Ignoring Newton's Hints Brought Scientific Chaos

Paul Schroeder
8244 Anna Avenue, Wind Lake, WI 53185
e-mail: pshrodr8@aol.com

Newton did not accept nor espouse action at a distance, but he couldn't provide a physical description of gravity. A great divergence of thought stems from the clash between Newton's Theory indicating that gravity, subject to the inverse square law, is what retains orbits as opposed to Descartes view that whirlpools and eddies sweep planets around the sun. Had Newton's view of space not prevailed, our sequence of acquiring understanding of the universe would have been different. It is what mankind hasn't done since Newton's time that forms our perspective of space today. We haven't defined gravity.

1. Introduction

A discussion of gravitational force by Isaac Newton follows:

"For here I design only to give a mathematical notion of those forces, without considering their physical causes. – Wherefore the reader is not to imagine that by those words, I say where take upon me to define the kind, or the manner of any action, the causes or the physical reason thereof, or that I attribute forces, in a true and physical sense, to certain centers (which are only mathematical points); when at any time I happen to speak of centers as attracting, or as endued with attractive powers. You sometimes speak of gravity as essential and inherent to matter. Pray do not ascribe that notion to me; for the cause of gravity is what I do not pretend to know." [7]

Newton's proclamations live on. However, in the meantime we have lost any physical understanding of gravity.

Isaac Newton is revered for his achievements in his era. He unleashed knowledge in many areas via his new perspective. But he also provided us a puzzle needing research, a yellow brick road' to further knowledge. Soon after his time, the road got muddy. Science developed effectively addressing his specific revelations and creating the new physics. But lost in the shuffle was the unexplained mystery, i.e. the structure of space and the actual nature of gravity. Buried in that void is vast knowledge via an optimum perspective of our universe.

The path Newton hinted about says 'find out what gravity is'. That is the question of the ages. By his mention we should recognize the void in our knowledge. Newton also said 'he would not refute gravity as a motive particle if it didn't hinder the motion of orbitals.' That restriction stopped progress for hundreds of years since particles cause friction.

2. The Aether

Isaac Newton left us an undefined force which he carefully refuses to attribute to centers. That force therefore needs to be transported in order to perform as an attraction. So let us review the structure of space.

"Luminiferous aether" was the hypothetical substance through which electromagnetic waves traveled. It was proposed by the Greek philosopher Aristotle and used by several optical theories as a way to allow propagation of light, which was believed to be impossible in "empty space".

"It was supposed that the aether filled the whole universe and was a stationary frame of reference, which was rigid to electromagnetic waves but completely permeable to matter. Hooke endorsed the idea of the existence of the aether in his work Micrographia (1665), and other several philosophers of the 17th century, including Huygens, did the same. At the time of Maxwell's mathematical studies of electromagnetism, aether was still assumed to be the propagation medium and was imbued with physics properties such as permeability and permittivity." [8]

So, the carrier became the aether. Essentially space was given properties.

"To Robert Boyle in the 17th century a little before Newton, the aaether was a probable hypothesis and consisted of subtle particles, one sort of which explained the absence of vacuum and the mechanical interactions between bodies, and the other sort of which explained phenomenon such as magnetism (and possibly gravity) that were inexplicable based on the purely mechanical interactions of macroscopic bodies:"

Isaac Newton contended that light was made up of corpuscles of matter. As its medium, the aether propagated light waves in the absence of ordinary matter and served as Newton's absolute space. A serious issue arose asking 'did moving matter drag the aether with it or did the aether remain immobile'? Two hundred years were spent arguing whether the aether was rigid or flexible. Its interaction with physical masses led to confusion. Lorentz assumed the electromagnetic aether to be entirely immobile. The whole discussion has resurfaced today signaling that nothing really has been settled.

3. Relativity

The postulated aether solution accepted in our time came as part of relativity theory.

