

**Creation of the Universe in Cosmology and Genesis:
Distant Cousins or Twin Notions?**

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In this essay I will discuss the relationship between current scientific understanding of the creation and its explication as related in The Book of Genesis. This is a timely topic in light of the 70 year-old continuing debate on the evolution question we're all familiar with from recent news reports. I'm referring to the recent ruling by the Kansas School Board that it is not mandatory to teach evolution in their schools.

Last Saturday, our Rabbi performed a wonderful act during the morning services for Simchat Torah, which I for one have never experienced before. He allowed the Torah to be unfurled about the Sanctuary so that all present could observe it in a "gestalt" way. We all marveled at its length and its beauty. Finally, the Rabbi read a portion from the very end and then from the very beginning. The left-hemisphere of my brain, the logical and analytical one, felt particularly stimulated by the pattern of the Hebrew letters and spaces observed upon the scroll unfurled around the room. The right hemisphere of my brain, the emotional, spatial, intuitive one, enjoyed the entire snapshot; while my whole brain, together with my heart and soul experienced something that I can only describe as profoundly spiritual. And then I had another thought: "this is anything but a fragile document contrary to what I had thought for many years – it is a strong, resilient and powerful one."

Even if it were fragile, the written Torah itself is only a part of this amazing story – there is the oral Torah – which is just as powerful. If the written Torah can be likened to one's body, then cannot the oral Torah be likened to one's soul? From Bereishit (Book of Genesis) we are taught that the Lord fashions and provides each of us our soul, thus imparting not only our immortality but the Torah's as well. Small wonder that so many people have given their livelihoods and some their very lives for this document over the

last 2000+ years. May we all ask ourselves why, and come up with a personally satisfying answer. I'll try to help –

There are approximately 305,000 letters, not including spaces, in the Torah. This may seem like alot, however it is not that many if you think in terms of modern computer memory storage. This can be easily stored on your PC's hard disk. But ponder for a moment the following scientific truth: all biologic diversity that we know of in the plant, animal and human communities is determined fundamentally by the DNA molecule which has only four “letters” that we currently know of – the 4 biochemical base units of the double helix! Is it a coincidence that the physical universe is 4 dimensional (the 3 space dimensions and time)? And is it coincidental that one of the holiest names of the Almighty is symbolized by the Tetragrammaton, the mystical 4 letter combination *yud, heh, vav, heh* (YHVH)? This gives us a hint about the Torah – which is that the virtual information content inherent in those 305,000 letters is somewhere near infinite! On the other hand, there are many documents with more letters than the Torah, encyclopedias come to mind, so what makes the Torah different?

Consider the following fact: among the three Torah versions in use world-wide (the Ashkenazi, Sephardi, and Yemenite) there are a total of 9 letter differences among them. That represents a 0.002 percent variation! This is odds of roughly 1 in 50,000. In most scientific experiments carried out today the acceptable standard odds for concluding that your scientific finding (whatever that happens to be) occurred by chance alone is at best only 1 in 100, and usually 1 in 20 will pass muster ($p < 0.05$)! To put this into some perspective, the Samaritan people (west bank of Jordan), and who some believe are one of the lost tribes of Israel, have their own version of the Torah which has 6,000 letter differences between it and our Torah. And the New Testament is known to have roughly 15,000 to 20,000 letter-level variations among all its books. So this is truly astonishing when you recall the dispersion of the Jewish people over the last 2,000+ years. Even more remarkable when you consider that just about any written story you can think of can

easily be re-written in a large number of different ways without disturbing its “surface” level interpretation.

These facts strongly suggest that there is much more to the Torah than just its literal interpretation. After all, why do we study the Torah from end to end in a yearly cycle year-after-year? I find it hard to accept that the reason is just to read the same stories over and over again. It must be because there are deeper meanings inherent in the Torah. Going back to the example of the encyclopedia: their texts don't have deeper meanings than the surface level, literal one. There are no hints, parables, metaphors or deep hidden meanings in an encyclopedia!

We are then inevitably led to question the apparent discrepancy between modern science's explanation of how the universe came to be and the seven days of creation as told in the Book of Genesis. To recap the scientific explanation of which many of us are familiar: the universe is said to have sprang forward out of “nothingness” some 13.5 billion years ago. It all began with an unimaginably tiny primordial “seed” about the size of an atom that contained all the known matter and (mostly) energy in the universe. Suddenly the atom exploded sending this matter and electromagnetic energy outward in all directions at nearly the speed of light. In the first second following the explosion, the universe is calculated to have expanded to 270,000 miles across. This outward expansion of matter and energy continues to this day as we can observe from our most powerful telescopes, its remnant is a detectable cosmic background radiation that permeates all of space and time in every direction (discovered by Arno Penzias and Robert Wilson in 1965).

The most obvious incongruity between the two creation views is therefore the timing of the events: 13.5 billion years at latest count since the Big Bang explosion vs. the 7 Days of Creation. If we wish to match them up somehow we must come up with a method to either shrink 13.5 billion years into 7 days or expand 7 days into 13.5 billion years! Either way it's a formidable “trick”. The later expansion formula was actually solved by a

Torah genius of the first order by the name of Rabbi Isaac of Acco over 700 years ago! Rabbi Isaac did not do this in a vacuum – he had significant help from our Great Sages one of whom was Nachmonides, the RamBan who lived in the 12th century and Nechunya Ben HaKannah who lived in the first century! Rabbi Isaac knew the entire Bible by heart and wrote a very secret manuscript called “The Treasury of Life.” For all intents and purposes, this manuscript was lost for centuries until it turned up sans its title page in the rare manuscript section of the Lenin State Library around the year 1917. And there it sat unnoticed by Moscow officials until the 1960s when it was located by Jewish sources and secreted out of the library in a way that would make James Bond proud!

