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Theory of Photon Quanta

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Abstract- The purpose of this project is to create a new line of thinking among we scientists and change the way which we understand things, therefore developing new theories in physics and science in a whole which will be able to answer to disturbing questions which the universe poses.

The research problem that motivates this project is actually the complexity of our universe and the numerous phenomena which unfortunately we scientists can't still explain given the improvement in technology like the black hole, gravitational lensing of light and questions like why is the speed of light what it is (300,000km/s)? Which factors aid in making it constant?

Keywords: charge carriers; electromagnetic radiation; electromagnetic spectrum; electrostatic force; gravitational force; matter; space-time curvature; quantum.

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Theory of Photon Quanta

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In this project, we employ the use of practical evidence, real life situations and phenomena, theoretical formulations, theories and principles which form the bedrock of physics. Documents such as; 'The evolution of Physics: From Early concepts to Relativity and Quanta' , 'The world as I see it' both by Albert Einstein, 'Advanced level Physics' by Nelkon & Parker, 'New school Physics' by Anyakoha W.

I therefore came up with the theory of photon quanta and my principle of light. I concluded that light isn't just what we think it is but there's more to light. There are charge carriers in light which are responsible for the numerous phenomena we fail to comprehend.

I believe this new theory help we scientists in providing answers/explanations to phenomena around us and will take us a step further in understanding fully our universe and the mysterious black hole; at least we're succeeding gathering the last pieces of the puzzle to fully understand light, matter and the whole universe.

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I. Introduction

Light is of course one of or maybe the most important phenomenon in our universe till date and still keeps us puzzling. It is said to be an electromagnetic wave consisting of a stream of photons and these photons are prescribed by science as just bundles of energy. Although, this definition/perspective by which we see light can't just seem to provide adequate explanations to situations and phenomena in space and our universe in a whole like dark energy, black hole and even gravitational lensing. Gravitational lensing is the distribution of matter around a body with ggravitational force but I'm sure that we scientists didn't expect it for light to because we think light is not matter or like a few scientists say, there is no matter in light. If it's true, why does light distort space-time? Why is light said to be electromagneric meanwhile it is neither electric nor magnetic? If we say a beam of light is simply a beam of photons which we say are packets of energy, then why do we go on to say that light consists of electromagnetic field? Where does the electromagnetic field come from? If light is truly affected by gravity as Prof. Einstein predicts, then why don't photons fall down? In fact, there are a lot of questions about light and it is obvious that our present view of light can't answer and that's what I've come up to address. We need to look around us and all the puzzling events which occur and wonder critically at the complexity of our universe. We need to look back at the foundations of science, see if they can stand up to the events which we puzzle about and our problems and if not modify them, crate new bedrocks on which modern science would rely on for answers; that's the exact reason we are scientists.

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II. Materials and Methods

First Experiment (Light Bulb Experiment): Materials used:

2 large yam tubers, 2 Volt light bulbs, copper wires, tapes, knife, 2 pieces cut from galvanized zinc.

Method used: (1.) First 2 cuts were made on each yam tuber (2.) Then a copper wire and a piece of zinc were inserted in the two openings of each tuber (3.) The tape was used to connect the first copper wire to the light bulb (4.) And then another wire was connected to the zinc in the other yam tuber from the other end of the light bulb (5.) Then, a copper wire was used to connect the other zinc piece with the last copper wire. (Note, a thick copper wire is saved for the last connection (number 5). Watch what happens…

Second Experiment (Match Experiment): Materials used: A match box containing match sticks.

Method: A match stick is removed from the matchbox and is used to strike the rough part of the matchbox multiple times but softly. Watch what happens…

Then, that same matchstick is used to strike the matchbox multiple times but this time, harder. Watch what happens…

Third Experiment (Torchlight Experiment): Materials used:

Torch light, a ladder of about 1.5m, a building with ceiling 2m from ground level.

Method: I climb the ladder of 1.5m with the torchlight to get closer to the ceiling and then switch the torch light on and point it at the ceiling. What happens…?

I come down from the ladder and point the same torchlight at the same ceiling. What happens…?

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Then I go outside of the building in the evening time all alone in empty space and point the same torchlight but this time in the sky. What happens…?

There are many experiments, basically real life everyday experiments but I'd just like to use these three only out of the numerous lists to portray my point.

III. Results

Now in the first experiment, the result was light. The light bulb lighted.

And in the first case of the second experiment, nothing happened but in the second case, there was fire.

In the third experiment, when I was on the ladder, the intensity of the torchlight was high and I could see it very well. When I came down, the intensity became low and it wasn't really clear but the most fantastic thing happened when I went outside and pointed it at the sky trying to get it to the bodies in space like stars, it completely disappeared.

IV. Discussion

Now, we all know the famous light bulb experiment first experimented by our dear famous Thomas Edison, that's the same principle applied in the first principle, just that the yam tubers acted as the source of electrons that is the battery. But the honest question is why was there light in the light bulb? And the most honest answer is due to the presence of electrons. This implies that light is simply an expression/manifestation of the presence of charges, in this case electrons. What happens if I increase the size of the yam tubers? Higher intensity of light in the bulb Why? More charges.

