

This is week 8 in a course of study in Science and the Bible.

Last week we talked about some general views on how to read Genesis 1, and introduced the views of St. Augustine and Dr. Allan MacRae.

We also discussed various ways to interpret the meaning of "day" and particularly noted that Dr. MacRae, a Hebrew and archaeological scholar, denied that there was any necessity to take the 6 days of creation to mean 24-hour days.

Today we will start to examine the Creation account in some detail, working verse by verse.

# Genesis 1:1-2 Before Day One

## Genesis 1:1

[ESV, KJV, NIV, etc.] In the beginning, God created the heavens and the earth.

[Young's Literal] In the beginning of God's preparing the heavens and the earth --

This says *at least* the following:

- There *was* a beginning: The universe and matter are not eternal.
- Time had a beginning: Time is created; God is outside of time.
- God existed before the universe existed (compare John 1:1,2)
- The Nature "gods" are not gods at all.
  - All of the things (sun, moon, earth) that are worshipped by pagans are actually created by the one God, who alone is worthy of worship.

[I think this is a major point of the creation account]

Recall Augustine's remark.

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Q: Is this a summary of the creation further described in the following, or does it refer to the initial creation, up to the formation of an "unformed" earth?

- Recall Augustine's suggestion, quoted earlier:  
"all that God made is to be included and brought to mind first in a general way, and that then the matter of creation is to be worked out in detail."
- Dr. Newman suggests that verses 1 and 2 cover the original creation of the universe up to the initial formation of the Solar System and Earth out of a primordial dust cloud (about 10 billion years).

What does verse 1 refer to? Is it an overall summary, or a statement of what happened in the beginning? We discussed this a bit last week,

Since Augustine held to the view that the entire creation -- all of Genesis 1 and 2 -- was done in an instant, or at least outside of time (which is itself part of creation), I suggest that he takes the summary view.

Dr. Newman's suggestion in the presentation we saw last week, is that

## Genesis 1:1-2 Before Day One

### Genesis 1:1,2

[ESV, KJV, NIV, etc.] 1 In the beginning, God created the heavens and the earth.

[ESV] 2 The earth was without form and void, and darkness was over the face of the deep.  
And the Spirit of God was hovering over the face of the waters.

[NIV] 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.

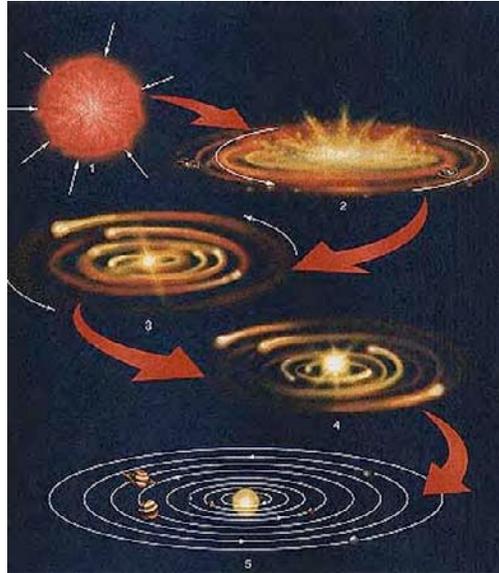
The meaning of "formless and void"

- Augustine: The earth before there was an earth. He talks about "formation of a formless being." *ibid.* §1.4, p23.
- Newman: The earth just after it congealed out of the dirt cloud during the formation of the solar system.

Actually things aren't quite so simple as that. Let's look at verses 1 and 2 together.

Augustine's view reflects the Greek science and philosophy of his day, which held that "form" is an essential feature of solid matter: there are four basic substances: earth, air, fire and water. But what distinguishes one "kind" of earth -- a diamond for example -- from another kind of earth -- a clay pot -- is the "form" of the solid. Thus to say something is "formless" meant to this view that it was not yet a legitimate substance --

Genesis 1:1-2  
formation of the earth



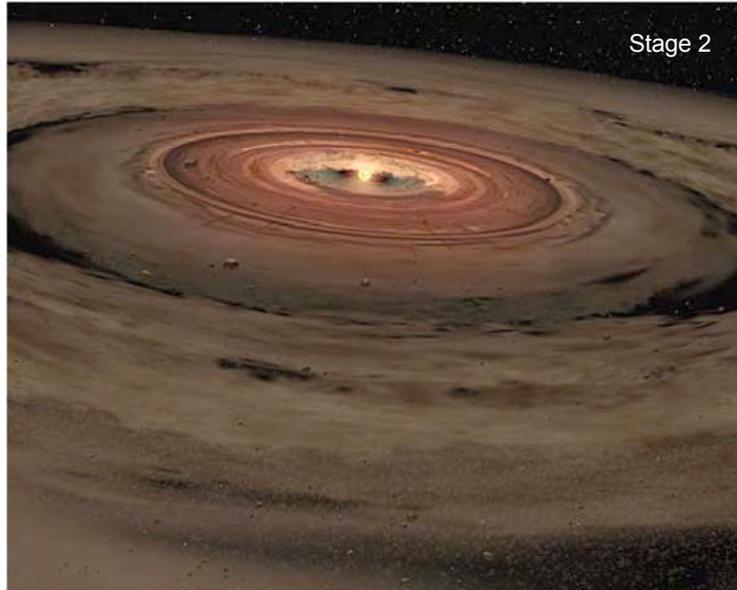
Here are some artist's views of how the earth formed -- these illustrate Dr. Newman's understanding, and follow the current scientific concensus.

