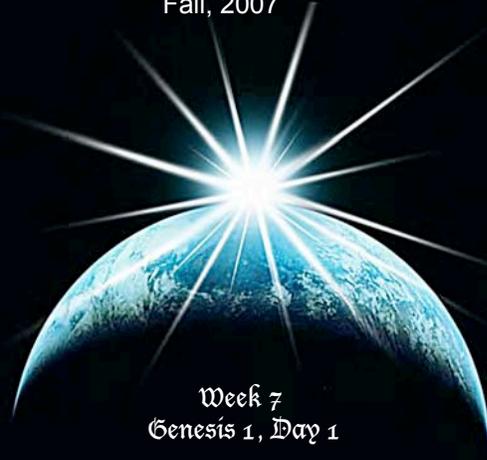


Science and the Bible

A Course of Study
by
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Fall, 2007



Week 7
Genesis 1, Day 1

This is week 7 in a course of study in Science and the Bible.

Today we will start to examine the Creation account in some detail.

St. Augustine's Warnings about Science and the Bible

St. Augustine (354-430) "It is frequently asked what our belief must be about the form and shape of heaven according to Sacred Scripture. Many scholars engage in lengthy discussions on these matters, but the sacred writers with their deeper wisdom have omitted them. What concern is it of mine whether heaven is like a sphere, or whether heaven [is] like a disk?"



But the credibility of Scripture is at stake, and there is a danger that a man uninstructed in divine revelation, discovering something in Scripture that seems to be at variance with the knowledge he has acquired, may hold his assent over matters where Scripture presents useful admonitions. In the matter of the shape of the heavens the Spirit of God did not wish to teach men these facts that would be of no avail for their salvation."

The Literal Interpretation of Genesis Vol. I, §2.9.20, p59 c.ellipses.

Quotations from John Hammond Taylor, S.J., *St. Augustine: The Literal Meaning of Genesis (Vol. I and II)*, Paulist Press, 1982

St. Augustine Questions of Approach.

St. Augustine (354-430)



"And how did God say '*Let there be light*'? Was this in time or in the eternity of His Word? And was there the material sound of a voice? And what was the language?"^{[Ibid. §1.2.5, p21].}

"Why is it stated, *In the beginning God created heaven and earth*, and not '*In the beginning God said, Let there be heaven and earth* and heaven and earth were made?' Are we to understand that by the expression *heaven and earth*, 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, as for each object the words *God said* occur?" ^{[§1.3.8, p22].}

St. Augustine Questions of Approach.

St. Augustine (354-430)



"Usually, even a non-Christian knows something about the earth, the heavens, and the other elements of this world, the cycles of the years and the seasons, about the kinds of animals, shrubs, stones, and so forth, and this knowledge he holds to as being certain from reason and experience. Now it is a disgraceful and dangerous thing for an infidel to hear a Christian, presumably giving the meaning of Holy Scripture, talking nonsense on these topics. If they find a Christian mistaken in a field which they themselves know well, and hear him maintaining his foolish opinions about our books, how are they going to believe those books in matters concerning the resurrection of the dead, the hope of eternal life, and the kingdom of heaven? Reckless and incompetent expounders of Holy Scripture bring untold trouble and sorrow on their wiser brethren when they are caught in one of their mischievous false opinions." [bid. p43, c. ellipses].

St. Augustine on Creation Days.

St. Augustine (354-430)



"The days of creation, [St. Augustine] suggests, are not periods of time but rather categories in which creatures are arranged by the author for didactic reasons, . . . Which in reality were created simultaneously [and instantaneously - dcb]."

The Literal Interpretation of Genesis Vol. I, Introduction, p9.

Views on the Genesis "Day" [יֹמִים = Yom]

- Seven sequential 24-hour days
[strict literal interpretation]
- 24-hour days separated in time
[sequential literal interpretation = "creation wrap-ups"]
- Revelation days
[visionary literal interpretation]
- Topical days
 - a. Correlated with geologic ages
 - b. Arranged by subject matter
 - c. Formal construct [3 days of forming, 3 days of filling]
- Distinct periods of indefinite length
 - Overlapping or sequential
 - Perhaps continuing to today[cf. Genesis 2:4 "In the *day* that the LORD God made the earth and the heavens"]

MacRae's letters.

Augustine's View

Views on the Genesis "Day" [יָוֶם = Yom]

On statements made by Harry Rimmer -

- The statement that the Hebrew word "Yom" always means the time it takes the earth to revolve once on its axis. This is a statement for which there is no evidence in the Scripture anywhere.
- The statement that whenever the word "Yom" has a number before it, it always means a solar day. There is no evidence for this anywhere in Scripture.