`"In 1887, a crucial experiment was performed by Michelson and Edward Morley in an attempt to detect the existence of the aether. The experiment, named the Michelson-Morley experiment in honor of its authors, shocked the scientific community by yielding results which implied the non-existence of aether. This result was later on used by Einstein to refute the existence of the aether and allowed him to develop special relativity without this artificial (and non-existent) constraint." [8]

The debate about the aether was so divisive that science jumped on the answer that Einstein provided. He refuted any aether and built relativity. This whole theory would not have taken hold and dominate physics today had it not temporarily resolved the aether question.

Having nothing physical serving as the background for reality, light became the determinant of space. Its speed limit leads to restrictions to visual space. Einstein then applied these restrictions to actual space, introducing gravity wells bent space and a 4th dimensional merger of the disconnected terms space and time. In reality one can get the proper idea of space by looking out and viewing fixed space relative to himself. As we translate that view into ever more complex rotational systems, each built around the rotation of its center; the new foundation becomes ever more ethereal.

Some focus can be gained by realizing that the motion of a mass must be relative to another mass. The motion occurs for one of three reasons. The motion may be perpendicular to gravitational effects, one or both of the masses may be opposing local gravity, or the masses are experiencing different regions of equilibrium relative to gravity. The motions are thus all accounted for by the relationship to gravity. Pursuing this perspective here will rebuild gravity theory.

There is similarity between relativity using light as the base for spatial time measure and our local use of the sun as time measure. Civilization had to deal with the complex light/dark durations leading to time zones, the date line, seasons, seasonal hours of daylight, variable daylight by latitude, etc. Retaining three dimensional reality while accounting for light speed limits should be no more complex. Doing so suggests accepting local space times and choosing a location (like Greenwich is used for earthly time) for universal space time and reestablish the concept. That universal time would not serve as a measure of motion due to numerous locations of gravitational equilibrium.

Merging time with space and delving in a 4 dimensional geometry has provided for curvature. But it has been more confusing than revealing and should be abandoned. The curvature then becomes the flow of space. That may seem like recalling the aether, but you will see why it is not.

4. Geometric Structure

To resolve the crisis we must decide how to represent the method, processes, and eternal nature of physical gravity? Once we have those answers, we can relate mass bodies and light to it and understand gravity's place role with EM radiation and matter. I reject the only existing physical representation of gravity as represented as bent space. That contradicts the geometrical definitions of space and dimension.

Newtonian gravity was assumed to act within an aether. It is viewed as a distortion of the aether or as space vibrations. As such it is given ambient pressure and a vector direction within its medium. It is often described today as an energy gradient. Since the effects of gravity change over distance from mass, is it the proximity of mass, or the act of focusing the flow relative to the mass that modifies gravity? If viewed externally by an outside observer, gravity has direction, variable concentration, and probably a velocity. Things we want to understand need to have structure. We can't allow gravity to be virtual. We must collect the features into a minimum packet. Gradient is not a packet. A corpuscle is a packet. Also a line or beam is a packet we can relate to other things. Since gravity has direction, relating to is as a beam packet should enhance perspective. The packet's location is external, outside of mass.

The function of geometry is usually to describe things via lines. We usually trace movements linearly. We do often picture gravity as lines of attraction piercing a spherical body. Radiation such as light has the same property and is pictured as beams while not usually revealing the inherent waves. So I propose to think of gravity as lines. By viewing gravity as a linear effect we have measurable components. Does the gravity's force and G apply to one beam, some beams, or many beams? Galileo showed that items of all different weight fall at the same rate. Let's consider this as being caused by pushing. The number of beams pushing determines weight. With each beam pushing on mass atoms, the weight is the sum of the pushes upon the particles making up the packet of mass. If you remove atomic particles, the pushes, and thus the weight decrease. The removed particles are then pushed and give weight to a separate packet.

The identical rate of falling is due to the common velocity of the beams pushing each point. There is no resistance by any points. The beams surrounding a sphere all descend at the same rate which varies only by altitude. Closer to surface beams are denser and provide more push as they focus in. This gives the variance with R^2 by relating spherically.

So we know why the total gravity push pressure varies by R^2 as we expand to larger spheres. Physics requires the push be a force. Then force $F = ma$. Like a constant pushing force accelerating a vehicle, the constant gravity push accelerates falling bodies. Thus the centripetal formula $a = v^2/R$. The constancy of a gravity field works for short distances of R and thus a constant force value G. Gravity's force at more distant altitudes is less at any point. This again results from reviewing the total downward net pressure at a point where the relevant point is a smaller part of the whole. The upward offsetting net pressure is also smaller proportionally. Overall we ask, what are the sum effects of gravity upon a sphere?

