

Gravity & Light paper #11
The Foundation of Ξ Theory

The general presentation of:

The Foundation of Ξ Theory

The following is intended to discuss Ξ Theory generally with some detail while deferring to the Gravity & Light papers for further details. Herewith is noted the Gravity & Light papers by (#) pertinent to the theory. From an author's perspective i offer: Gravity & Light paper #11.

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The Ξ Theory logo

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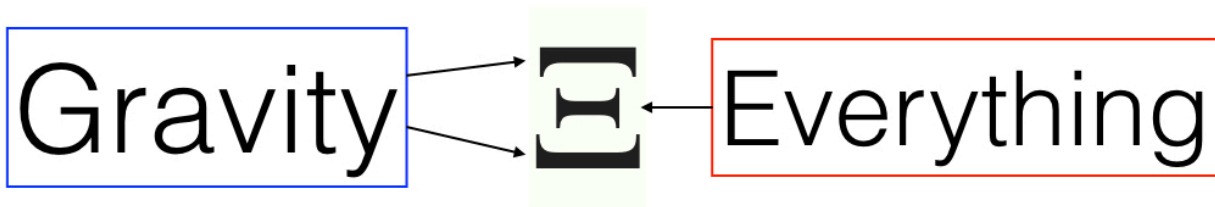
Parallelism - a method to solve scientific problems.

The Rift- Small/Local Scale contraction takes place faster than the large scale.

CMB- CMB paper to follow, apply the same formulas for CMB explanation.

References as noted within this paper and noted in the G&L papers.

Ξ Theory



Ξ Theory, pronounced “zi-ee theory”,

a Theory of physics, authored by douG

Ξ- 14th letter of Greek alphabet, ξ- is the lower case of the capital Ξ .

Ξ Pronounced- zahy, ziee, zi-ee.

*Zi- ee: Zi- Military- Zone of the Interior. The gods themselves had each his ZI ; it was this alone that made them permanent and personal. The ZI corresponded with the ka or "double" of the Egyptians, which accompanied like a shadow all things in heaven and earth.- Early Israel.
Gravity accompanied like a shadow, everything.*



General Statement- With Ξ Theory and its accompanying Gravity and Light papers listed in the following Table of papers, the contraction of the Universe can be concluded allowing explanations without dark energy.

Table of Papers- a list of some of my papers available online:
<https://www.quora.com/profile/Doug-Snell/blogs>

Paper:	Discussion or demonstration of, with link/reference:
#1	Light's path (curvature) v Gravity's path, Gravity's affect on light's path https://toegravitylightpaper1.quora.com
#2	Light's path affected by a black hole event horizon https://toegravitylightpaper2.quora.com
#3	Combining paper #1 and #2, discerning gravity's affect on light https://toegravitylightpaper3.quora.com
#4	Demonstrating redshift can exist in contraction events, the black hole. https://toegravtylightpaper4.quora.com
#5	Correlating small scale redshift to the large scale infinite redshift from the event horizon and distant disappearing galaxies. https://paper5.quora.com
#6	Special Relativity revisited, using SR to validate Ξ Theory proposal. https://thetoegravitylight6.quora.com
#7	Introducing VACIS, Variable Acceleration Contraction In a Spiral https://toegravitylightpaer7.quora.com and https://snelltoe.quora.com
#8	Accounting for Cosmological Redshift, the amount to account. https://toepaper8.quora.com
#9	Discussion of relativistic aberration and perceived at high velocities. https://www.quora.com/profile/Doug-Snell/Posts
#10	Dynamics of a Slowly Accelerated Photon, energy lost during curvature. https://toegravitylightpaper10dynamics.quora.com
#11	Foundation of Ξ Theory, a general introduction to Ξ Theory. tbd
#B	Black hole discussion, the arrow of time and the Universe. https://gravitylightpaperbblackholes.quora.com
#D	Density of Baryonic matter and the correlation to cosmological redshift. https://toegravitylightdensity.quora.com
#G	Gravity systems, the Universe being a sum of its contracting parts. https://toegravitylightpaperg.quora.com
#L	Light, Gravity's affects on the SoO and the timeline of Universe. https://toegravitylightpaperl.quora.com
#M	Method of science to help advance correct theory explanations. https://gravitylightpapermmethod.quora.com

