) and no edge
 - b. No center
 - c. Usually, they hold that the universe is all there is—God is in or a part of the universe
 - d. Implies a Big-Bang cosmology
 - i. Infinite, three dimensional
 - ii. Finite, four dimensional. (analogy, dots on a balloon expand in two dimensions but exist in three dimensions)
 - e. Implies no net gravitational force on a large scale so time is similar everywhere in the universe
 - 2. Another view
 - a. Bounded with an edge
 - b. Center
 - c. God exists outside of the universe
 - d. The universe has expanded by a huge factor—at least one thousand fold
 - e. Sufficient to produce time dilation so that 6,000 years easily measures billions of years in other parts of the universe

D. Expansion Affects the Time Difference

1. If we take the universe at the present size
 - a. Then our clocks (on earth) are ticking only slower than clocks near the edge.
 - b. Not enough to solve the problem
2. If the universe expanded by a factor of at least a thousand, then there is a solution to the problem
3. Biblical evidence of such an expansion appears in verses such as Isa 40:22

E. Black Holes and Event Horizons

1. If we imagine a bounded universe about 50 times smaller than today (2% the current size). GR implies that the entire universe would have been inside either a black hole or a white hole.
2. Black Holes
 - a. Why?
 - i. The possibility of their existence is directly predicted by GR
 - ii. Experimental evidence that they exist
 - iii. Most astronomers say there are three star-sized black holes within the universe
 - b. Properties
 - i. Combined gravitational force of mass inside is so strong that light rays can't escape
 - ii. Our 2% sized universe would be inside a spherical border called an *event horizon*—rays bend on themselves, time massively distorted.
 - iii. Matter and light exist INSIDE the black hole. They must fall inward, eventually crushed to a pinpoint of nearly infinite density
 - c. Evidence for an expanding universe dispels this as the state of the universe
3. White Holes
 - a. Why?
 - i. The possibility of their existence is directly predicted by GR
 - ii. Concept not considered popular but still considered valid
 - b. Properties—like a black hole in reverse
 - i. Our 2% sized universe would be inside a spherical border called an *event horizon*—rays bend on themselves, time massively distorted.
 - ii. Matter and light proceed outward from within the white hole. They must expand outward. There is no pinpoint except possibly at the beginning.
 - iii. Matter and light rays only escape. They could not go back in.
 - iv. The event horizon would shrink as matter passes out. Eventually, no more white hole but only scattered matter.

F. Some Scientific Conclusions—Note: The concepts used here are well known to the current physics community. The conclusions reached by assuming the universe is bounded and expanding are:

1. The visible universe was once inside an event horizon
2. The visible universe was once inside a white hole
 - a. It may have begun as a black hole before expansion started
 - b. If universe's density and size is about what is observed then the event radius has shrunk to zero radius—white hole has ceased to exist.
3. We conclude that, if the universe is bounded (has an edge), then sometime in the past the universe must have expanded out of a white hole.
4. Unbounded and bounded assumptions give very different deductions from GR
 - a. Bounded (White Hole) can explain the same data as the Big Bang but retain the idea of a young earth
 - b. Note: it may explain data which the Big Bang can't

G. Comments

1. Time effectively stands still at the event horizon according to GR
2. The Bible uses time as it is measured on the earth—Ex 20:11; Gen 1:5; 14-15

IV. Creation Week according to Dr. Russ Humphreys

A. Day One—Gen 1:1-5

Gen. 1:1 In the beginning God created the heavens and the earth. Gen. 1:2 Now the earth was formless and empty, darkness was over the surface of the deep, and the Spirit of God was hovering over the waters.

1. God creates a large three dimensional space and in it all of liquid water
2. This ball is more than two light-years in diameter—large enough to contain all of the matter of the universe. This diameter is about ten trillion miles
3. The event horizon of this 'black' hole is more than half a billion light-years away
4. The earth is a formless region at the center
5. The tremendous gravity causes extreme heat, particularly toward the center

Gen. 1:3 And God said, "Let there be light," and there was light.

6. An intense light (thermonuclear fusion) illuminates the interior

Gen. 1:4 God saw that the light was good, and he separated the light from the darkness.

7. Gravity becomes so strong that light can no longer reach the surface—Ps 104:2
8. Perhaps the Spirit is a light source (Gen 1:2) as he will be in Rev 19:23; 20:5
9. This would give the deep a dark side and a bright side
10. Is this what Job 26:10 is describing?

Gen. 1:5 God called the light "day," and the darkness he called "night." And there was evening, and there was morning --the first day.

11. Rotation continues. A reference point might go from the bright to the dark side

B. Day Two—Gen 1:6-8

Gen. 1:6 And God said, "Let there be an expanse between the waters to separate water from water."

Gen. 1:7 So God made the expanse and separated the water under the expanse from the water above it. And it was so.

1. God stretches out space with waters above the expanse and waters below the expanse
2. Water below reaches lower temperatures and becomes the earth—God is laying the foundations of the earth—Job 38:4
3. Water above is still essentially out there

Gen. 1:8 God called the expanse "sky." And there was evening, and there was morning --the second day.

4. The sun is not yet created so the Spirit is still the light source for the earth (still liquid water)

C. Day Three—Gen 1:9-13

Gen. 1:9 And God said, "Let the water under the sky be gathered to one place, and let dry ground appear." And it was so.

1. Radioactive decay occurs (?), or some other process forms the earth's crust and makes it buoyant relative to the mantle rock below it
2. Note that the water is in one place and the dry ground in another

Gen. 1:10 God called the dry ground "land," and the gathered waters he called "seas." And God saw that it was good.

Gen. 1:11 Then God said, "Let the land produce vegetation: seed-bearing plants and trees on the land that bear fruit with seed in it, according to their various kinds." And it was so.

Gen. 1:12 The land produced vegetation: plants bearing seed according to their kinds and trees bearing fruit with seed in it according to their kinds. And God saw that it was good.

Gen. 1:13 And there was evening, and there was morning --the third day.

3. God creates the vegetation
4. Probably by now the continuing expansion of space causes the waters above the heavens to reach the event horizon and pass beyond it.
5. No stars yet, only clusters of hydrogen, helium, etal.

D. Day Four—Gen 1:14-19

Gen. 1:14 And God said, "Let there be lights in the expanse of the sky to separate the day from the night, and let them serve as signs to mark seasons and days and years,

Gen. 1:15 and let them be lights in the expanse of the sky to give light on the earth." And it was so.

1. The shrinking event horizon reaches the earth.
2. Off in space, billions of years worth of physical processes allow gravity to form compact clusters of hydrogen and helium

Gen. 1:16 God made two great lights --the greater light to govern the day and the lesser light to govern the night. He also made the stars.

Gen. 1:17 God set them in the expanse of the sky to give light on the earth,

Gen. 1:18 to govern the day and the night, and to separate light from darkness. And God saw that it was good.

Gen. 1:19 And there was evening, and there was morning --the fourth day.

3. Matter coalesces into stars, the sun and the moon.
4. The stars are grouped as galaxies.
5. The more distant stars age billions of years

E. Day Five—Gen 1:20-23

F. Day Six—Gen 1:24-31

G. Epilogue—Gen 1:31

Gen. 1:31 God saw all that he had made, and it was very good. And there was evening, and there was morning --the sixth day.

1. God stops the super fast expansion
2. Adam gazes up into a completed sky full of stars