Physics has problems relating to things since motion has limits to its velocity. The speed limits for light/radiation and thus for acceleration, are caused by bucking gravity. The faster one goes, the more gravity one will encounter in the forward direction and the harder it is to further accelerate. This simple concept is finally finding support from experimentation showing that the theoretical relativity mass increase occurs only in the forward direction of the mass.

We draw light/EM radiation as linear waves, ie sin waves. Imagine that the beams coil around in the interior of tubes as they advance and thus appear as sin waves from all viewpoints. Since light is often viewed as lines, we can be consistent by doing so for gravity. Then we find the best description of gravity to be long wave radiation beams traveling at velocity C.

A geometric issue not directly related to gravity is the use of straight lines. No non-instantaneous path of motion can properly be defined as a straight line. A light beam from the sun does not travel straight! If we on earth think it comes straight here, then

what would a person at the sun think as he rotated and we revolved during transit? There is no straight up! All rotation and lateral motion of senders and observers create this issue. Practical science deals with such issues in many ways with concepts such as aberration. But the variances between source and observer perspectives tend to be overlooked by cosmology.

5. Pushing Gravity

Over the years there have been scientists who tackled the physicality of gravity issue including Newton's friend Nicholas Fatio who presented a particle gravity theory in 1698. Subsequently LeSage extended the 'mundane' particle theory of gravity in 1748. Subsequently such theories have been considered extensions of his theory including a revival by Kelvin in 1870. They realized a force implies interaction and promoted pushing gravity particles. But the path of knowledge had too many potholes in those days. They did propose the emptiness of matter and theorized a very key point, the penetration of masses by gravity particles. Science has fully debated and now accepts the penetration of massive bodies. One theory defines and has possibly detected neutrinos that theoretically can pass through earth. LeSage Theory also proposed reduced gravitation in shadow regions between masses.

Pushing gravity theory never gained acceptance. It was primarily the heat generated by internal interactions and the friction of particles encountered by orbitals that did and still does block pushing gravity progress.

But now we know that the sun rotates!

6. External Gravitation

Out of this central-body rotation and the curvature of any transference comes External Gravitation Theory. It helps explain the solar system and extends similarly to the atomic and galaxial systems.

Considering motion of the physical entities of mass and radiation beams, we can address curvature throughout the universe. How do central rotating sources control orbital revolutions?. You may be amazed at how many concepts interface within this development.

To gain a foothold we address the two pushing gravity issues. What allows penetration while limiting heat build up, and what will solve frictional interference issues? Penetration of massive bodies is required for external gravitation. At issue is that interaction of gravity particles with atomic particles within a mass would create extensive heat. But now we know about radiation waves and I define gravity as long wave radiation beams. Within the beams are waves we can think of as virtual particles. Any heat build up from radiation interacting with matter would be much less than proposed by Maxwell, and naturally releases as the light and heat of the sun. Gravity penetrates other mass bodies, including earth, generating heat and light, but to a lesser degree than in the sun.

The other pushing gravity issue is corpuscular interference with planets in their orbits. The friction would gradually decrease their motion. To avoid this stigma, science built around Newton's concept that things in motion remain in motion unless acted upon. His whole system depended on that statement which demands no friction occurs in space. But space is not void, and any friction leads to change over time which hasn't happened. Additionally there is confusion about the term "inertia", needed for retaining orbits. It is some kind of force that doesn't do anything but resist. But try this new definition. Rather than being a resistance to a change in motion, inertia is accommodation of the local net flow of gravity.

So much has been lost by not recognizing that gravity pushes orbitals. It does so because beams ejected from rotating bodies apply directional push and thus revolution to bodies they encounter, such as orbitals. Gravity provides the motive force. The transferred pushing pressures keep our universe intact. Without it bodies would crash together as they responded only to gravitational attraction. Finally we can replace Newton's idea of eternal uninhibited motion of orbitals with a physical offset to centripetal forces. We offset that here by explaining the multiple functions of central body gravitation. It is rotational energy that gives structure to the universe. Waves, looping, and path bending of beams are the nonlinear actions that exhibit rotational energy. Without rotation there would be no structure for either mass or radiation.

