UNIQUE EXPERIMENT CONDUCTED DURING THE ANNULAR ECLIPSE ON 15TH JANUARY 2010.

1. The background.

The published scientific media reports indicated that the path of the annular solar eclipse on 15th January 2010 would be about 12 degrees south of Kotagiri, Nilgiris, Tamilnadu, India, where I reside. Since Kotagiri's latitude of 11 degrees north was just outside the path of the total eclipse, I decided not to conduct the unusual experiment I had been planning for 20 years.

The goal of the experiment was to verify the principles derived in an alternate theory on the structure of the Universe, where space was identified as a medium with defined properties, whereas in Physics, scientists held the opposite view that it was vacuous and empty.

However, on realising that such close an opportunity may never come again, I changed my mind and decided to try out the experiment on the night before the eclipse. Hence, I prepared for the experiment only on the morning of 15 Jan 2010. Since the experiment was a very simple one it did not need expensive or complicated equipment to conduct it.

In fact this article has been written only to convey to persons with even an average interest in science that they too can carry out this simple and inexpensive experiment, to observe the effect of changes in gravitational force, whenever a total solar eclipse occurred in their vicinity.

2. The equipment for the experiment was selected to detect the changes that would take place according to the new theory.

We all know and have seen that tides are caused when the Sun and Moon are above that area where sea level rises. The general scientific explanation over the years has been that the gravitational force of the Sun and / or Moon created such effects. At the same time it was accepted by scientists that space was empty and vacuous, yet such forces that kept planets in orbit and caused the tidal effects acted through the region that contained 'nothing'.

The atmosphere composed of passive air molecule, turned into storms, tornados and typhoons, only because of some force that upset the balance. Therefore it was understood and accepted that the medium of air reacted in that way to a cause and effect cycle of changes in it. Similarly, the molecules of water in the sea in a calm state, turned into a tsunami only as a reaction to some cause that upset the earlier balanced state. Here the underlying logic was that the medium of molecules of air or water transferred the changes and there was nothing strange or illogical about it.

However in the case of space that was deemed to have no medium to convey the changes, the process of a mathematical formulation had to be substituted to make it seem logical. The important question was that if tons of sea water was raised and lowered daily due to the position of the Sun or Moon, could not one test this fact, when a sudden change, as during an eclipse, apparently obstructed or modified that force?

The primary focus of the experiment was to test and demonstrate that reactions were initiated only when the balanced state of the medium in space was disturbed. Secondly, it was also to expose the existence of a cause and effect sequence that turned passive mediums into exhibiting violent reactions as in the case of storms etc in molecular mediums. The pattern of such reactions fell into a stereotyped sequence that exhibited the characteristics of a wave or vortex, like the tsunami or tornado in its respective medium. One of the factors that contributed to exhibiting a sharp increase in the level of such forces seemed to be connected with the way in which waves acted. In a calm sea that was disturbed by a gentle breeze, small waves were created at regular intervals or distances. As the force of the wind rose the waves came closer to each other or the time interval decreased. At still higher levels two waves merged into one and so on till a large number acted as a single large roller ending in the tsunami like behaviour. The key element in the increase of force in a medium seemed to be the simultaneous nature of action.

Therefore it became apparent that we were able to count the smaller waves individually only because we could observe the time interval separating them but when all those merged into a continuous one, it became a single huge roller but with a force that was proportional to the number of smaller waves merged in. In other words though we counted a single roller, it contained a large number waves acting simultaneously to exhibit the increased force. Here we have an odd situation, where the number count per period of the waves decreases to one but the force becomes proportional to the hidden value. In terms of observation in Physics the massive roller had gained force as a unified mass.

Since the experiment was aimed at detecting something that seemed contrary to the accepted description of space in Physics, the need to compare with what is already known in science became a necessity, if the result of the experiment was to be accepted by scientists too. Light from the Sun reaches the Earth in about 500 seconds and the individual wavelength of light can be measured in many ways, like using a prism. It shows the spectrum of colours that indicate the time interval separating the waves of light. This is parallel to our observation of separate waves in water caused by a gentle breeze. The small wave in water carries a small force, which of course multiplies into the tsunami equivalent later. The question then is 'do light waves too carry a small force', for only then the comparison of water waves as a parallel condition would be meaningful.

