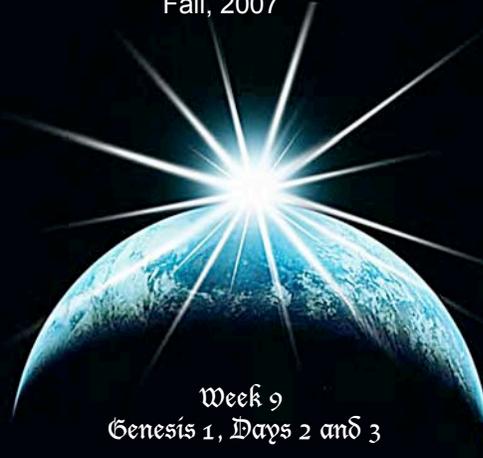


Science and the Bible

A Course of Study
by
Dr. David C. Bossard
Fall, 2007



Week 9
Genesis 1, Days 2 and 3

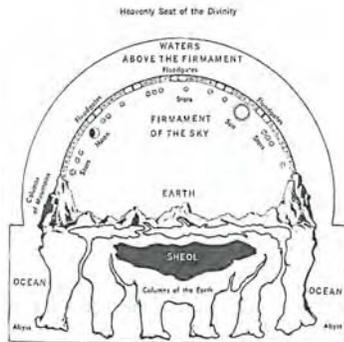
This is week 9 in a course of study in Science and the Bible.

Last week we talked about Day 1 and today we will go on to days 2 and the first part of Day 3.

Genesis 1:6-8, Day Two Creation of the Atmosphere

Genesis 1:6-8

[ESV] 6 And God said, "Let there be an expanse [KJV "Firmament"] in the midst of the waters, and let it separate the waters from the waters." 7 And God made [2] the expanse and separated the waters that were under the expanse from the waters that were above the expanse. And it was so. 8 And God called the expanse Heaven [NIV "sky"]. [3] And there was evening and there was morning, the second day.



A common view is that this and other Bible verses present a view that the "firmament" is a solid dome which separates waters above from waters under the dome. This is not a correct interpretation.

A more accurate interpretation is:

- >The firmament is the atmosphere
- >The "waters above" are clouds
- >The "waters under" are the oceans.

see Newman, *The Biblical Firmament: Vault or Vapor?*

A common view that many people hold is that this and other Bible verses present a "Jewish Cosmology" in which the "firmament" is a solid dome which separates

waters above from waters under the dome. In this interpretation, "windows of heaven" in the dome let water through, which results in rain.

This is a fanciful interpretation of the Biblical accounts which assumes that the Bible reflects the common ancient Near East cosmology.

This interpretation assumes that the authors shared this ancient view and wrote it into their accounts.

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Early earthscape

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Let's look at this process as most modern scientists would understand it.

There is something curious about day 2. All that happens is that the "firmament" is created which separates "waters above" from waters below.

But this brief statement conceals a lot of creative activity.

When the earth first formed and cooled from a molten mass, water escaped from the hot earth in the form of water vapor. Eventually the

Genesis 1:6-8, Day Two Creation of the Atmosphere

How did creation of the atmosphere proceed?

- When earth first formed from the dirt cloud, constant bombardment caused the earth to melt from the heat of impact.
- Early on, collision of a Mars-sized object with the Earth created the Moon in a low orbit (perhaps 30,000 miles).
- Earth cooled from a molten state.
- Violent tidal action continually broke up the crust, which re-forms and ejects water vapor from the interior in violent volcanic eruptions.
- A solid, smooth crust of magma covered the Earth.
- As the temperature fell below the boiling point, water rained down to form the oceans on the magma crust.
- Eventually the atmosphere stabilized with dense clouds in the cold upper regions and the earth covered everywhere by an ocean about 800 feet deep (Dr. Newman says 2 miles).

The main energy source for violent volcanic eruptions is water that has become super-heated steam.

Since the earth was fairly smooth at first, an ocean completely covered the whole earth with dense clouds overhead.

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When the earth first formed from the dirt cloud, the constant bombardment caused the earth to melt

and cooled from a molten mass, water escaped from the hot earth in the form of water vapor. Eventually the earth cooled and much of the water vapor rained onto the earth to form the oceans.

