

# Altering the natures of gravity and light redefines the universe

Paul Schroeder

Pshrodr8@aol.com

## Abstract

I have a number of 'Universe is Otherwise' papers that focus on giving gravity a physical nature and expanding its effects upon everything in our universe. The summary of my 'paep'(1) gravity recognizes a pushing force applied by the flow of EM radiation such as light.

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### Pushing gravity

Pushing gravity can penetrate masses and affect matter from any and all directions. Considering all directions there is a 'net' pressure that may result in motion. Gravity can push from multiple directions with variable forces. It is the entire nature of infinite space. Gravity is a form of EM radiation, and thus gravity has always been everywhere. Radiation penetrates masses and increases in frequency when exiting stars as light. The frequency then diminishes as the beams travel through space. We are misled if we rely on a foundation of all our previous knowledge. Gravity has been treated as a metaphysical force generated by masses internally. In reality the source of gravity is the push pressure of radiation. The effect of gravity 'pulling' us down on earth has been labeled as an attraction. An alternate view of the universe and of gravity based in space rewrites science.

### Introduction

Our earthbound view has gravity pulling material things straight down. Counteracting gravity is done by energetically launching matter upward. Any initial upward force is quickly overcome and the matter returns to earth. Therefore we must overcome the pressure continuously in order to launch rockets with ongoing force. Theoretically we can ultimately overcome earth's gravity at some altitude. But that is not true as it takes horizontal motion by the missile to remain orbiting. The moon is a distant example of the need for lateral motion to overcome the downward pressure toward earth. I suggest that any thought of overcoming earth's gravity is invalid. But the pressure toward earth does continuously diminish with distance, just never becomes absolute zero.

Another method of departing earth without extended force is by leaving at the speed of light.

### Light

We will analyze light, the other function that has strong foundations in historical views. Einstein gave light a matter component - photon to explain light impacts material things. Also he accepted light speed as being fixed across space. Using those as a base science, reality has required adjustments such as expansion and big bang to account for increasing red shifts across space. Historically we have been led

astray by Einstein denying space any nature (empty space), and by Newton improperly assuming space causes no friction.

## Changes

This paper proposes 2 changes, 1. Removing the assignment of a fixed speed to light, and 2. Expanding the role that gravity plays for motions in space.

Perspectives are a key to our personal knowledge and are relevant to overall science definitions and concepts. Assigned actions may vary when viewing a topic across different arenas. An extreme example of differing arenas is the extending of local actions and perspectives to the long distances across space. Light and gravity are the two actions most extensive in environment and thus most susceptible to variable measures and perspectives.

## Gravity

Gravity local to earth and the solar system established our picture of the universe. Some claim gravity is different elsewhere but modifying the function itself has no proven basis. We aren't reviewing dark matter here. At issue is that we entirely ignore the effects of gravity relative to the flow motion of radiation when defining the picture of the universe. Matter is subject to gravity but radiation beams 'were' void of matter. Another bad distinction. Reality is that anything that can move is subject to gravity. Thus light radiation must be subject to gravity. This is supported by the fact that light and other radiation have been found to cause impact upon arrival, including impact on our eyes when defining vision and when considering light from the sun impacting earth. Locally scientists have recognized and used the idea that gravity effects light. Einstein proposed a gravity perpendicular effect is a source of bending light beams, often verified. But when discussing the 'speed' of light any lateral gravity effect is ignored. Actually, over sufficient time the summation of gravity lateral effects must affect the speed of light. The effects are nearly infinitely small impacts but occur an infinite number of times. It is hard to eliminate either factor due to smallness. To some unknown amount gravity must affect light velocity over time. Cosmology theorists have not addressed this to revise the picture of the universe.

## Source and destination

A complete picture is that gravitation from a source body gradually diminishes the departing velocity of light in summation over a long period of time. Furthermore the gravitation of the destination body gradually increases the velocity of incoming light over a long period of time. A net result will be incoming light traveling at nearly the same speed as its original speed. For experimental support of the destination 'pulling' the light, consider the Pound Rebka experiment. It showed a blue shift of light approaching earth from space. Their test beam functions as would a beam during the second half of light travel from a distant star.

Given that a beam travels from 1 sun to another, the slowing up till half way by the gravity force is so dependent upon distance over the long time that a specific amount of slowing depends on the length and could only be first determined examination, currently untenable. The source retention pressure is

partly offset by the similar 'net' pull pressure by the destination star during the arrival portion. Mathematically, the original and subsequent speeds matter, as the slowing of the original speed will exceed the accelerating of the subsequently lesser speed upon reaching the second half. Consider a percentage reduction followed by the same percentage increase. You don't quite get back to 100%. This yields a slight net red shift. Actually my system provides the proper correction to light redshift regardless of not having created any interest. Note also that this interpretation uses real facts of our radiations while The idea of Doppler action affecting light has no logical base other than it was the 'in thing' when red shifts were first being noted.