Fortunately the answer is yes. Recorded laboratory experiments exist that shows that an anemometer type of rotating vane painted black on one side and white on the opposite side, spins when a beam of light is aimed at it. It is exactly similar to the anemometer that measures wind speeds by its rate of spin. Further, as accepted in Physics, light waves behave both as a particle and a wave. Hence we can now extend this parallel behaviour to waves of light coming from the Sun. Could the beam of light coming from the Sun be turned into a merged, simultaneous 'roller' or 'vortex' by a forceful or sudden disturbance, so that its wave separation interval disappears and turns instead into a merged "roller" with sufficient force to display the characteristic of mass? When the light wavelength interval merges, its spectrum characteristic would change of course and it would not be measurable but its cause and effect reaction of increased force on objects could become detectable under the right condition. Now we have a goal to seek in the experiment. An object on Earth must react to the change on the beam of light from the Sun when it is obstructed. Next question would be 'would this change occur at the same velocity of light travel' because that beam of light would become undetectable when its wavelength time interval is reduced to near zero due to merging. The goal of the test becomes clear from the foregoing analogy.

3. Method

In order to establish a perpetual state of balance it was decided to float a wooden rod vertically in a tank of water with its bottom end weighed down to make it rest firmly on the floor of the tank. Adjusting the depth of water in which the rod remained vertical would enable it to respond to the smallest forces that affected it. It was necessary to choose common materials to establish the universality of the interactive effect of space. The entire setup had to be under the open sky so that stray effects would not distort the result. The most important point was that the process of balancing had to be constant and continuous through a process of self-control thus emulating the real state of balance in the medium in space. Therefore, mechanised means of control to achieve this perpetual and perfect balance could not be used.

4. The equipment.

A rectangular roofing timber of 1.1 x 1.8 x 38 inches was finally selected as the rod. A round headed fibreglass sheet roofing nail about 2 inches long was hammered into the bottom end. The roofing nail sandwiched 4 numbers 0.375 inch thick (totalling 1.5 inch) ceramic speaker magnets of about 2 inch outside diameter with a central hole of about 0.75 inch. Ceramic speaker magnets were chosen as it would not shift from its central position since it was sandwiched by the steel nail with a rounded head. Further the round head of the nail rested in the bottom of the tank with the ring magnets forming the counter weight at the lowest point. Hence the magnetic rings being firm the centre of gravity of the rod would not vary even if it swung over a large angle of inclination because of any change in the counter weight position. The total height of the rod and nail was 39.5 inch.

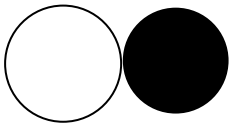
The rod was placed in a 500 litre flat bottomed PVC tank and the water level was adjusted to 31 inch so that rod remained vertical but also rested firmly on the floor of the tank. It was so finely balanced that a light breeze set it swaying over a 15 degree arc as the round head of the nail allowed it to sway freely and eventually return to the vertical balanced position.

The tank was located between two buildings under an open sky. In order to stop any breeze through this corridor a cloth screen on a portable-clothes dryer was erected close to the tank that cut off all air movement. A long metal curtain pipe was securely placed in an absolutely vertical position near the tank, to act as the marker against which the change in the angle of the rod could be gauged and measured. Two digital cameras were kept ready on small stools to take pictures periodically. All the foregoing preparations were completed by about 11 am IST. It had taken three hours to complete these preparations.

5. The experiment in real time.

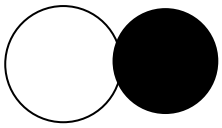
The photos below were taken from the West side of the rod, with camera pointing east. The South is to the right and North is to the left, when looking at the picture. The path of the eclipse was on the right side, about 12 degrees away from the overhead position towards the South.

