

# The Big Bang Theory

## Big Bang Theory - The Premise

The Big Bang theory is an effort to explain what happened at the very beginning of our universe. Discoveries in astronomy and physics have shown beyond a reasonable doubt that our universe did in fact have a beginning. Prior to that moment there was nothing; during and after that moment there was something: our universe. The big bang theory is an effort to explain what happened during and after that moment.

According to the standard theory, our universe sprang into existence as "singularity" around 13.7 billion years ago. What is a "singularity" and where does it come from? Well, to be honest, we don't know for sure. Singularities are zones which defy our current understanding of physics. They are thought to exist at the core of "black holes." Black holes are areas of intense gravitational pressure. The pressure is thought to be so intense that finite matter is actually squished into infinite density (a mathematical concept which truly boggles the mind). These zones of infinite density are called "singularities." Our universe is thought to have begun as an infinitesimally small, infinitely hot, infinitely dense, something - a singularity. Where did it come from? We don't know. Why did it appear? We don't know.

After the singularity's initial appearance, it apparently inflated (the "Big Bang"), expanded and cooled, going from very, very small and very, very hot, to the size and temperature of our current universe. It continues to expand and cool to this day and we are inside of it: incredible creatures living on a unique planet, circling a beautiful star clustered together with several hundred billion other stars in a galaxy soaring through the cosmos, all of which is inside of an expanding universe that began as an infinitesimal singularity which appeared out of nowhere for reasons unknown. This is the Big Bang theory.

## Big Bang Theory - Common Misconceptions

There are many misconceptions surrounding the Big Bang theory. For example, we tend to imagine a giant explosion. Experts however say that there was no explosion; there was (and continues to be) an expansion. Rather than imagining a balloon popping and releasing its contents, imagine a balloon expanding: an infinitesimally small balloon expanding to the size of our current universe.

Another misconception is that we tend to image the singularity as a little fireball appearing somewhere in space. According to the many experts however, space didn't exist prior to the Big Bang. Back in the late '60s and early '70s, when men first walked upon the moon, "three British astrophysicists, Steven Hawking, George Ellis, and Roger Penrose turned their attention to the Theory of Relativity and its implications regarding our notions of time. In 1968 and 1970, they published papers in which they extended Einstein's Theory of General Relativity to include measurements of time and space.<sup>1,2</sup> According to their calculations, time and space had a finite beginning that corresponded to the origin of matter and energy."<sup>3</sup> The singularity didn't appear *in* space; rather, space began inside of the singularity. Prior to the singularity, *nothing* existed, not space, time, matter, or energy - nothing. So where and in what did the singularity appear if not in space? We don't know. We don't know where it came from, why it's here, or even where it is. All we really know is that we are inside of it and at one time it didn't exist and neither did we.

## Big Bang Theory - The Only Plausible Theory?

No, it's just the most popular one. In 2003, Physicist Robert Gentry proposed an attractive alternative to the standard theory.<sup>5</sup> Dr. Gentry claims that the standard Big Bang model is founded upon a faulty paradigm (the Friedmann-lemaitre expanding-spacetime paradigm) which he claims is inconsistent with the empirical data. He chooses instead to base his model on Einstein's static-spacetime paradigm which he claims is the "genuine cosmic Rosetta." Gentry has published several papers outlining what he considers to be serious flaws in the standard Big Bang model.<sup>6</sup> Other high-profile dissenters include Nobel laureate Dr. Hannes Alfvén, Professor Geoffrey Burbidge, Dr. Halton Arp, and the renowned British astronomer Sir Fred Hoyle, who is accredited with first coining the term "the Big Bang" during a BBC radio broadcast in 1950.

### Footnotes:

1. Steven W. Hawking, George F.R. Ellis, "The Cosmic Black-Body Radiation and the Existence of Singularities in our Universe," *Astrophysical Journal*, 152, (1968) pp. 25-36.
2. Steven W. Hawking, Roger Penrose, "The Singularities of Gravitational Collapse and Cosmology," *Proceedings of the Royal Society of London*, series A, 314 (1970) pp. 529-548.
3. Mark Eastman, Chuck Missler, *The Creator: Beyond Time and Space*, (1996) p. 11.
4. W. Wayt Gibbs, "Profile: George F. R. Ellis," *Scientific American*, October 1995, Vol. 273, No.4, p. 55.
5. See <http://www.halos.com/reports/ext-2003-022.pdf>

6. See <http://www.halos.com/reports/arxiv-1998-rosetta.pdf> and <http://www.halos.com/reports/ext-2003-021.pdf>; see also <http://www.halos.com/reports/arxiv-1998-redshift.pdf> and <http://www.halos.com/reports/arxiv-1998-affirmed.pdf>
7. <http://www.big-bang-theory.com>