- #Q Quintessence, dark energy hypothesis v Ξ Theory proposal.
<https://toegravityandlightq.quora.com>
- #R Redshift, doppler effect and gravitational redshifting, z axis, 3d distance.
<https://gravityandlightpaperredshift.quora.com>
- #S SoS- Sphere of Observation, introduce SoO.
<https://toegravitylightsoopaper.quora.com>
- #T Tests of the Lambda CDM theory proving it false/illogical.
<https://glpapertest1.quora.com>
- #V VACIS, the original explanation of VACIS and gravitational affect.
<https://snelltoe.quora.com>
- # Ξ Ξ Theory logo, Ξ Theory annunciation and brief description.
<https://toelogo.quora.com>
- #Snell'sToE Accounting for the cosmological redshift, Snell Effect.
<https://snellstoe.quora.com>

The papers are made available online and explain in more detail some subjects addressed pertaining to Ξ **Theory** and its explanations.

Statement to the Reader: Herein and elsewhere in the papers i reference the Gravity & Light paper by G&L# or #10pg5 for example. There are few equations, the math equations are noted by description rather than 'notations' or numbering. The reader must have diligence in distinguishing what is stated and presented as well as an understanding of the subjects discussed or referenced herein.

Additional note: the distances, measurements and such stated herein are based on current consensus theory and data as presently interpreted. So as not to confuse the issues, Hubble's expansion measurements etc are stated as reference and as so noted. The distant disappearing galaxies of 46 billion lightyears afar is example.

Humor Note: Occasionally i inject some dry humor of my choosing. Science does not have to be all dry and non-humerus. This is my Theory, i author it as i choose, and humor within science or life is apparent as much i am a parent.

The attention we pay children is attention we pay to our future.

Preface- **The Search for (E) Emily and Einstein**

Emily, my youngest of 5 daughters and of 8 children, expressed her interest in being an astrophysicist.

My heart quickened. Understanding a small bit about math, physics and astronomy, we both view the subject the same. With wonderment our Universe is spectacular, full of wonder as is Emily. Yet with physics and science, nothing is knowingly amazing, it is usually just science. Science is simple, it is the men and women of science and their stories that are amazing. Einstein is just one exulted example. My amazing Emily's simple interest in astrophysics was well after i had rejected the 'the universe is expanding at an increasing rate' theory as 'amazingly unbelievable'.

The Universe is expanding or expansion theory seemed illogical as soon as i understood it. And i would be damed if Emily was going to be taught a false science or 'false belief'. The rest is history of how this theory came about.

Recently concluding i should present the theory, Ξ Theory, in as a concise a paper as possible, making clear what i theorize. My intent has always been to make the understanding, Ξ Theory and any good theory, knowledge and science more accessible to more enthusiasts. This is specifically regarding being accessible and understandable to a greater audience, particularly our children.

Professions or professionals, take notice please.

Exposing the faults of scientific theory, law, politics, society, the blunders of our professions that intrinsically prevents advances and access and understanding is secondary to finding the solutions that are logical and worthy of teaching our children and, believing our selves. For what is the truth, if not empirical self evidence?

If a man could entwine empirical science belief to spiritual belief pondered as truth, could we believe it? Would we believe it? Is it possible our science contains more false beliefs, blunders, reducing its own faithful and therefor, faith therein?

The truth, in science and else where is paramount; to Einstein and his theory i owe much truth. The blunder of Einstein's cosmological constant pails in comparison to the errors within Lambda CDM model and Expansion Theory explanations employing 71% dark energy and 24% dark matter as unknowns to explain the Universe is expanding at an increasing rate in defiance of Gravity, logic, physics and the math. i find no truth in the Universe expanding defying gravity requiring unknowns to do so.