The Sun is a second (or later) generation star. The reason is that the elements found in the Sun and the solar system include elements that cannot be formed

In first generation stars -- all elements heavier than nickel and iron. Such elements are created when first generation stars die in a phenomenal

explosion called a supernova. This explosion is so powerful that heavy

**Genesis 1:1-2**  
formation of the earth (2)



Here are some artist's views of the dirt cloud, with the sun ignited in the center and the future planets gradually sweeping out the debris in their orbits.

*Genesis 1:1-2*  
formation of the earth (3)



This shows the earth plowing through the cloud of debris. Collisions tend to cause the debris to melt and heat up the earth, so that eventually the earth is a molten sphere.

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The meaning of "formless and void"

- Augustine: The earth before there was an earth. He talks about "formation of a formless being." *ibid.* §1.4, p23.

⇒ • Newman: The earth after it congealed out of the dirt cloud during the formation of the solar system. Covered with water.

- Scofield: A primordial chaos (the "gap"?)  
1st Ed (1917): "The earth made waste by judgment (Jer. 4:23-26)"  
2nd Ed (1967): "Two views: Original Chaos or Divine Judgment"

- My View: push the time back to the very beginning of the universe, before earth formation. (cf. St. Augustine). "deep", "waters" = "fluid" and "darkness" refer to the primordial chaos of the early universe. -- say more later.

Continuing with Dr. Newman's view: The darkness expresses the time before the Sun ignited, or perhaps the fact that in the early stages of the earth, after it formed and cooled from a molten state, the earth was fairly smooth so that it was covered everywhere with hundreds of feet of water that had "outgassed" during the cooling process.

The original Scofield Bible has the heading "The earth made waste by judgment" over

Genesis 1:1-2  
Early earth



This shows the early earth covered with water. The sunlight does not show through the dark clouds and volcanic debris.

Violent earthquakes and volcanoes occasionally punch up through the water, but the cones rapidly erode away, so there is no

Permanent land.

## Genesis 1:3-5, Day One:

### Genesis 1:3-5

[ESV, NIV] 3 And God said, "Let there be light," and there was light. 4 God saw that the light was good, and He separated the light from the darkness. 5 God called the light "day," and the darkness he called "night." And there was evening, and there was morning—the first day.

What happened when God said "Let there be light"?

- Augustine takes it in the figurative sense of mental illumination:
  - he asks, "Is it something spiritual or material?" I think he tends to favor spiritual, something like the "Word" of John 1:1, and "In him was light"  
*The Literal Interpretation of Genesis Vol. 1, §1.3.7, p22.*
- Dr. Newman takes it to be the ignition of the Sun (which lightens the earth but is obscured by cloud cover until day 4).  
Robert C. Newman Powerpoint, *Christianity and Science*
- I prefer to take the "light" as the original creation of energy at the very beginning. Light is just a visible form of energy, which is the basic building material of the elements. [cf. Einstein's formula  $E = mc^2$ ]. So, in effect, Day 1 begins with the Big Bang.

Just to make things even more difficult: when does day 1 begin? At verse 1 or verse 3? Generally, the [uninspired] headings found in the translations start the six days at verse 3, although I am sure some would dispute this.

So the next question is, what happened when God said "Let there be light"?