"Personally, I have no objection to anyone's thinking that these were 24-hour days. But I consider it very foolish for anyone to be dogmatic about it. We just don't know. As the words stand in the Scripture, they sound to me much more like long periods than like 24-hour days. God does not tell us whether they were 5-minute days, or 24-hour days, or 2-billion-year days, or indeterminate periods of time."

Allan A. MacRae, *Notes on The Interpretation of Creation Days*, 1964

Notes by Allan MacRae responding to remarks by Harry Rimmer in a debate (about 1964). It should be noted that Dr. MacRae is a thorough Bible Scholar who specialized in the Old Testament. He was an expert in Hebrew and other ancient languages of the Near East, so his remarks about usage of the Hebrew language are based on thorough scholarship and carry the weight of significant authority.

I would add to the last remark "We learn that (if it is possible to learn anything about it at all), from examining the Book of God's Works his Creation "

Views on the Genesis "Day" [יֹמִים = Yom]

Moses clearly used the word 'day' [in Genesis 1 and 2 - dcb] in three senses:

- The period of light between two periods of darkness (Gen. 1:5)
 - A succession of days (Day 1 through Day 6)
 - A general period of time (Gen. 2:4)
- The only place where the natural reading demands an instantaneous event is in the statement "Let there be light and there was light." In all other instances of creation described in Genesis 1, the wording and natural interpretations imply the passage of time.
- The language in the 3rd, 5th and 6th days sound to me far more as if God performed processes that took millions of years, than as if he did something within a 24-hour period. In any event, these three days do not describe instantaneous acts, but processes, even if they may have been so speeded up as to occur within a few hours.

Allan A. MacRae, Notes on The Interpretation of Creation Days, 1964

Response to comments made by Harry Rimmer in a debate:

Views on the Genesis "Day" == My Personal Synopsis ==

- I believe the Genesis account reflects the logical progression of God's creative activity.
 - There is a remarkable correlation with the actual creation sequence as reconstructed from geological investigations.
 - * The "days" lay out the *initiation* of [selected] major stages. (But some room for various interpretations still exists within the overall structure.)
 - * This agreement is NOT what one would expect from an un-inspired, imaginative reconstruction of the Creation account.
 - * Each day's activities are still ongoing up to the present (e.g. stars are still burning, species still appearing)
 - * Each day's activities required direct creative acts of God.
 - * God is still intimately involved with his creation today
["In him all things hold together", Col. 1:17]
 - The actual process of creation took literally billions of years to do.

I say "selected" because not all major stages of the creation sequence are described -- for example, the creation of single-cell microbes which logically preceded any visible life, the beginnings of plant life in the oceans, etc.

Views on the Genesis "Day" == My Personal Synopsis ==

- God used natural processes when they would suffice, but at all steps he guided these processes and "took over" when natural processes would not achieve the necessary results.

[Examples: The initiation of the first living cells, creation of "kinds", and -- in particular -- the creation of Man in his image.]
-- One of the greatest beneficial achievements of natural science is to determine just *what are* the limits of natural development.
-- It may not be wise to pre-judge what these are!

I say "selected" because not all major stages of the creation sequence are described -- for example, the creation of single-cell microbes which logically preceded any visible life, the beginnings of plant life in the oceans, etc.

Views on the Genesis "Day"
// My Personal Synopsis //
Answer to St. Augustine's Dilemma. . .

Why did God constrain himself to create in time when he could have done everything instantaneously?

- To leave a true record of his creative activity "in silent speech" so that as scientists learn to read that speech, it testifies to the glory and handiwork of the Creator, as a witness to those whom God has chosen for eternal life, and as a witness against those who have refused to heed it.
 "He who has ears to hear, let him hear" [Matt 11:15]
 "So that hearing they do not hear" [Matt. 13:13]
- So that the valid conclusions of scientists would speak truth.
- So that scientists could learn how natural processes work [and therefore emulate them in their own work].

I believe the answer to Augustine's puzzlement is that God intentionally placed a record of his creative activity in his creation as a truthful witness to himself.

In order to be truthful, he could not, for example, "create light on the way", because that would give a false message to scientists who learned to

read the details of the early history of the stars in that light.

When Jesus created Adam, I don't know if he created him as an adult (although I imagine that he probably did), but in any

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.

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 --

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?

