

I have tried to picture the beginning.

At first there was only an endless void with no bounds. There were no coordinates in this void, no time.

Then the void started to quiver. The quivers were in every direction but there were no coordinates for direction or distance. The quivers were quivers in time. Time was the first dimension.

The quivers grew until they were parcels of space moving in the void. They moved in every direction. They did not interact but moved freely through each other. We will call them gravitons. They would have no mass, no charge. At this stage there would be three dimensions of space and one of time. The velocity of the gravitons would be  $C^2$ .

From the velocity of the gravitons at some locations electric charges would be formed. They would be taken up and carried by the gravitons. The charges have weight, or mass. A graviton carrying a charge is a photon. The weight of the charge slows the velocity of the gravitons from  $C^2$  to that of a photon,  $V = C$ . The weight of the charge carried is always the same, defining a single velocity for photons. The length of the graviton carrying the charge varies, defining the wavelength and frequency of the photon. The energy of a photon varies as the wavelength and the frequency, or as the frequency that a discharge can be released by a photon. At that stage there would be four dimensions, three of space and one of time. The dimensions of space and of time would be different from those with the gravitons because the velocity and therefore the time would be different for photons.

Because of the presence of mass in the photons and because of the amalgamations of mass the universe would become a universe prominent in matter. I would call this era of Newton. There would be three dimensions of space, one of time. It is the era of today's astronomy and physics.

There would be a group of new dimensions to be added, String Theory. Their number and dimensions are not yet finalized. What is wrong with this? Nothing is proven, it is all just imagination. I admit that the dimensions of time and space are mathematical contrivances and their relationship to reality is merely a mental attitude.

But 'nothing' at the beginning seems a worthy thought. The human race has ever found some excuse for having something at the beginning. I found nothing is more reasonable. It is better than a pile of turtles. 'Nothing' fits in with limitless space with no boundaries.

Quivering describes a movement at the highest magnification we can achieve. I put that movement as a fundamental property of the universe. It is so small, so

irregular at the early moments of the universe I can see time involved but dimensions of space not yet defined. The organization of gravitons out of quivers I find acceptable. They do involve space and direction and time. At that era there are four dimensions.

The matter of the velocity of gravitons I approached from the point of view of the velocity of photons. A photon is carrying a charge and going at  $V = C$ ; what would it go at carrying no charge? I guess  $C^2$  partly because matter accelerated to  $V = C^2$  achieves its maximum momentum and its maximum energy. Einstein's formula for General Relativity is a vector formula, appropriate for gravitons and photons. Photons take  $16 \times 10^9$  light years of travel time to cross the universe, gravitons at  $V = C^2$  would do it in a shorter time, befitting a function of the entire universe. Of course, for us in the cabinet of the space ship the time would be shorter. Finally, the dimensions of the Newton era have been well worked over and the dimensions of String Theory have yet to come.

10 gravitons absorbed as gravity passing through earth by layers in two directions and the balance of absorbed gravitons is shown:

	A	B	C	D	E	F	G	H	I	J	K	
Gravitons entering ->	1	2	3	4	5	6	7	8	9	10	11	
	11	10	9	8	7	6	5	4	3	2	1	<- Gravitons Entering
Balance ->	10	8	6	4	2	0	2	4	6	8	10	
	<b>Balance of Gravity</b>											
Gravity Inwards ->	10	8	6	4	2	0	2	4	6	8	10	

The gravitons adsorbed are very few in comparison with the total gravitons entering. Therefore, essentially the same number of gravitons are absorbed in each layer. In space gravity is a universal strong force in perfect balance. Only when the balance is upset, as in earth, is its force revealed.

Consider a Black Hole of 3000 m. diameter. Divide it layers, like an onion, each 100 m. wide. This would make 30 layers across the Black Hole. If 45 % of entering gravitons is absorbed at each layer the remaining gravitons would be, by layer: **1=55%**, **2=30.25%**, **3=16.37%**, **4=9.15%**, **5=5.02%**, **6=2.76%**, **7=1.52%**, **8=0.84%**, **9=0.46%**, **10=0.25%** ... **20=0.0064%**, **30=0.0000016%**.