If ever a science or profession had painted its self in a corner, lamenting stagnation as if crying, dying while trying to get out of its self imposed contradictions, Expansion Theory is such.

Ξ Theory is the advance, opportunity, out of the corner. The search for the truth is as much for my youngest Emily as for Einstein and in his memory. In his wisdom, work and understanding Ξ Theory follows. Einstein is the Laureate of physics explaining 'e' energy. Little did we know the search for & following E led to sought after answers so exacting it refuses being unknown once known. As if a gift bestowed by a son to his mother, a morsel of truth at last who's comfort lingers, truth sweet as a mother's milk to her newborn, a necessity.

Admittedly the old astro-cosmos science profession says 95%+ of their theory's Universe is unknown, explanation unknown. How and why could any science or profession, with all the trappings and intellect obviously present, have such a large breath of unknowns in its explanations of the Universe it proudly claims to explain?

The search proceeds.

Section One- **The Search and Consensus**

Using a scientific method i isolated and confirmed the culprits (see #M), cosmological redshift and, the consensus.

Naively thinking all i had to do was yell the sky is falling “the Universe is not expanding, the Universe is contracting” and then the consensus astro-cosmos science professionals would see the obvious logic and follow so to solve why/how etc. etc.

Imagining, great, my works is done, lets go have fun.....celebrate.

And by such, like a good father, i would have saved my daughter Emily from a perilous future in an astrophysics’ education fraught with fallacies. In some ways i would also have vindicated Einstein as not such a blunder after all dear forefather Albert our Nobel prized theorist, the Laureate of all Laureates. Vindicating Einstein via the advance as a clear understanding of cosmological redshift resonates from **Ξ Theory and Relativity**.

The sky might be falling chicken little me, so, the Universe is contracting yet, my work had barely began. Changing a consensus, the other culprit against change~advance via new theory, within a large science profession may start with one man but consensus is only obtained by a consensus of many with power, energy and where with all to effect change to force change and erred consensus.

A consensus when wrong, is a condescending concoction of intellect hard understood, even harder stood under, and rarely better busted, bested & stood atop.

What is the consensus of the astro-cosmos science discussed?

Section Two- **Lambda CDM and Expansion Theory**

Lambda CDM- Clearly the consensus currently amongst astro-cosmos scientists is that the Lambda Cold Dark Matter theory is correct, and as such, the Universe is expanding at an increasing rate as Gravity is hypothetically opposed by Dark Energy. Hubble's expansion, Hubble's data, Hubble's parameter, Hubble's outflow, and other Hubble component abound within Expansion Theory per se. Hubble's expansion is based on cosmological redshift.

Briefly, Lambda CDM is referred to interchangeably with Expansion Theory by myself. It is the popular theory of 'the Universe is expanding at an increasing rate', caused by dark energy on the large scale Universe. The expansion is currently believed to be about 69-74 kilometers per second per megaparsec, different sources claim different expansion rates based on interpreted data..

The expanding Universe, aka Hubble's expansion, is hypothetically being done in defiance of known gravity by a force called 'dark energy', which is believed, required, to be 71% of the total Universe. Many proponents of Lambda CDM explain the Hubble expansion as 'space itself is expanding' or 'spacetime' is expanding.

Regardless of the explanations of the Universe expanding, there are many issues with claiming expansion of the Universe. There are too many unknowns and issues for Lambda CDM or expansion theory to be acceptable for myself.

The search for why Lambda CDM theory exists and why 'the universe is expanding' led to its origins in cosmological redshift and Hubble's data, aka Hubble's expansion.

Lambda means zero, which is what Einstein's (equation) Cosmological Constant became, zero, as a result of Hubble's redshift. The cosmological constant was inserted into Einstein's equation as an opposing force to keep the Universe from naturally contracting onto/into itself, ergo with a cosmological constant having a 'static' Universe of stable orbits.

