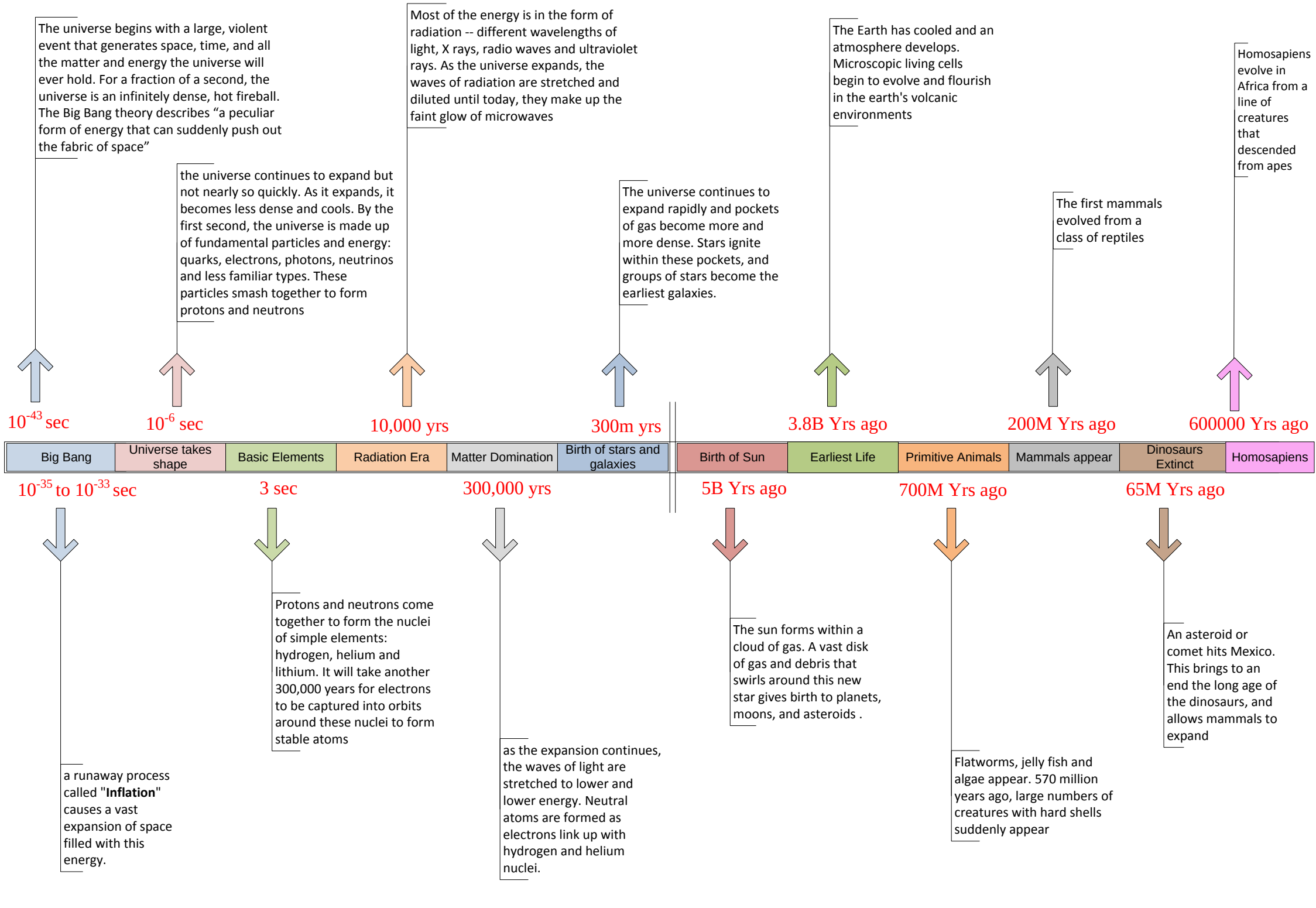
The universe begins with a large, violent event that generates space, time, and all the matter and energy the universe will ever hold. For a fraction of a second, the universe is an infinitely dense, hot fireball. The Big Bang theory describes “a peculiar form of energy that can suddenly push out the fabric of space”
the universe continues to expand but not nearly so quickly. As it expands, it becomes less dense and cools. By the first second, the universe is made up of fundamental particles and energy: quarks, electrons, photons, neutrinos and less familiar types. These particles smash together to form protons and neutrons
Most of the energy is in the form of radiation -- different wavelengths of light, X rays, radio waves and ultraviolet rays. As the universe expands, the waves of radiation are stretched and diluted until today, they make up the faint glow of microwaves
The universe continues to expand rapidly and pockets of gas become more and more dense. Stars ignite within these pockets, and groups of stars become the earliest galaxies.
The Earth has cooled and an atmosphere develops. Microscopic living cells begin to evolve and flourish in the earth's volcanic environments
The first mammals evolved from a class of reptiles
Homosapiens evolve in Africa from a line of creatures that descended from apes
10-43 sec
10-6 sec
10,000 yrs
300m yrs
3.8B Yrs ago
200M Yrs ago
600000 Yrs ago
Big Bang
Universe takes shape
Basic Elements
Radiation Era
Matter Domination
Birth of stars and galaxies
Birth of Sun
Earliest Life
Primitive Animals
Mammals appear
Dinosaurs Extinct
Homosapiens
10-35 to 10-33 sec
3 sec
300,000 yrs
5B Yrs ago
700M Yrs ago
65M Yrs ago
a runaway process called "Inflation" causes a vast expansion of space filled with this energy.
Protons and neutrons come together to form the nuclei of simple elements: hydrogen, helium and lithium. It will take another 300,000 years for electrons to be captured into orbits around these nuclei to form stable atoms
as the expansion continues, the waves of light are stretched to lower and lower energy. Neutral atoms are formed as electrons link up with hydrogen and helium nuclei.
The sun forms within a cloud of gas. A vast disk of gas and debris that swirls around this new star gives birth to planets, moons, and asteroids .
Flatworms, jelly fish and algae appear. 570 million years ago, large numbers of creatures with hard shells suddenly appear
An asteroid or comet hits Mexico. This brings to an end the long age of the dinosaurs, and allows mammals to expand