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 verses one and two bring us up to the

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

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 1:3-5, Day One:

Genesis 1:3-5

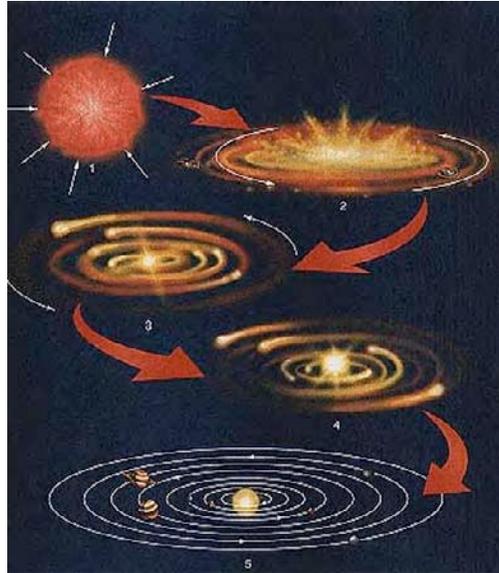
[ESV, NIV,] 3 And God said, "Let there be light," and there was light. 4 God saw that the light was good, and He separated the light from the darkness. 5 God called the light "day," and the darkness he called "night." And there was evening, and there was morning—the first day.

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, or perhaps a miniscule fraction of a second after the Bang, when the primordial radiation resolved into the light spectrum.

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. I am happy with that assumption.

Genesis 1:3-5, Day One: formation of the Solar System



This is a graphic of the formation of the Solar System, as discussed by Dr. Newman.

A large ball of cosmic dirt starts contracting (step 1).

As it contracts two things happen: it heats up and rotates faster causing it to bulge out (step 2)

The chunks in the dirt begin to congeal due to their gravitational attraction (step 3).

Eventually most of the dirt is swept out (step 4) by the forming planets

And the planets finally cool and solidify (step 5)

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.

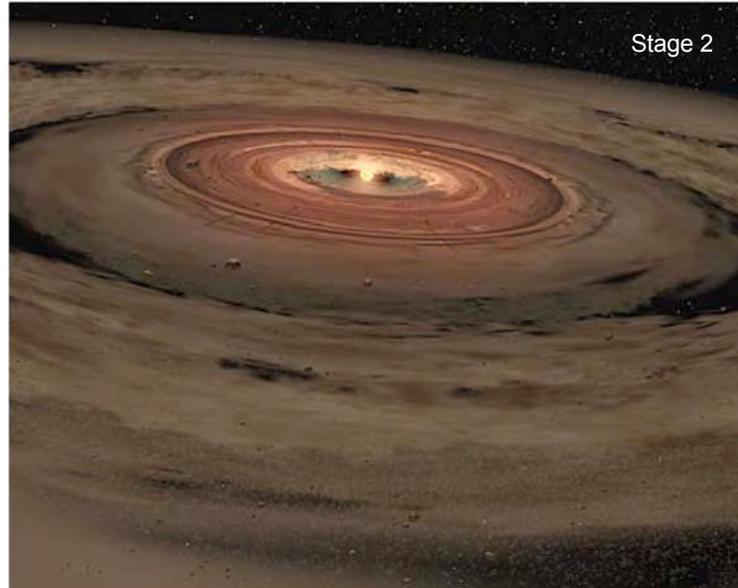
What does "He separated the light from the darkness" mean?

➤ Dr. Newman takes it to be differentiating the cosmic dirt cloud to form planets.
"Material to form planets pushed outside central bulge."

➤ 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:
formation of the Solar System



This is the flattened dirt ball, with the sun starting to ignite in the center, and the planets starting to form.

As the planets sweep out the dirt in their orbits, the orbits gradually clarify.

An Introductory look at Genesis 1

- Why does the Bible begin with the Creation account?
 - What mattered to people in that day?
 - their gods
 - their crops
 - their prosperity and success
- What does Genesis 1 have to do with that?

} Uncontrollable
forces in
their lives

Have you ever wondered why the Bible begins with Genesis 1?

An Introductory look at Genesis 1

- The message of Genesis 1:
 - God is NOT part of Nature
 - Nature gods are not gods at all.
 - All of Nature is designed by God and under His control.
 - The natural world is "good."
 - purposeful and harmonious.
 - [- what happens with the Fall?]
 - Creation had a beginning
 - Humans are created in God's image
 - God put them in charge of his creation
- ==> The "Science" in the Creation Account is incidental
(but accurate)

Have you ever wondered why the Bible begins with Genesis 1?