Using that adsorption rate: at the center of the Black Hole there would be a balance of 0.0012% of gravitons remaining: there would be no force of gravity and greatly reduced numbers of gravitons.

There are several places where gravitons can pick up charges and form photons. One place is the Big Bang where a locale of charges are taken up by gravitons to produce photons. Such photons do not have line spectra as would be produced by heated atoms. Combinations of quantum charges and gravitons may occur in gamma ray bursts and in regions of excessive magnetic charges in space.

When a photon is adsorbed, say on a metal surface, Einstein showed that quantum charges are released. If the charges in the photons are released where do the graviton part of the photons go? It would go into the surrounding sea of gravitons and be lost. I would suggest that the output of an electric generating station be monitored, with the windows of the station opened for direct sunlight to fall on the generator, and in the dark. If a difference were found it would confirm Einstein's observation and may even lead to a slightly higher production of electricity by the industry.

A sensor placed around the target area of a linear accelerator may show disturbance of gravity at specific angles.

What about the nature of the substance inside a Black Hole? We have already shown that the force of gravitons is mainly expended near the surface of the Hole. At the center there is a pressure from the surface but almost no pressure from local gravitons. The substance in the Hole would be compressed, the protons and electrons and particulate matter deformed and amalgamated. One would pose that the particles would lose their cohesion and the whole center of the Black Hole would become liquid. Some of the contents would be squeezed out at polls of a spinning Black Hole to formed jets. The jets would contain concentrated matter which would adsorb gravitons. The result would be compression of the jets to hold them straight.

An object in space reduces the number, or force, of gravitons passing through it. This could be considered a percentage. Earth reduces the force of gravity from  $5 \times 10^9$  to 10. When viewed from space earth has an angular size reduced by  $1/\text{distance}$  it is a way. The visible area is reduced by  $1/d^2$ . The formula for the force of gravity by earth is  $\text{earth}/d^2$ . This is the same formula as Newton's but the numerator is a measure of the shielding effect of earth and the denominator is the optic reduction of the size of the earth: the same relationship which is calculated for the optical chart in an eye specialist's office.

What may arise from a universal presence of gravitons in space? If a cloud of gas in space was 1 million km across and blocked gravitons by 1 % for each thousand kilometers then 50 units would block 40% and a hundred units would block 65%. The center of the cloud would be depleted to about 11 % of the surface gravitons. That would lead the cloud towards the shape of a pancake rather than to a ball.

The same type of analysis may be applied to our galaxy. The force of gravity would be greater at the edge of the galaxy, but due to adsorption of gravitons less near the center. Velocities of stars near the edge would be relatively increased. Mysterious dark matter would not be needed to explain the increase.

Alber's paradox, which concerns an infinite number of stars gives an even brightness to the sky. This may be considered in the case of gravitons. They are everywhere and going in all directions. In a general sense they are not stopped by anything. They would set up a universal coordinate system in reference to a pendulum swinging in space. This is comparable to Mach's universal coordinates.

How might gravity be tested deep inside the earth. Obviously that is well nigh impossible, we could not get there to do it. However if we constructed a rigid steel sphere to keep out all air pressure and put a sensor for gravity into the sphere and lowered it into the deepest mine and the deepest ocean trench we might get a reading of true gravity. I am suggesting the reading deep down would be close to that from the surface, not of greater gravity. I would also suggest it would be even less, or zero, at the center of the earth.

If gravity moved at the speed of light pulling from the Sun would trail the earth by eight minutes of arc. This would slightly slow the speed of earth and over millions of years would let earth drop into the Sun. I will suggest that gravity pulling from the Sun does not occur. The sun has set up a state of universal graviton background in our region and this imbalance of gravitons has controlled the orbit of the earth about the Sun.

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