The History- Briefly some more history, Einstein presented his General Theory of Relativity, and Special Relativity in the early 1900's. Through his math realizing the implications, that the Universe would via Gravity collapse in on itself, Einstein intuitively included a fudge factor allowing for a 'static' Universe. His equations

with a cosmological constant described a static Universe that was neither expanding or contracting, it was merely static with stable orbits. Einstein did this why?, perhaps he was attempting to match the observations: stable static orbits and a stable galaxy and Universe.

Einstein called the fudge factor the ‘cosmological constant’, opposing gravity to keep the Universe ‘static’.

In 1929 Edwin Hubble observed and proved cosmological redshift was being observed from distant objects of common light emissions. He interpreted that as the ‘universe is expanding’ and Einstein capitulated and, Einstein removed his Cosmological Constant from his equations calling it his greatest blunder. Perhaps now you can understand why vindicating Einstein as thinking his cosmological constant was a ‘biggest blunder’.

Through this theory and its application, we might conclude it was not Einstein’s “blunder” after all; and to Einstein this work tributes the advance of science. Did Einstein know the error and simply let what has happen, happen. i submit he had the tools, intellect and everything else to halt the error of expansion, but somehow he felt not inclined. Perhaps why is the same as his struggle within the profession(s) is as much the professions fault, as is expansion theory having a consensus. Lest this theory being as too the builder Einstein had best success, the success is from his work in the face of science’s stockholder, the consensus.

Current- In 1998 the cosmological redshift i.e Hubble’s expansion issue was more fully addressed and was concluded by and for the consensus, the Universe was expanding and expanding at an increasing rate. The Hubble Space Telescope Key 10 Project estimated the expansion rate was 71kilometers per second per megaparsec of space. There has been further studies which now peg the expansion at 69-74km/sec/mpc.

That is basically where the science consensus is today, July 2017.

Cosmological Redshift CR: From there the search begins for the cause of the effect. Then was isolated cosmological redshift as the mis-interpreted expansion of the Universe. Could the science be so amiss?

Cosmological redshift was the sole cause of the belief that the Universe was expanding, called Hubble’s expansion or Hubble’s outflow. Again, this started with Hubble’s data in 1929, ergo the reference in the ‘names’ of Hubble. Expansion

theory, Lambda CDM is based in cosmological redshift, historically and mathematically.

Clearly, the light we observe from the Universe is what gives us observation and our perception, simply, we observe and interpret the light and conclude therefrom.

That light observed presents cosmological redshift, meaning, the light observed is redshifted.

The Lambda CDM theorists, expansion theory, interpret CR to mean the Universe is expanding. We perceive from what we observe, and, light is how we observe. Hubble observed redshift in 1929 and perceived expansion because of 'doppler effect', and won the day well supported. Einstein removed his cosmological constant thinking it was his blunder. That a brief history, nuff said.

Present-July 2017 summary- The Lambda CDM model and the universe is expanding theory have prevailed since Hubble found redshift and, that is consensus within the sciences currently.

The main premise behind the Universe is expanding lays in cosmological redshift within the light we observe from the distance particularly distant disappearing galaxies.

Expansion theory, the consensus preferred explanatory theory, is the Universe is expanding at an increasing rate. We observe distant disappearing galaxies, infinitely redshifted from the entire sphere of observation all around us, as if we are the center, why?

Why? - simply the best question, ever.

Section Three- **Cosmological Redshift, Light Observed**

The cosmological redshift in light observed increases as the distance of the object observed increases. We have data, Hubble's data, that proves this as an observation. Light observed coming from the emitting source to us here on earth is redshifted, we call it cosmological redshift. How do we know this is simple, we know common sources of light emissions, the common source/object emitting the light, and can observe the more distant common sources have increased redshift.

There is no cosmological redshift observed locally, and, cosmological redshift increases as the distances observed increase.

Clearly there is some correlation between distance and cosmological redshift, and we will raise this conjecture to a reliable finding.

At an apparent distance of 46 billion light years there is infinite redshift, and, the galaxies disappear. We can not see or observe past that 46 billion light years distance. Therefore: No visible light reaches us from beyond 46 billion light years.