Pushing particles thus provide the whirling impetus for orbitals, and any concern about causing friction for the orbitals disappears. The orbitals flow along with gravity as do leaves floating in a river.

The sun causes its orbitals to revolve. Kepler's solar system motions make more sense with pushing gravity providing impetus, as discussed elsewhere. The nonsensical original gas cloud condensing into masses with various revolution rates around the sun is gone. All bodies rotate and all cause some degree of orbiting to bodies nearby.

At last gravity is multidirectional and affects everything. Its external pushing nature allows it to hold things together. Gravity beams intersect, sometimes producing atomic structures and behaviors of various wave lengths of radiation. Gravity is the structure of the universe and the background against which everything else is detected. It is continuously regenerated by the stretching of light beam waves from distant stars as they travel over considerable distances. The universe, as described, can logically be infinite and function similarly throughout with no boundary issues.

7. Nuclear Structure

The solar system structure and review of forces are somewhat extensive. We shift focus here to the nuclear arena for a quick look at atomic structure. The sin wave structure of beams is as helical coils. There is a slight conical shape, diminishing thickness, to the beam as it aims toward a mass. If the coil separations are small (the frequency is high) and this 3 dimensional wave bends back upon itself, beam lines may intersect adjacent lines. Such crossings will double up due to being coil intersections. Consider a slinky with slightly more rigid coils. You can manually take one loop of wire back around its following loop. There is crossing of beams and returning back (exiting). The crossings cause loops to touch. I claim these touchings are electrons. They are usually in pairs due to the exiting. There is a type of spin created upon contact because the flow within the

two beams varies directionally. The crossing remains in place while the contents of the beams flow on. This introduces the important connection between radiation and mass. And as gravity is a beam like radiation, we have introduced the spectrum of existence running from the longest translational beams to the tightest rotational beams. By remaining in place the crossings establish the static nature of mass.

The more waves within the radiation beams that do the crossing, the more complex is the sum and placement of the resulting crossings. A coil bending back upon many prior coils will create crossings whose distance from the axis varies with some pattern. The seemingly infinite details from the simple crossings to the complex define the structures of elements and compounds of mass.

The discussion applied here to coils of a bent beam is similar for intersection beams. Two or more beams coming from different directions can have coils that interact and create electrons. Masses do build up because the more concentrated the gravity beams as you focus them on an existing mass, the more probable the chances of interactions. We do support here the ongoing slow growth of masses.

To have beams and crossings, there is some form of space between. In the study of magnetism we find that the concentration of redirected gravity within electron loops causes the existence of a beam of magnetism extending throughout a wire wrapped tube. A somewhat similar condition occurs as part of the formation of matter. The center of each helical coil of a beam has potential. As reference, an electrified toroid doughnut coil creates magnetic action at its center. So similarly do gravity/EM loops The centers of each intersecting loop contains potential action. It is the interaction of the loop centers that identify the nucleus. The loop centers will be adjacent to but separate from each other due to the intersect nature of the loops. The nuclei consist of redirections of gravity in various directions. Thus the nuclei are not properly described as charges and do not specifically push themselves apart as would positive and negative charges. So the protons are loop centers joined together in the nucleus and the electrons are the crossings. There can be cases where loop touching rather than crossing occurs. That gives electrons that are not paired as they don't lead to escaping crossings. The offset to this form of electrons is neutrons rather than protons in the center.

8. Conclusion

There are no mathematical formulas here! Is math a necessity or the downfall of physics? An over reliance upon math is dangerous because varying curvature means no measurement extends forever. No fixed measuring theory, including those using calculus will prevail.

Without gravity there are no masses and no universe. We should want to better understand gravity. Many convoluted analyses and ethereal concepts have been created by science to support the confusing theories that have previously defined and related actions to gravity. Mankind should prefer this simpler view.

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