Some of your comments regarding Dr. Schroeder’s previous tothesource articles in the Genesis Project series suggest that he does not believe the biblical statement that six days passed between the creation of the universe and the creation of humankind. Dr. Schroeder is definitive: he takes the Bible as it stands.

One of the most obvious perceived contradictions between the Bible and modern science is the age of the universe. Scientific data from the Hubbell telescope suggest it is 14 to 15 billion years old. But when the generations of the Bible are added up, they total 5700-plus years. Certainly both can’t be right. But Dr. Schroeder believes they both are, depending on your vantage point.

May 16, 2006

Dear Concerned Citizen,

The universe may be only some 5700-plus years old. God could have put the fossils in the ground and juggled the light arriving from distant galaxies to make the world merely
appear to be billions of years old. There is absolutely no way to disprove this claim. God, being infinite, could have made the world that way.

Most scientists disagree. They say the universe is billions of years old. But scientists can be wrong, even about something as important as the age of the universe. In 1959, a survey asked leading American scientists, "What is your concept of the beginning of the universe?" Two-thirds answered: "Beginning? There was no beginning. Oh, we know the Bible says 'In the beginning.' That's a nice story, it helps kids go to bed at night, but we sophisticates know better."

That was less than 50 years ago. Then in 1965 Penzias and Wilson discovered that the entire universe, in all directions, is bathed in a sea of very long 'cold' radiation, an echo of the big bang, the radiation left over from that intense hot moment that marked the universe's beginning. This one piece of information confirmed that our universe had a beginning. For this Penzias and Wilson earned the Nobel Prize.

Most respectable scientists now agree with the Bible that the universe had a beginning.

So the biblical creation account got the fact that our universe had a beginning right, when most scientists had it wrong. But for many skeptics, that's about all. They now target the Bible's claim that the universe was created in six 24-hours days as pure silliness. What they don't realize is that the most current science is teaching exactly this, that the world is young and old simultaneously. It all depends on the time and place from which you are looking, and who (or Whom) is looking.

As humans on earth today we use scientific instruments to look back from the creation of Adam to the creation of our universe and see evidence of billions of years passing. These are billions of years using our human perspective. That's our view of time. But the Bible's creation account describes that same flow of events from the beginning looking forward. The biblical account of the first six days of creation, before Adam's soul had been created, is more of an autobiography of God than a biography of man. Let's call this perspective “Genesis time”.

As hard as it is for anthropocentric humans to remember before Adam there was God. It’s not always
about us and how we see things.

It is my theory that Genesis time and human time can be understood, relative to each other, through a careful reading of the Torah, and with the help of modern science.

Contrary to what many of you have said in your letters, I believe these unique six days were six 24 hours days. I reject the ideas that the biblical account is not factual and that the days are not specific periods of time but symbolic "epochs". No such simple explanation is possible because every ancient commentary, with no exception, and that includes the Talmud (in the section called Holidays, ca. 500), and Rashi (ca. 1090), and Nahmanides (ca. 1250) all tell us that the six days of Genesis were six 24-hour periods "not longer than the six days of our work week."

Instead of being our enemy, it is modern science that now helps us reconcile this discrepancy.

At the moment of the big bang, when the universe was still pure energy, there was no matter to record the passage of time because at the speed of light, time does not exist. Once light beams became matter they entered the realm of time. Time grabbed hold when matter formed from the light beams of the big bang creation.

This miniscule moment of time before the biblical clock begins lasted about 1/100,000 of a second. The biblical six days of Genesis, what I am calling Genesis time, begins here, at the formation of the first stable matter.

Science has also shown that when space, and the matter in it, expand, it effects the flow and our human perception of time.

Every scientist knows that when we say the universe is 14 to 15 billion years old there's another half of the sentence that we never say. The full statement should be: The universe is 14 to 15 billion years old as measured from the earth today. In short, from human time. But the perception of Genesis time sees the development of the universe from the beginning looking forward. For that reason, Genesis 1:5 reads "And there was evening and there was morning one day." The Bible did not write "a first day" because from the Genesis time view there was not yet a second day and first can only be used correctly if there is already a second, first being relative to the second.

But how much of these 14 to 15 billions of years is the direct result of the expansion of the universe? Another way to ask this is, "How would those billions of years be perceived from near the beginning of the universe looking forward, from Genesis time? To find this we need to factor out the stretching of matter and time which so dramatically effects our human perception of time?

Science helps us here as well. Cosmology has quantified the data so we now can calculate Genesis time (the "view of time" from the beginning) relative to human time (the "view of time" today on earth). It's not science fiction any longer.