We can, and do, distinguish between doppler redshift and cosmological redshift. Doppler redshift is correctly understood and accounted for properly for the most part, due to a 'local' motion.

Cosmological redshift has our attention, being a direct address of **Ξ Theory**.

As interpreted by Lambda CDM theory, the disappearing galaxies are receding at light speed from our Observable Universe, propelled by dark energy. And, they are disappearing in the full sphere of observation around us, as if we are the center and the Universe is expanding from us.

Lambda CDM explains the disappearing as galaxies receding at light speed via dark energy opposing gravity. Or, dark energy opposing gravity to make galaxies recede at light speed. Can that possibly be true? In physics it is taught: to accelerate mass (matter) to light speed requires infinite energy. So how can galaxies be receding at light speed opposing gravity?

Section Four- Ξ Theory

Ξ Theory explains distant disappearing galaxies are not galaxies receding at the speed of light from what we observe.

The distant disappearing galaxies are due to gravity's affects on light.

Gravity's affects light many times over great distance, and gravity's cumulative affects on light over vast distances is causing light to be infinitely redshifted.

Gravity affects light on the x, y and z axis is a premise of **Ξ Theory**. Infinite redshift affect anywhere is the same infinite redshift affect everywhere. (see Special Relativity)

Infinite cosmological redshift is simply gravity's affect on light, or, infinite redshift is doppler effects, either or. Infinite redshift exists at the event horizons of black holes and distant disappearing galaxies (see paper #4 and #5). To have infinite redshift being doppler redshift, an the objects observer and observer combined must be receding at light speed.

The infinite redshift at the event horizon of a black hole is obviously gravity's affect on light. The Schwarzschild Radius is the mathematical explanation for such.

Ξ Theory explains infinite redshift is the same, Special Relativity, at the event horizon or at the distant disappearing galaxies, and, cosmological redshift is merely gravity's affect on light.

Clearly CR is in the light observed, and it must be explained logically and within the laws of physics for **Ξ Theory** to be valid and explained properly, and understood properly.

The light emitted from common sources, be they SN1a SNII or entire galaxies, is light emitted as light common to the source. Yet, the common emitted light is observed with CR with increased distance, ergo the light appears not common, it appears redshifted more with distance: we observe CR and we will raise this conjecture to empirical data observed