## Structure

Going forward, the period of time during which the gravitation acts establishes our view of the structure of space. The Doppler redshifts assigned to cause expansion are assigned a distortion factor of  $1/r^2$  based upon a theoretical departing velocity of distant stars. We reject Doppler here and attribute stellar redshift to gravity. There is no overall motion of expansion. Redshift is caused by gravity acting on the light beams as indicated here. Then the redshift we observe remains an indicator of the distance a star is away from us but it's measure is other than  $1/r^2$ . Our universe is otherwise!

My model relies on both the nature (size) of the source and the distance to a destination. One might say that the relative distances to source and destination apply in a way that simulates an aether effect. However my system refutes any aether. There is no need for imagining an aether as we have a real and physical substance, EM radiation, which is everywhere, and defines existence within the universe. Likewise the radiation is our actual "pushing gravity".

## The standard model

Other gravity/light models such as relativity rely on a constant  $c$  for light speed. Regarding current theory:

Einstein's analysis, as stated in his papers, hangs on just 2 **postulates** (verbatim from the 1905 paper): 1. the same laws of electrodynamics and optics will be valid for all frames of reference for which the equations of mechanics hold good; and 2. light is always propagated in empty space with a definite velocity  $c$  which is independent of the state of motion of the emitting body.

The problem for both Newton and for Relativity is that space is not empty. This detracts from all systems relying on fixed –constant concepts. The postulate as written is ok, especially in our lateral equilibrium. It identifies propagated speed but does not even suggest that the velocity will continue at that speed  $c$ . So many theories rely on that continuation. If we fall back on the word empty suggesting an eternal equilibrium in space, I object and claim that gravity will affect the ongoing velocity. Regarding the statement 'independent of the state of motion of the emitting body', that works for motion within equilibriums. But if you accelerate up and into a net downward pushing gravity, the light velocity you send will differ from  $c$ . Gravity is its own type of friction. This issue stands even for readers that don't accept my pushing gravity.

## Black holes

We will compare two factors could theoretically influence the flow of light, distance and size of the source. A third possible influence is motion away as in Doppler which we refuted above. Distance and size have been avoided in the fixed speed of light. Regarding size of source, no affect applies to  $c$  until we imagine a black hole. There light doesn't escape. Perhaps it revolves around rapidly but remains with the source. But that says mass affects the outward flow of  $c$ , a conflict. There should then be a middle ground where light nearly gets to some destination or gets there going slower.

The mass size factor has been over-ridden, so how about the distance factor? Why hasn't the idea of light slowing in such a way that the further away the source the less velocity the light has upon arrival. The frequency of the waves diminishes into red shift and then microwave frequency. Soon the beam is undetectable to the observer. Ultimately that actually happens and leads to science declaring a limit to the size of the universe.

Note that the diminishing of visibility answers Olber's paradox. Stars are everywhere.

## Summary

I find that the concept 'inertial frame' confuses understanding. It makes people draw all these boxes to separate pairs of participants, usually boxing the origin and boxing the recipient. The differences between individual frames are best understood as a flow of the 'net' gravitation between two locations.

My attention to light traveling within gravity became my entry into building a new universe which includes the infinite universe and many other facets of gravity beam actions. Please try and think through our universe and imagine how many current theories/models fail if the universe is infinite. What happens if universal structure is radiation throughout space and in matter, if gravity pushes and from all directions, and universal distances differ without Doppler. Frictionless space, black holes, big bang and expansion, dark matter and dark energy are mostly meaningless in this universe.

## CNPS

My impression is that CNPS has no intention of making a mark. It has served as a conversation arena which focuses on debating and technology. All the attention has been to disputing various parts of Relativity lead nowhere. The debates also lead nowhere. Other organizations such as FQXi also lead nowhere but it attracts more papers, participants and activity.

The Universe is Otherwise presents a complete alternate way to view the universe and avoids any conflict with known facts of space. If CNPS were ever to make an impact on the world it should be by coordinating and promoting one unique complete model of the universe such as that presented here. The organization would stand for something and maybe gain stature.

## Note1

Paeps – particles applying external pressure.

Historically, pushing gravity models assigned gravity to particles called gravitons. I countered with the term paep until I realized that beams are the gravity source rather than particles. Science defines radiation as massless which leads to conflicts. Since radiation is affected by gravity, just as is mass, then radiation might be made of particles much smaller than nuclear particles. Then a paep can be the pressure force of pixel type particles.

Paul Schroeder

Pshrodr8@aol.com

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