Any one of a dozen physics or astronomy textbooks brings the same number. The general expansion factor from the moment of stable matter formation (nucleosynthesis is the term) to now is a trillion. The universe is a trillion times larger than it was at nucleosynthesis.
The Torah tells us that from the perspective of Day One six days passed between the creation of the universe and the creation of Adam.

If we multiply these six Genesis days by a trillion we have six trillion human days. Six trillion human days is a very interesting number. What would that be in human years? Divide six trillion days by 365 and it comes out to be 16 billion human years.

The equation is very simple:

\[ \frac{6 \text{ days (in Genesis time)}}{1 \text{ trillion (degree of expansion of the universe)}} \times \frac{6 \text{ trillion days (in human time)}}{365 \text{ days in a year (in human time)}} = \frac{16 \text{ billion human years (in human time)}}{1} \]

Now take about 10% off for two factors that reduce human time. (1) Adam received the Neshama (the soul of human life) during the sixth day, not at its end. (2) Recent observations tell us the universe is actually increasing in its rate of expansion.

Correcting for these two factors, the 16 billion years becomes 14 to 15 billion year in human time. It turns out that the scientific confirmation of the universe's age at 14 to 15 billion years (in human time) also confirms the universe's age at just under 6 days (in Genesis time), the exact moment the Bible tells us God created the human soul. This is the moment when the biblical account moves from Genesis time to human time.

Not a bad 'guess' for 3300 years ago!

The way the scientific and the biblical 'ages' match is extraordinary. I'm not speaking as a theologian, I'm making a scientific claim. I didn't pull these numbers out of my hat. I used numbers that the best current science is using. That's why I led up to the explanation very slowly, so you can check the science and the biblical account as well.

Now we can go one step further.

Let's look at the development of time, day-by-day. Every time the universe increases in scale by a given factor, the time as perceived at the beginning is divided by that same factor. When the universe was small, its rate of doubling was very rapid. But as the universe got larger, the time it took to double in scale was ever longer. This rate of expansion is quoted in "The Principles of Physical Cosmology," a textbook published by Princeton University Press, and used literally around the world.

Therefore the first 24 hour day (Day 1) of Genesis time lasted 8 billion years in human time. The second 24 hour day (2nd Day) of Genesis time lasted 4 billion years in human time.

The Bible is so certain it brings the truth that it tells us what happened on each of the six days. Now we can see if modern cosmology, paleontology, and archaeology match the biblical claims day-by-day. I'll give you a hint- they match up so closely it will send chills up the spine of even a confirmed atheist.

How did this biblical account of our beginnings get so much of the science correct so many
millennia ago, if it did not come from God?

From Adam’s (human time) point of view the universe is 14 to 15 billion years old. Science now confirms this. But once you squeeze the expansion out of the universe to find the age of the universe as seen from its beginning (from Genesis time) the universe was created and made in six 24 hour days. Those who believe the exquisite and profoundly simple biblical account of the universe’s creation and making should be confident in asserting this truth as well.

The universe, up to the creation of Adam’s soul, is 14 to 15 billion years old in human time and it is 6 days old in Genesis time, with no bending of either the Bible or the science. It is the same series of events, told from two different vantage points.

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**Introduction**

By Gerald Schroeder and Kelly Walker

This book is a fresh look at how God created the magnificent universe within which we dwell as guests. It is the story of the Creation as told in the first chapter of the first book of the Bible, Genesis. It is also the history of the universe as verified by science. This depiction moves beyond the debate between science and religion, toward a rational harmony of Genesis and the scientific record.

Click here to read the full introduction to: *Genesis Project*
Verse 1-5: In the beginning God created the heavens and the earth. And the earth was without form, and void; and darkness was on the face of the deep. And the Spirit of God hovered over the face of the waters. Then God said, "Let there be light," and there was light. And God saw the light, that it was good; and God divided the light from the darkness. God called the light Day, and the darkness He called Night. And there was evening and there was morning, day one.

Click here to read this past tothesource article: Genesis Project - Day 1

Verses 6-8: Then God said, "Let there be a firmament in the midst of the waters, and let it divide the waters from the waters." Thus God made the firmament, and divided the waters that were under the firmament from the waters that were above the firmament; and it was so. And God called the firmament Heaven. And there was evening and there was morning, a second day.

