

Available online at www.elixirpublishers.com (Elixir International Journal)

# **Space Science**

Elixir Space Sci. 71 (2014) 24584-24585



# Anti-Universe exists

Arya Tanmay Gupta

Department of Computer Science, Ramanujan College (University of Delhi), New Delhi, India.

# ARTICLE INFO

# Article history:

Received: 16 April 2014; Received in revised form:

20 May 2014;

Accepted: 30 May 2014;

#### Keywords

Universe, Expansion, Anti, Matter.

#### **ABSTRACT**

Universe is continuously expanding, and is observed to expand at a continuous increasing speed, much greater than that of light, though the theory of relativity destroys the relevance of this statement. This gave birth to a theory called Big Bang theory, which says universe was born from a single point, started from pure energy and then came matter, space, and time. Within a short time, it is said to have "fight" with anti-matter and a small part of total matter constructed this whole universe.

© 2014 Elixir All rights reserved

#### Introduction

About 14 billion years ago "something" happened. We do not know what happened, why it happened. But we know that an enormous amount of energy erupted out of precisely "nothing". That energy expanded all around and slowly it cooled down and converted into matter, off course according to Einstein's equation

 $E = m c^2$  (1)

Where, E is the energy

m is the mass of matter created

c is the speed of light (299792458 m/s in vacuum) [6]

### Observations till now

MichioKaku says, "Big bang is the origin of space and the origin of time itself. This is the holy grail of physics. We want to know why it banged, we want to know what banged, we want to know what existed before the bang." [1]

According to Stephen Hawking, "If we find the answer to that, it would be the ultimate triumph of human reason. We would know the mind of GOD." [1]

In 1929, an astronomer Edwin Hubble discovered that galaxies are not static in one place. Not only are they moving, but they are flying away from earth at incredible speeds. [1]

Professor Lawrence Krauss says, "Those who were twice as far away were moving twice as fast, and those who were three times as far away were moving three times as fast." [1]

Hubble saw that the universe was expanding. Theoretically, an expanding universe must have started from a single point. Hubble demonstrated this. And, by measuring how fast the universe is expanding, astronomers calculated backwards and worked out when it burst into life. They found that the universe was born 13.7 billion years ago. [1]

MichioKaku says, "The big bang took place everywhere. This is because the universe itself was extremely small at that time." [1]

After big bang, space expanded faster than the speed of light. Same can be observed now too. And as the universe expanded, it cooled and the energy started converting into matter. That first matter was nothing like we see today. Matter and energy were being converted into each other when the

universe was infant enough. The first element formed was Hydrogen, then formed Helium and then traces of Lithium.[1]

It is believed that when our universe was small, matter encountered its biggest enemy, anti-matter. For every billion particles of anti-matter, there were billion and one particles of matter. That matter created all the universe which we see today.

Professor Lawrence Krauss says, "In a period of 3 minutes, the universe went from the big bang, all the way to forming the light elements. The universe went from the creation of universe to the creation of matter. We went from the universe that was infinitely small to a universe that was light years in size. In the first three minutes, essentially everything interesting that was going to happen in the universe, happened." [1]

380,000 years after the big bang, the universe became transparent and the elements began to form. Before that, it was a milky soup of loose electrons. When the universe was cool enough, the electrons combined with other subatomic particles like protons and the universe became transparent. The first light escaped at that time only. And we can map the radiations which escaped 380,000 years after the big bang. In 2001, NASA launched WMAP to map the picture of the universe, which gave us the most detailed picture of the early universe, when it was 380,000 years old. [1]

It is observed that, the big bang continues now also. The universe is expanding, and increasing its speed of expansion continuously, off course faster than that of light itself. MichioKaku says, "We now believe that there is something called Dark Energy, the energy of nothing that is pushing galaxies apart and is killing the universe." The universe will either continue to expand and die in ice or it will collapse again to give birth to a new big bang. [1]

## **Conclusions**

1. If we go directly to big-bang, we see that all the energy was creating space and was expanding at a greater speed than that of light. It is also possible that this is continuously happening now also but we cannot observe it because we may be moving away from it (the center of that great repulsion) at a greater speed than that of light. And energy was flowing at this incredible speed because there was absolutely nothing to stop all that, not even

Tele

E-mail addresses: arya.tanmay.gupta@gmail.com

- 2. Dark Matter. [3] All the matter came from the big bang, so there is no possibility of anything hindering the expanding energy.
- 3. If we consider the Big Bang theory to be true, we can imagine the universe just before the Big Bang as a light ray (a single photon) of more or less infinite frequency, supporting the equation,

Energy  $\alpha$  frequency (for a light ray) (2)

Or we can calculate the exact frequency of that energy quantum if we are able to calculate the mass of the universe plus the energy, which will surely not be observed in the calculation of mass of the universe.

And 13.7 billion years ago, all that, whatever it was, underwent a great repulsion which is perhaps still repulsing out.

4. Supporting the law of conservation of momentum, we find that if the primitive universe broke into two particles, one was matter and one was anti-matter, it may be possible that – that anti particle (the primitive anti-universe) would move away from the particle (the primitive matter universe) with the greatest speed possible and it burst out separately just like particle (our universe), and there was no fight between the matter and the anti-matter.

5. We see that the flow of time reduces in and environment of greater gravity or if the object is moving with greater velocity. [2] [3]

Time and space were born after the big bang. We can differentiate between the objects and the events (or incidents or happenings) only because of space and time difference.

Time difference and flow can simply be only defined by the velocity of moving object in empty space or the sequence of incidents in the universe on small or large scale. So, flow of time is never possible without empty space and matter having mass (and off course, occupying space).

Flow of time is different for all the points in the universe, or we can say, the space. It depends on the mass around it, and the velocity of that point.

Flow of time reduces as the velocity of a point / body increases. We can feel and calculate this because at a greater speed, we are faster than our surroundings. If we are fast, time flows slowly and vice versa, that is, if the time flows slowly, the matter is considered to be fast.

If we combine this with the following equation,

 $m_r = m_0 / sqrt(1 - v2/c2)$  (3)

where,  $m_r$  is the relativistic mass,  $m_0$  is the mass of the matter at zero velocity, v is the velocity of the matter, and c is the speed of light (299792458 m/s – or more precisely  $3x10^8$  m/s), [5] [6] we will get a conclusion that the more the mass of an object is, the slower will the time flow with and around it.

#### References

[1] Voluspa / Asatru, *Birth of the Universe*. *Big Bang*, youtube video. Available at

http://www.youtube.com/watch?v=ifFUbX5bFHM

- [2] Edwin Cartlidge, *Gravity's effect on time confirmed*, phsicsworld.com. Available at http://physicsworld.com/cws/article/news/2010/feb/17/gravitys-effect-on-time-confirmed
- [3] Arya Tanmay Gupta, Dark Matter Particles, International Journal of Advancements in Research & Technology. 2 (2013), pp. 235 241. Available at http://www.ijoart.org/docs/Darkmatter-particles.pdf
- [4] Raj Kumar, G. L. Mittal, Rama Gupta and Tarun Mittal, *Nootan Physics*, NageenPrakashan Pvt. Ltd., India, 2011
- [5] *Does mass change with velocity?*, Available at http://www.weburbia.com/physics/mass.html
- [6] Speed of light in gravity: Effect of gravity on measured speed of light, Speed of light, Available at http://www.speed-light.info/