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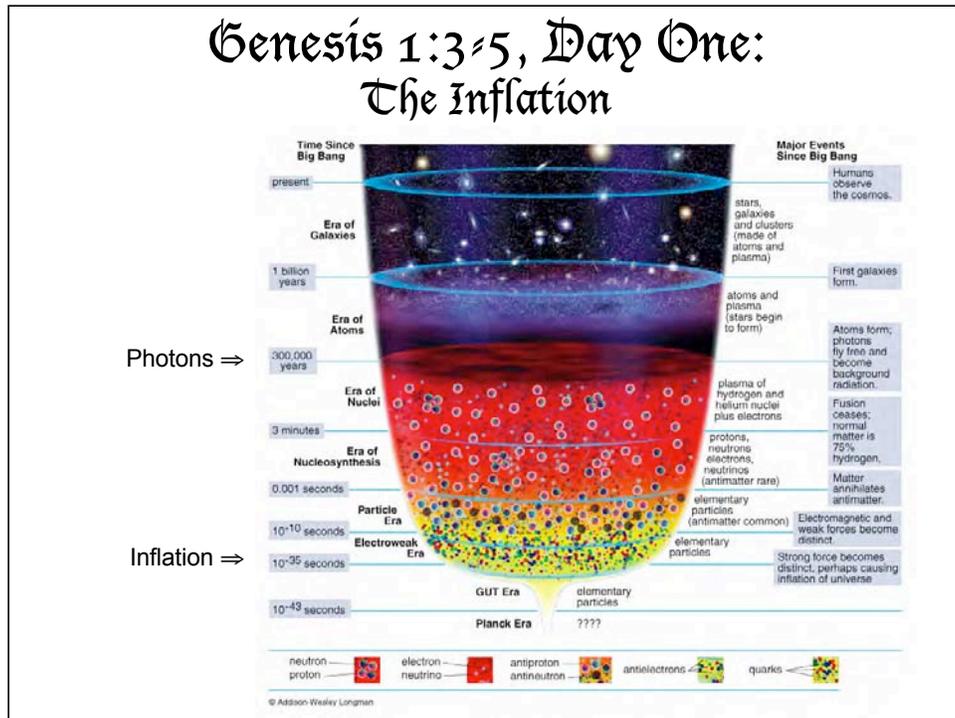
[ESV, NIV, ] 3 And God said, "Let there be light," and there was light. 4 God saw that the light was good, and He separated the light from the darkness. 5 God called the light "day," and the darkness he called "night." And there was evening, and there was morning—the first day.

What does "He separated the light from the darkness" mean?

- Some take this to mean that the earth begins to rotate, which starts off the day/night cycle.
- Dr. Newman takes it to be clearing the cosmic dirt cloud from around the Sun so that its light (but not its shape) penetrates and lightens the earth in its direction. The Sun becomes visible on Day 4.
- I prefer to take the "darkness" in a much more physical sense -- the time in the Big Bang reconstruction that is called "the inflation period." This period made it (eventually) possible for matter to form, including galaxies, stars and planets.

-- The Ariel skit.

# Genesis 1:3-5, Day One: The Inflation



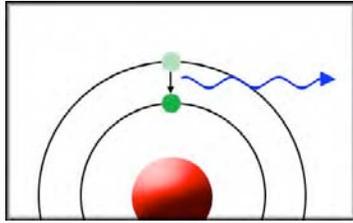
The Ariel skit dramatizes a remarkable feature of the current understanding of how the universe began. Shortly after the Bang,

the universe suddenly expanded (much faster than the speed of light) from the size of an atom to the size of a grapefruit. From that

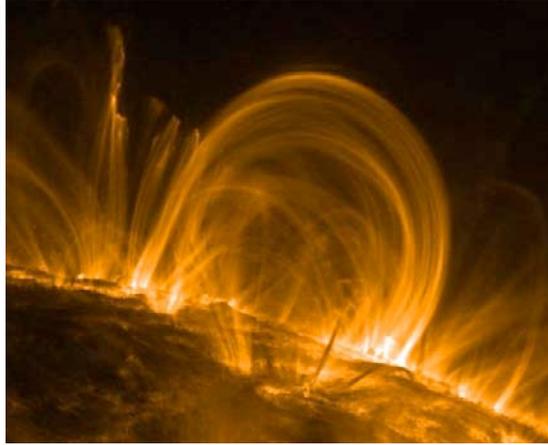
time to the present it has expanded at a rate just under the speed of light.

If that inflation hadn't occurred, the universe would probably have collapsed back on itself. In my view this is a great

## Genesis 1:3-5, Day One: Solar Plasma and Atoms



A photon is born



Solar plasma following magnetic lines of force

This shows how a photon is emitted when an electron drops into a lower energy state.

The right shows solar plasma - part of the solar corona that is visible during an eclipse of the Sun. Magnetic storms on the surface of the sun produce these huge loops -- many times the size of the earth. They also produce radio static.

## Genesis 1:3-5, Day One: Summary

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Just two more things to note:

- Light appeared -- not "created"
- It was good.

So you can see there is a lot to ponder just in the simple statement about the creation of light and darkness. I should note in wrapping up

this day that it doesn't say that God created light (as it does say in verse 1 about creation of the heavens and the earth. It just says that

God made it appear. This observation fits with all of the views of what these verses mean, because whichever way it happened, the light

"appeared" -- it was not created as such.