Click here to read this past tothesource article: Genesis Project - 2nd Day
Responses to:

Thank you for your extensive resources and comments regarding Dan Brown's very fanciful, very profitable, book and movie. My family listened to an audio rendition of the Code last year on a road trip and found it very engaging (we sometimes lingered in the car at fuel stops to finish a chapter!) —but full of baloney! I'm grateful for the opportunities the book and movie present. Brown has stirred up obscure history with promises of plots and secrets, and is grabbing the interest of millions. From that milieu we can preach and teach more robustly the saving grace and power of the real
Jesus. Last Sunday I concluded a three-sermon series around the Da Vinci Code, with the last being a celebratory look at the identity, importance, and power of the real Christ from Colossians 1. We have the eyes and ears of a world that yearns for something real, and Dan Brown gnostic fraud makes the Christ of the Bible that much more appealing. Keep up the good work. - Pastor Ron Heffield

Interesting article...apparently Dan Brown will go to any length for publicity and the almighty dollar. I wouldn't want to be in his shoes on Judgement Day! - M.S.E.

I do not agree with any of your messages full of hate and not the accepting love of Jesus Christ. - Robert Schneider

It seems there is something fetching about something mysterious, more to the story than what appears on the surface, and certainly Jesus was enticing us with His talk of the Empire of God. Unfortunately, people will believe what they wish. I had studied esoterics deeply years ago, and so was familiar with the claims made in the Da Vinci Code...a very few were accurate, but most were off the wall. Even so, I've noticed that many of the 'experts' the media have interviewed are either not doing the best job of presenting facts, or they are being edited to look like they are out of their league. Important allegations should be addressed and put to rest; i.e., the head the Templars worshipped more than possibly being the Mandylion (or the folded Shroud) rather than something Satanic, and the total lack of evidence of anything akin to goddess-worship going on with any orthodox Christians at any time in history; I think the closest anyone will ever get to that one is 'El Shaddai' also meaning 'the many-breasted one', as was Aphrodite, in some depictions. On the other hand, the evidence for Jesus being married should be argued sanely, according to Jewish customs of the day and what would have been most points in the Scriptures, and without the ongoing Christian ignorance and bias. Why do Christians insist on a celibate Christ as if He were a Gnostic disdaining the flesh He so delighted in creating? And were He to have had children, how wonderful...children created in the total love of their Creator Father. Personally, as as a life-long Christian, I fail to understand why the perfect Man without sin could not also be a perfect husband and father. Regardless, I believe so long as we perpetrate a Christ that is too far above us mere mortals to be a whole man Who could live life fully within family life (assumedly until his children are grown), women will feel distanced from His message regardless of His radical approach to them, men will maintain an excuse to see themselves as superiors to women rather than as their equals, children will remain less important as individuals, and the Church will fail to become the Empire of Heaven which has been at hand since His birth. So long as that persists, outsiders who are attracted to Christ, but who can't stand the touting of Christians in general, will keep seeking Him in unlikely places like The Da Vinci Code. - Sylvia Genders

The real problem as I see it is that each so called expert on the field of Christianity attempts to have us believe in what he/she proclaims is the truth. Each expert then in turn, has an opinion that is in disagreement with the last expert... The layman who reads/-listens to these experts then believe in nothing. Most people, me included would love to know the truth about Christ and his life. I however have come to the conclusion, my opinion is just as valid as theirs. Respectfully. - John L Chickness Sr

Send your letter to the editor to feedback@tothesource.org.

About “tothesource.org”

We live complex lives. We strive to sort out priorities that sometimes conflict or seem incompatible. A moral framework is needed to help us understand the reality around us. Our Judeo-Christian heritage provides a framework to help us comprehend the choices we make and the conflicts that arise over them. It is not only the main source of our spiritual values, but also many of the secular values we depend on.

tothesource is a forum for integrating thinking and action within a moral framework that takes into account our contemporary situation. We will report the insights of cultural experts to the specific issues we face believing these sources will embolden people to greater faith and action.
Gerald Schroeder

BSc, MSc, and PhD all earned at the Massachusetts Institute of Technology, PhD in two fields: Earth and Planetary Sciences; and, Nuclear Physics. Formal theological training includes fifteen years of study under the late Rabbi Herman Pollack, Rabbi Chaim Brovender and Rabbi Noah Weinberg.

Seven years on the staff of the M.I.T. Physics Department prior to moving to Israel and joining the staff of the Weizmann Institute of Science and then the Volcani Research Institute and the Hebrew University Isotope Separation Mass Spectrometer facility. Currently teaches at the Aish HaTorah College of Jewish studies in Jerusalem.

Author of GENESIS AND THE BIG BANG: THE SCIENCE OF GOD and THE HIDDEN FACE OF GOD. In the first full year of its publication, The Science Of God was on the Barnes & Noble list of non-fiction best sellers and was Amazon.com’s best selling book in the field of physics/cosmology for that entire year. Dr. Schroeder has approximately 60 publications in peer-reviewed scientific journals. He lives in Jerusalem with his wife and 5 children.