Now, in the second experiment, one of the simplest in the world actually but it doesn't mean we can still answer to all the phenomena it has to offer. As I stroked the match softly, no light. But when I increase force and strike it harder, there come fire. Let me remind that: Fire=visible light + infrared (heat). Now, how does this fire come about? When I started striking it harder, I started generating more friction than ever-charges are produced. There is a spontaneous transfer of electrons from the rough matchbox to the matchstick, and then light comes in the form of fire. Let me remind of the principle of conservation of charges that charges can neither be created nor destroyed and the net charge in the universe is zero but we never ask what keeps the net charge in the universe at zero? What is that that is responsible for balancing the charges in our universe? Light. In this match scenario, electrons were produced. Allow me to remind that in science a universe could be said to be a chemical system under investigation. In this match universe, what balances the negative charge of the electrons? It has to be light.

$Q=Q_0+Q_{\text{transferred in}} - Q_{\text{transferred away}}$ where Q is the net charge in a body at time t_1 , Q_0 is the initial quantity of charges in that body.

Then in the third experiment, when I was closer to the ceiling more intensity- higher photon flux- high concentration of charges. Then, I step down from ladder, lesser photon flux, lesser concentration of charges, and lesser intensity. Then I point in sky and I don't see my beam of light anymore. Why? Because if light is just composed of packets of energy (photons), it's not meant to be affected, I'm still meant to see my light up there. The point I'm trying to make is that the continuity of charges in matter is evident in light. Imagine a group of five hefty man with energy trying to push a cargo and they are succeeding pushing it little by little but then you add a truck on top of the cargo, what happens? They can push it farther no more. This explains this torchlight experiment.

We are scientists. We are supposed to make new ways of explaining our universe and not destroy it or shun it simply because there's no existing principle to explain it. If I shine a powerful beam of light at a sheet of paper and it tears through, then there must be something in light that exert this force on the paper; packets of energy can't just exert force, No. By the way, packets of energy can't just distort space-time, they can't. We physicists say that the outward force of the light escaping the core of a star, working with thermal pressure acts to balance the inward gravitational forces on the outer layers. But if light consists of only photons which we assume to be just packets of energy, then where does the electric and magnetic fields which light propagates come from? What does the work in light that releases electromagnetic radiation? Charges builds up in the cloud and objects on the ground and then lightning hits a tree and it falls? What happens? Simply negative charges come to the bottom of the cloud and positive charges on the ground and then light with high charge concentration comes to balance the charges in the universe. Unfortunately for the tree which is on the ground, the light hits it and the charges in the light exert force on the tree and it falls. At least the lightning has done its job of balancing the charges in the cloud and in the ground. It's not its fault that the negative charge concentration(electric current) was so high when it was coming. Wow! Such a beautiful world.

Gravitatonal Lensing Explained:

As Prof. Einstein's prediction tells us, 'a body could distort space-time only by virtue of its matter'.

Also, as is known already, charges exert electrostatic force and electrostatic force is usually stronger than gravitational force. But, when light containing charges encounters a massive object, say a massive star with massive gravitational force, the electrostatic force cannot withstand the gravitational force and therefore, it distributes its matter around the star and curves around it. Although, in a small star with

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little gravitational force, it bends only a little, negligibly because the electrostatic force can stand the gravitational force in this case.

V. Conclusion

I therefore came up with the theory of photon quanta: that 'Photons are entities by which theirquanta are owed to the charges which they carry'. And my principle of light: Light is basically a stream of charge carriers called photons with these charges possessing energy and propagating electric and magnetic fields with energy in an oscillating fashion.

As our dear Prof. Einstein puts it that Physics isn't meant to be just a vocation, its more than that, it is an adventure. As scientists, we are supposed to uphold science like its an adventure while taking down all the questions in our universe in a whole. Someone once said that 'scientists are on a world mission impossible to understand the full nature of matter and the universe' and that person is me!

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2. `M. W. Anyakoha. *New School Physics.* Nigeria: Africana First Publishers PLC, 2013, pp.72-78; 56-63; 67-69; 180-183; 108-110; 479-485; 488-490.
3. "One thing I have learned in a long life: That all our science, measured against reality, is primitive and childlike-and yet it is the most precious thing we have: ("Albert Einstein: Creator and Rebel," 1972)
4. "Without the sense of kinship with men of like mind, without the occupation with the objective world, the eternally unattainable in the field of art and scientific endeavors, life would have seemed empty to me" ("The world as I see it", 1930)
5. "The most beautiful experience we have is the mysterious. It is the fundamental emotion that stands at the cradle of true art and science whoever does not know it and can no longer wonder, no longer marvel, is as good as dead, and his eyes are dimmed." ("The world as I see it", 1930)

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