

The Big Bang Timeline Notes

<http://www.pbs.org/deepspace/timeline/>

Just before the big bang	All matter in the future universe was packed into a tiny space called a <i>singularity</i>
Instant of the big bang	All time, space, matter and energy come bursting out of the singularity, rapidly expanding and forming the early universe
The first three minutes	Sub-atomic particles (parts of atoms) begin to form due to gravity (which pulls them together), there is still no light
300,000 years after the big bang 300 thousand years after the big bang	Hydrogen and Helium atoms begin to form! There is light. Matter exists.
300,000,000 years after the big bang 300 million years after the big bang	The first stars and galaxies form as gravity pulls matter together. They form round shapes because of gravity.
9,000,000,000 years after the big bang 9 billion years after the big bang	Our sun forms and the gravitational attraction caused by the incredible mass of the sun traps planets in orbit around it, creating the solar system.
11,200,000,000 years after the big bang (3.8 billion years ago)	The earliest life forms appear on Earth
65,000,000,000 years ago 65 million years ago	The dinosaurs go extinct
600,000 years ago 600 thousand years ago	Humans appear
4,500,000,000 years in the future 4.5 billion years in the future	The sun uses up its energy and expands into a Red Giant destroying the solar system (it grows bigger and burns up everything in its path, before dying out)
100,000,000,000,000 in the future 100 trillion years in the future	The last stars in the universe use up their energy and die
The very far off future	The universe as we know it is a cold, motionless, lifeless space. It is no longer expanding outward.

Throughout all of this time the universe is expanding outward from the momentum of the initial big bang.