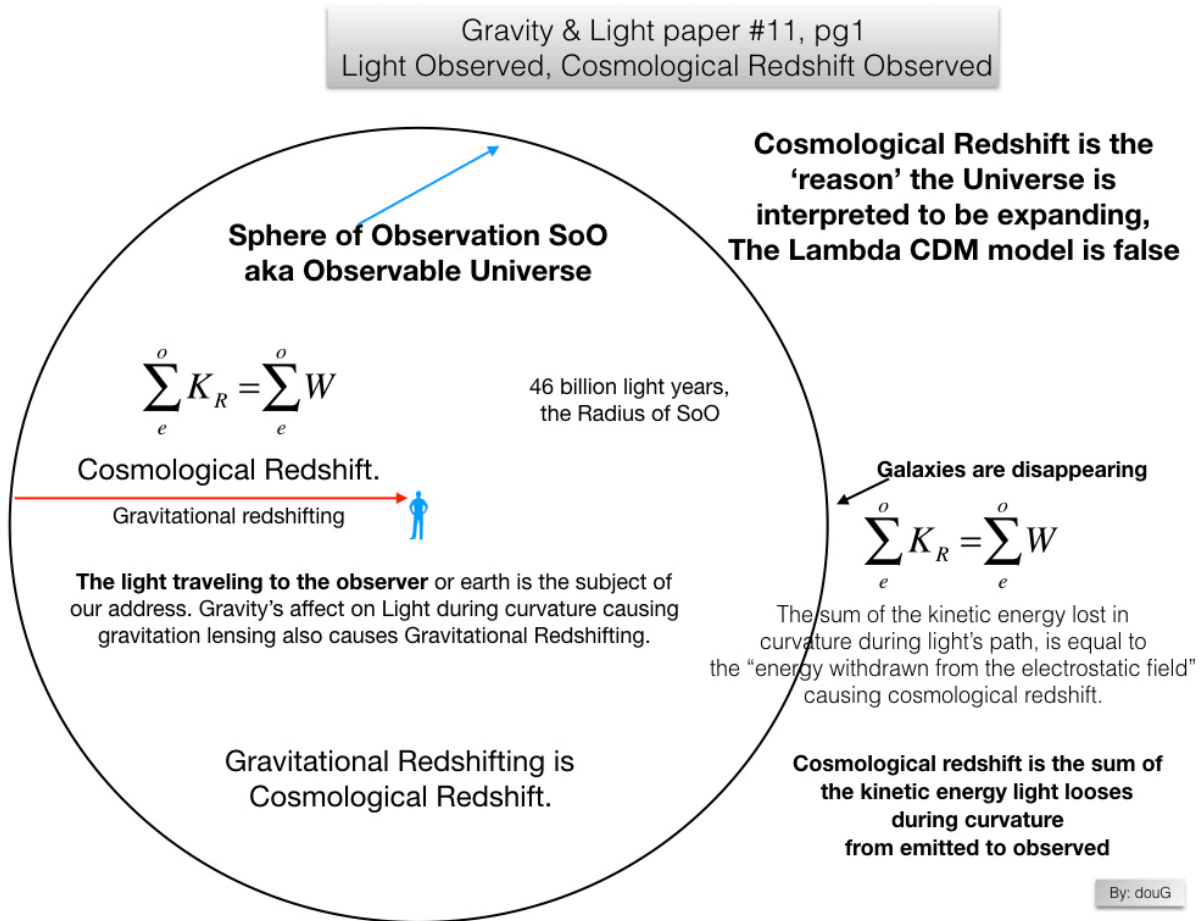
The CR observed is interpreted by Lambda CDM as receding galaxies at a rate of 71/km/sec/mpc. Culminating in what expansion theory explains as the

disappearing is whole galaxies receding away at light speed in the entire sphere surrounding us, 360 degrees by 360 degrees sphere, everything receding at light speed....defying gravity propelled by dark energy.

Can that be possible?

Section Five- Sphere of Observation SoO

Clearly light observed is the subject that has our attention:



#11pg1

The light we observe, observed by any observer, travels to the observer and has a unique path to the observer. The path of light is of great interest to us. The dynamics of what happens to light during its path to us, observation, is crucial to understanding **Ξ Theory**, and Gravity & Light.

This is an exercise in understanding the dynamics of light emitted from a source(s) traveling to the observer, observation, understanding our Sphere of Observation.

Pause a moment and ponder precisely what we observe, via light, as a sphere of observation, a sphere of light per se, rather than the Universe and space occupied with baryonic matter. We observe the baryonic matter via light, and, the baryonic matter via gravity affects the light we observe. This exercise in preponderance regards light, the photon and, our Sphere of Observation.

Simply, what we observe is via light, light that has went through continuous affects through its environment from its emission until it is observed by any observer.

The sum of the gravity affects on light is one subject of the **Ξ Theory** advance, the Sphere of Observation is also.

What we observe clearly is presented via light that reaches to us to be observed.

The path of the light has our attention, as does all light observed within our sphere of observation.

A new term, SoO Sphere of Observation, is introduced to facilitate **Ξ Theory** discussions. The SoO, Sphere of Observation, is from the point of view of the observer, it is a sphere of everything visible within the observer's SoO, it consists of light reaching the observer.

The SoO is Aka the "Observable Universe", a terminology that may lead to misconceptions and confusion. We simply shall understand light from a 'light path traveled' concept within the the sphere of observation; to facilitate explaining and understanding **Ξ Theory** and light. The SoO term emphasizes light, while it also eases the transition of understanding was is visible and what not visible of baryonic matter of the Universe.