The eclipse started at around 11.22 am here. A dark film strip was used to visually observe the eclipse.



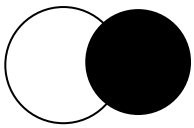
Zero time 11.22 am. Start of eclipse

At about 11.30 the rod started to slant or swing away from the vertical, forming a semicircular arc, towards the Sun / Moon position on the South side.

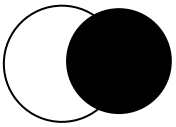


!st. change time 11.30 am. 8 mins of eclipse

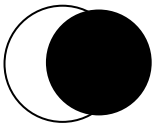
The angle of inclination kept increasing very slowly in synchrony with the rate of progress of the eclipse.



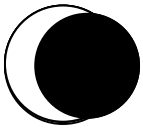
2nd. change 11.45 am 23 mins into eclipse



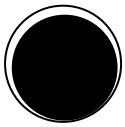
3rd. Change 12. Pm 38 mins into eclipse



4th. Change 12.30 pm 68 mins into eclipse



5th Change 1.-pm 98 mins into eclipse



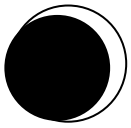
6th. Change 1.22 pm 120 mins into eclipse

At about 1.22 pm IST the maximum annular phase occurred but the ring of light was not equal all round, as the location of Kotagiri was about 12 degrees north of the path of totality. The ring was a crescent when the maximum annular phase of the eclipse occurred and the angle of inclination of the rod had reached about 2 degrees in the direction of the Sun / Moon position.

<u>At this point a sudden and unexpected movement took place.</u>

7th Change 1.29 pm. 127 mins into eclipse

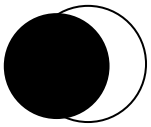
The rod flipped over in a semicircular arc, swayed over to the opposite direction and settled into the same angle of inclination of about 2 degrees but away from the direction of the Sun / moon position.



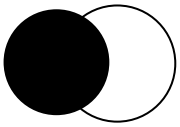
8th Change 1.30 pm 128 mins into eclipse.

The movement was very steady, smooth & even but relatively quick. When it had reached the same angle of inclination on the opposite side the rod stayed in that position as though a damping force had restrained it. It was very unlike the swaying due to a breeze, when it had oscillated several times over a large arc. The entire change over from one side to the opposite one was completed in about 8 to 9 seconds. As such a quick manoeuvre was not foreseen I had not arranged for a stop watch etc for it to be timed accurately. When the swing over started I thought a breeze had sprung up but the limp state of the wind protection screen confirmed there was no breeze. It was then that I realised the null point of the eclipse had been reached and started

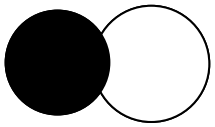
taking picture every few seconds. From the frames that captured this sequence, I was able to gauge the interval of time as 8 to 9 seconds. Considering that it took nearly 2 hours to swing over 2 degrees, it must be recognised that it was indeed a violent change over of about 4 degrees in approximately 9 seconds.



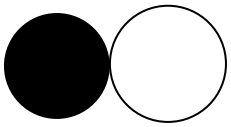
9th Change 2 pm 158 mins into eclipse



10th Change 2.30 pm 188 mins into eclipse



11th Change 3.00 pm 218 mins into eclipse



12th Change 3.22 pm 240 min into eclipse.

Then as the eclipse proceeded towards its end, the rod came back very slowly to its original vertical position by about 3.20. It occupied the same position as it had at start. The swing over was sudden at around 1.30 pm but the return back to its original position was slow and gradual.

The distinct separation between Sun and Moon occurred at around 3.30 pm. I took periodic snapshots (about 200) of the experiment. The photos of the Sun / Moon eclipse phases did not show up in the camera shots, even through darkened film strips, for it was overexposed. As I did not anticipate any surprises in the result, I had mentally ruled out the need for a movie of the entire experiment. Had I an inkling, that stills would not capture the critical manoeuvre I would have switched over to movie mode.