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Mars-sized object hits Earth

Fahad Sulehri ©2006 Used by Permission



Debris from Impact (5 hours later)

William K. Hartmann, Used by Permission

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Early Moon Formed

William K. Hartmann, 1999. From
<http://www.psi.edu/hartmann/pic-cat/earth.html>

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Tidal action from the nearby moon tugs and pulls at the crust so that it cracks and huge volcanoes

appear. These volcanoes spew ash and particles into the atmosphere, which makes the cloud

cover dark and gloomy. Occasionally the volcanic cones pierce the ocean surface, but they

Quickly erode and form shallows beneath the surface.

What happens next?

Genesis 1:9-11, Day Three, Part 1:

Genesis 1:9-11

[ESV, NIV,] 9 And God said, "Let the waters under the heavens be gathered together into one place, and let the dry land appear." And it was so. 10 God called the dry land Earth, and the waters that were gathered together he called Seas. And God saw that it was good.

At the start of Day 3 God creates dry land. How is this done?

- The earth's mantle has a mixture of many materials
- Heat convection causes currents in the molten earth's interior, bringing heat from the earth's core to the surface.
- Tidal effects pull and tug at the crust causing cracks.
- The currents pull at the earth's crust, causing collisions at the cracks. As the collisions pile up, the crust sinks under the weight and melts. Material with lower melting points melts first. These are the materials that form granites and they are lighter than the material left behind, called basalt.
- The granites float on the basalt, forming the dry land.

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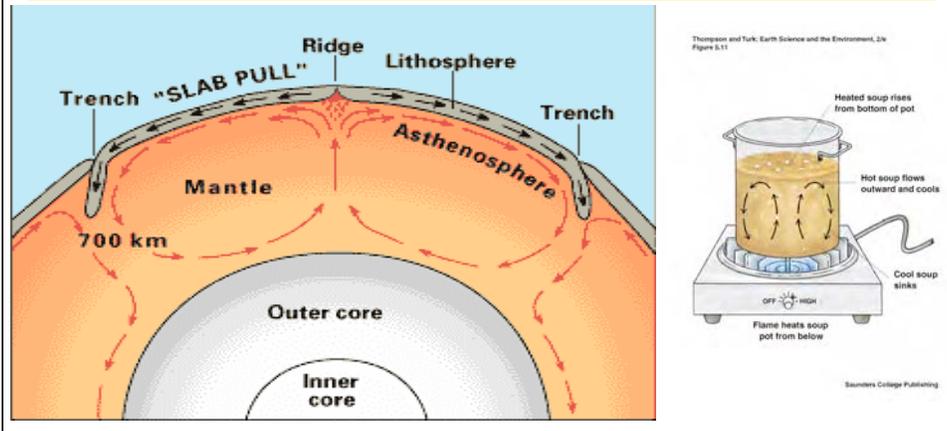
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The earth's hot central core is the main source of heat that causes the convection currents in the earth.

The core is kept hot by nuclear fusion of uranium and other heavy elements.

Ironically, the source of earth's heat was a puzzle to scientists before Marie Curie discovered radiation

and shortly later Albert Einstein discovered the conversion of mass to energy, in his famous equation $E=mc^2$.

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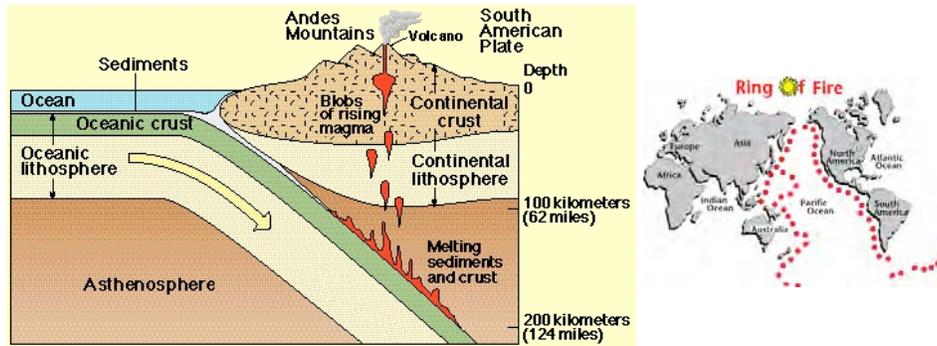
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The dry land, mostly made up of granites, floats on top of the crust because it is lighter weight

than the ocean floors which are denser, called basalt. Of course erosion from the dry land

causes sedimentary deposits to grow on the ocean floor, but the ocean floor is constantly being

pulled along and eventually under the dry land.

Genesis 1:9-11, Day Three, Part 1:



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[Show movies?]