The key to Rabbi Isaac’s calculation has two main parts: the first is a hint that comes from verse 4 of the 90th Psalm, penned by Moses. It declares “For a thousand years in Thy sight are but as yesterday” This implies that 1,000 man-years are equivalent to 1 G-d Day. The second part of the key is a Kabbalistic teaching which would require a few additional sermons to explain so I’ll just state it: there are seven cycles of creation, each cycle lasting for 7,000 years. We are currently in the 5,760th year of the seventh cycle which began with the creation of Adam. Prior to the present (7th) cycle, the years are considered “G-d years.” Thus: 6 cycles x 7,000 G-d-years = 42,000 G-d years, 1 G-d Day equals 1,000 man-years, therefore 1 G-d year is equal to 365,250 man years, and 42,000 G-d years equals 15,340,500,000 man-years.. WOW! Think of it - Science has only 2 billion years to catch up!

Bear in mind now that neither Rabbi Isaac nor the RamBan nor ben HaKannah could have “borrowed” any of these notions from the science of their time because they lived before all the giants of modern cosmology including Aristotle, Copernicus, Kepler, Galileo and Sir Isaac Newton, Einstein and the great present day cosmologist Stephen Hawking, who is confined to a wheelchair with Lou Gehrigs’ Disease. Some of you may recall that Galileo was exiled by the Church in the 17th century because of his support of the Copernican doctrine that the Sun and not the Earth resided at the center of the universe.

That may partially explain why so many of the teachings of our Great Sages had to of necessity be kept secret for so many hundreds of years.

Consider, if you will, the following query from the Babylonian Talmud:

- The Torah was given to Moses on Sinai, but was it not created before the creation of the world?

And this one:

- The Torah was created before the world, as it is written, “The Lord made me (Torah) as the beginning of His way.”

And finally this one:

- The Torah is the preexistent blueprint of creation.

These statements are actual examples of how the Rabbis read the Torah and uncover hidden meanings therein. These quotations suggest to me that prior to the creation of the universe, the Almighty may have already created the Torah with the Hebrew letters which are analogous to the atoms of our physical universe. These quotes also suggest that there are deeper, hidden levels of meaning in the Torah beyond the literal interpretation of a disparate collection of stories and commandments. We all know that it is not proper to judge a person by how they look or the clothes they wear. We must look beyond - into their heart, or walk a mile in their shoes. Cannot the same be said for the Torah – that we should not be content simply with the words scribed in Hebrew on lambskin? We must look beyond the clothing of the Torah, beyond the story level. How deep and how many interpretations are there in the Torah? Perhaps as many as 600,000 – the number of souls said to be present when Moses received the Torah on Mt. Sinai, maybe more.

Here we stand on the brink of a new millenium as the search for the meaning of our existence continues as it has for thousands of years, but now with even more renewed vigor and strength. In the name of large-scale science, we have set out on a path of discovery using powerful microscopes and computers, to uncover the entire human genome sequence, precisely to learn about our origin and evolution. This enormous task will actually be completed in 3 years hence. At the same time, and also in the name of “big” science we placed the most powerful telescopes ever conceived, the Hubble telescope and the Chandra X-ray observatory, far out into earth orbit in order to peer deeper and deeper into the universe and learn more of its secrets – where we come from and how it all began. Inevitably there will come a point where science will not have much more to say about these issues. I deeply suspect that the Torah will continue to have a great deal to say about them. Furthermore, there is no greater source than the Torah for the study of human behavior in all its forms. If you are someone like me who enjoys self-help books, the Bible contains the best psychotherapy “manuals” ever written. There has never been a better time in history for you and me to learn the deeper meanings of the Torah. You don’t even have to leave your home! If you have access to a PC there are programs for around \$50 that include the entire Hebrew text of the Torah, its English translation and commentaries.

Appendix: Calculation of the Age of the Universe by Rabbi Isaac of Acco

The key to Rabbi Isaac’s calculation has two main parts: the first is a hint that comes from verse 4 of the 90th Psalm, written by Moses. It declares “For a thousand years in Thy sight are but as yesterday ...” This implies that 1,000 man-years are equivalent to 1 G-d Day. The second part of the key is a teaching that there are seven cycles of creation, each cycle lasting for 7,000 years. We are currently in the 5,760th year of the seventh cycle which began with the creation of Adam. Prior to the present (7th) cycle, the years are considered “G-d years”. So: 6 cycles x 7,000 G-d-years = 42,000 G-d years, 1 G-d

Day equals 1,000 man-years, therefore 1 G-d year is equal to 365,200 man years, and 42,000 G-d years equals 15,340,500,000 man-years.

References:

1. "Cracking the Bible Code" – J. Satinover, M.D., Quill Publishing, 1997
2. "Path of the Kabbalah" – D. Sheinkin, M.D., Paragon House, 1986.

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