6. Conclusion.

From analysing the result, the questions posed before the experiment was started, were answered positively. While the eclipse had commenced at about 11.22 am here, there was no detectable reaction on the rod that was in a vertical and perfectly balanced position. But after about 8 minutes (480 seconds) the rod began to move and slope towards the Sun's position. The normal view has been that objects accelerated towards the Sun because it was attracted by its gravitational force. But the rod that was in perfect balance in the tank of water began to lean over very gently because the centres of gravity of the masses of rod and water were no longer in synchronised balance. The rod acted as though the level of water had changed very slightly, yet it came back to its original balanced state at the end. It meant that the surface level of the water had changed its "flat level". The easiest way to check if a surface was flat was to use a 'spirit level'. But that was correct only as an approximation over very small distances On the contrary the surface of the oceans are indeed a very large spirit level but it is far from flat at the horizon, where it is actually curved and circular.

Hence we can reach the conclusion that as the direction of the Sun / Earth line up of its centres of gravity was forcefully distorted by the intrusion of the Moons mass into that column of space, it created changes in the objects that were connected to it through the medium in space. Such a reaction would not have happened had space lacked the properties of a medium. Also the observation that objects were "attracted" towards the Sun, Moon or Earth can be substituted with a statement that it was made to move towards conditions where the 'waves' were merged thus creating massive states with a reduced interval of time that normally separated the waves in the medium of space. It is similar to higher temperatures that are actually at a 'higher' vibratory rate; always transfer towards a lower vibratory rate of a lower temperature state.

Normally the ray of light from the Moon's position takes about a second to reach the Earth yet it was observed during the experiment that it took approximately 470 seconds for the rod to react to that initial change in position. The change had actually commenced at the start of the eclipse when the light from the Sun was beginning to be obstructed. From our analysis of waves in a medium, as the wave numbers increased with force, the time interval between them reduced and it merged to create a state with more mass or force.

In a medium like water or air the molecules transfer any change of force by passing it on from one to the next as a process of transmigration. Therefore the rate of such transfer has to be maintained at a pace consistent with that medium. It is similar to a crowd of people moving forward smoothly but if some of them move faster the crowd gets pushed in the forward direction and leaves a gap behind, creating in that process a human wave in the medium of a 'crowd of people'. Now we can take that analogy a little further to understand an important principle in nature. If one person is pushed hard enough and is forced to carry another, that person will certainly slow down. This obvious reaction goes by the name of conservation of momentum in Physics, as a cornerstone principle. Hence during the eclipse, the Moon's intrusion into the space between Sun and Earth, created a sudden change in that balanced state. It forced the waves in the medium of space to merge during the period of the Moon's entry and expand during its exit from the eclipse stage. It produced the sudden change by flipping over the rod to the opposite state.

Therefore as waves merge its rate of transfer too reduces. But in a volumetric space it does not change as a linear ratio and the reason is easy to understand. Any cubic volume can be defined as being proportional to the cube of radius. Any length or radius in a dynamic space can be shown to be proportional to velocity into time. Therefore any change in volume can also be defined as being proportional to velocity cubed into time cubed. However, only the linear aspect of time can be measured, which then leaves the time squared part hidden or merged, which in the example of a roller or vortex has been shown to contribute to the increase in force as mass.

The Moon's orbiting distance or radius is approximately 61 times the Earth's surface radius which gives 226981 as the ratio of volumetric change. This must be equal to the ratio of orbital time squared and taking the square root of 226981 = 476.4 times.
The orbital time period of a cycle on Earth is about 5045 seconds and the Moon's cycle time is about 2404127 seconds and the ratio of change equals 476 times the standard time of a second which equals 8 minutes. The observed delay was indeed about 8 minutes remembering that the experiment was a simple, inexpensive one that was intended only to observe a physical change during an eclipse. The experimental result confirms that the undetectable components in space form a medium which provides the cause and effect connection to tidal actions.

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