Scientists study the first galaxies in the universe in what some believe proves Creation

Isaiah 45:12 I have made the earth, and created man upon it: I, even my hands, have stretched out the heavens, and all their host have I commanded.

ADAM ELIYAHU BERKOWITZ



An international team of researchers has successfully studied the first galaxies formed in the universe a mere 200 million years after the Big Bang. While some theologians and Bible scholars are disturbed that scientific theories concerning the origins of the universe contradict the Creation story, a surprising number of physicists actually view their own studies as proof of the divine origins of reality.

An international team of astrophysicists, including Prof. Rennan Barkana from the Sackler School of Physics and Astronomy at Tel Aviv University, has, for the first time, statistically characterized the first galaxies in the Universe, which formed only 200 million years after the Big Bang is believed to have taken place.

"According to the results of their research, the earliest galaxies were relatively small and dim," the researchers explained in a statement. "They were fainter than present-day galaxies, and likely processed only 5% or less of their gas into stars. Furthermore, the first galaxies did not emit radio waves at an intensity that was much higher than that of modern galaxies."

The results of the study were published in the journal Nature Astronomy.

"This is a very new field and a first-of-its-kind study", explained Prof. Barkana. "We are trying to understand the epoch of the first stars in the Universe, known as the 'cosmic dawn', about 200 million years after the Big Bang. The James Webb Space Telescope, for example, can't really see these stars. It might only detect a few particularly bright galaxies from a somewhat later period. Our goal is to probe the entire population of the first stars".

The Big Bang event is a physical theory for the origins of the universe describing how the universe expanded from an initial state of high density and temperature. Detailed measurements of the expansion rate of the universe place the Big Bang singularity at an estimated 13.787 billion years ago, which scientists consider being the age of the universe.

"According to the standard picture, before stars began to fuse heavier elements inside their cores, our Universe was nothing but a cloud of hydrogen atoms from the Big Bang (other than some helium and a lot of dark matter). Today the Universe is also filled with hydrogen, but in the modern Universe, it is mostly ionized due to radiation from stars."

Prof. Barkana explained his conclusions:

"Modern galaxies, such as our own Milky Way, emit large amounts of radio waves. In our study, we placed an upper limit on the star formation rate in ancient galaxies and on their overall radio emission. And this is only the beginning. Every year the experiments become more reliable and precise, and consequently, we expect to find stronger upper limits, giving us even better constraints on the cosmic dawn. We hope that in the near future we will have not only limits but a precise, reliable measurement of the signal itself."

The Big Bang is not explicitly named in the story of Creation described in the Book of Genesis, but a surprising number of prominent physicists have cited the theory as proof of the divine origins of the universe. Many see research such as the recent study cited above as further proof of Creation. Dr. Gerald Schroeder, a scientist with over thirty years of experience in research and teaching, explained this succinctly.

"The Big Bang is the best proof of God since Moses came down from Sinai," Dr. Schroeder stated unequivocally. "The only thing that matches it is the creation of the modern state of Israel.

Dr. Schroeder bases this remarkable statement on a lifetime of experience in science and Bible study. He earned his Bachelor's, Master's, and Doctorate degrees all at the Massachusetts Institute of Technology. He is also a lecturer at the Aish Hatorah Yeshiva in Jerusalem. He was not involved the study.

Dr. Schroeder cited a surprising number of prominent scientists as precedents for his statements. One such scientist was Robert Jastrow, an American astronomer and planetary physicist who was one of the founders of NASA. Early in his career, Jastrow self-defined as agnostic, asserting that "the curtain drawn over the mystery of creation

will never be raised by human efforts, at least in the foreseeable future".

In the wake of observations made by Edwin Hubble that supported the Big Bang theory, Jastrow recanted. In an interview with *Christianity Today* in 1982, Jastrow said "Astronomers now find they have painted themselves into a corner because they have proven, by their own methods, that the world began abruptly in an act of creation to which you can trace the seeds of every star, every planet, every living thing in this cosmos and on the earth. And they have found that all this happened as a product of forces they cannot hope to discover. That there are what I or anyone would call supernatural forces at work is now, I think, a scientifically proven fact."

He was also <u>quoted</u> as saying, "Far from disproving the existence of God, astronomers may be finding more circumstantial evidence that God exists."

Dr. Schroeder personifies the physicist turned theologian. Raised in a rural area in a secular family, he was fascinated by nature and drawn to science. As a young physicist, he worked on developing systems to remotely detect nuclear tests by foreign powers. In the early 1960s, he witnessed a test of a nuclear device that, ironically, took place on the holiday of Rosh Hashanna. Soon after that experience, he began studying Jewish philosophy and became gradually more religiously observant.

"My belief in Torah began as a result of witnessing a nuclear explosion," Dr. Schroeder said. "For me, it proved there is a God."

Dr.Schroeder's reaction stands in stark contrast to that of Robert Oppenheimer, one of the developers of the first atomic bomb, who, when confronted by the sight of his creation, quoted the Hindu Bhagavad Gita, saying, "Now I am become Death, the destroyer of worlds."

Dr. Schroeder cited Werner Heisenberg, a German theoretical physicist and one of the main pioneers of the theory of quantum

mechanics who lived at the beginning of the 20th century, who wrote, "The first gulp from the glass of natural sciences will turn you into an atheist, but at the bottom of the glass God is waiting for you."

"Secular scientists theorize about the origins of the universe as something from nothing and believe that is what the Bible is trying and failing to describe," Der. Schroeder explained to Israel365 News. "The Big Bang theory is describing the scientific process of something from nothing....physical. The Bible is describing that all creation came from nothing physical. But it did come from something spiritual; God."

Dr. Schroeder explained that Albert Einstein initially theorized that the universe was dynamic and unstable, caught in an infinite cycle of expansion and contraction. He later recanted, calling his initial theory "the biggest blunder of my professional life." He later proved mathematically the beginning of the universe.

Dr. Schroeder noted that science has proven the creation of the universe, it has also disproven the theory that the Big Bang is part of an eternal cycle of expansion and contraction.

"Though science has proven the creation of the universe, we have observed that the universe is expanding at an accelerating rate, perhaps forever," Dr. Schroeder said. "It seems unlikely that an end of the universe is what the Bible describes as Moshiach (Messiah). This is a good thing since, with the way human events are unfolding, I hope it comes sooner than that."

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