

Recent cosmology

The Big Bang

The big bang theory is the standard model to explain the origin of the universe, despite the fact that it has a number of serious criticisms, such as denying known data.

One example of a contradiction is that it requires the temperature of the universe to be random, having hot patches and colder patches. However, observations show that the temperature of the universe is pretty equal everywhere instead of variable.

Inflation

Inflation is a theory designed to explain this stability of temperature. It states that immediately after the big bang there was a sudden expansion of the universe creating a stable temperature. However, there is no explanation as to what caused this expansion or where the energy for it came from. Despite problems with it, inflation has become the accepted explanation in the standard cosmological model.

Dark matter

Observation of the movement of stars in the outer limits of galaxies defied Newtonian laws of gravitation. They moved as fast as the stars in the inner portions instead of slower.

Dark matter is a theory to explain this motion. It increases the gravitational energy in the galaxy to explain this. The problem is that this matter must behave unlike any other known particle, having no light nor reflecting any light. Very expensive attempts to find such matter have failed.

Dark energy

Recent observations have revealed that the universe is not only still expanding but is still accelerating. The big bang theory requires the universe to gradually slow down to a stop. Therefore, a new theory was required to explain this acceleration.

The most accepted theory to explain this acceleration is 'Dark Energy'. This is a hypothetical form of energy permeating space, which increases the rate of expansion of the universe. It is proposed that dark energy accounts for 73% of the total mass-energy of the universe.

Dark flow

Observations of background microwave radiation in the universe showed anomalies. The motion of galaxy clusters with respect to the cosmic microwave background should be randomly distributed in all directions. Instead measurements show a cohesive flow of clusters toward a part of the cosmos between Centaurus and Vela. Dark flow theory states that this is caused by the invisible effect of a different universe or a different fabric of space-time.