When we think of what we observe of the Universe as a sphere of light reaching us, SoO sphere of observation, we can easily turn the attention to what happens to light within and outside our SoO.

The same as light's effect inside and outside the event horizon of a black hole; the horizon or disappearing effects is merely gravity's affect on light, light within or outside the SoO. Through our SoO, through which light can reach us to be observed, **Ξ Theory** becomes easily understood, logical, while fitting the observed data well.

The Schwarzschild Radius is one example of gravity's affects on light, the equation of cosmological redshift is also, merely a Sum of the lost mass of light due to gravity's curvature of light.

Ξ Theory explains the accumulated gravitational affects on light during its path to the observer, that is the distinguished cause of the cosmological redshift observed. Therefore CR exists within our SoO, with distance CR increases until light is infinitely redshifted, and therefore the image becoming outside our SoO.

The discussion comes now to the Sum of the gravitational redshifting caused by Gravity affects on light. Why use a equation to describe cosmological redshift?

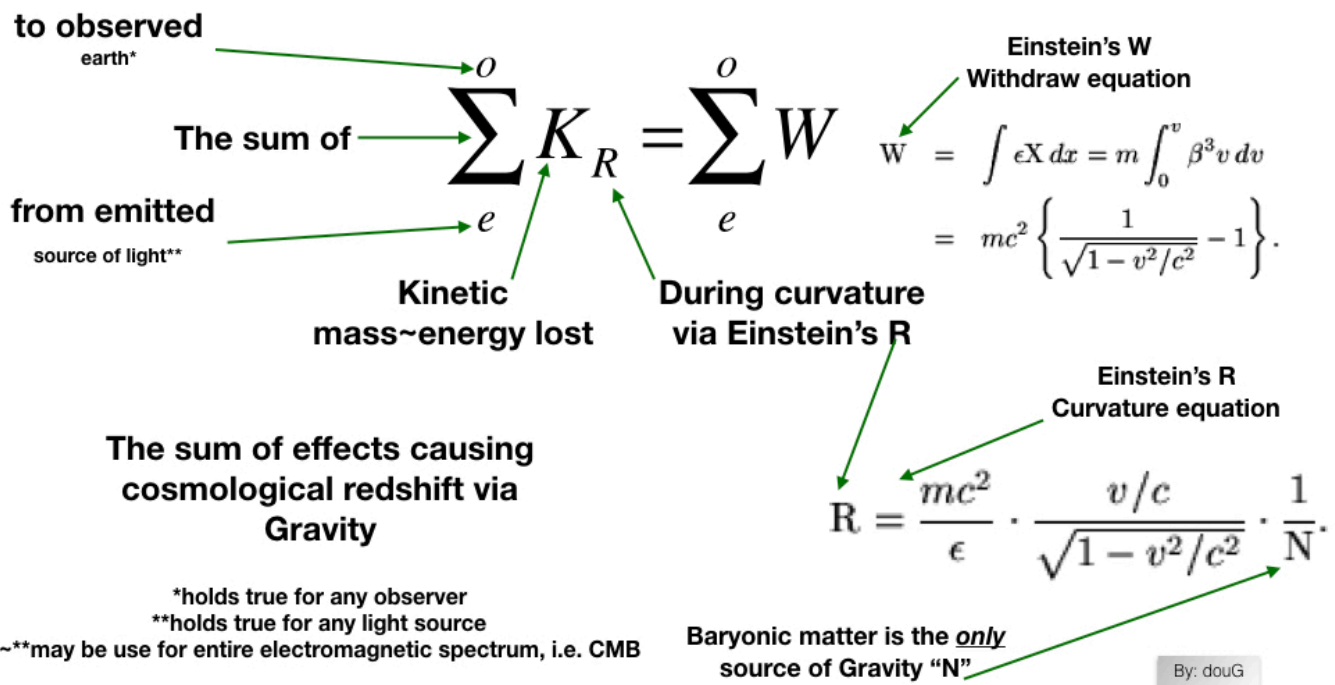
Section Six- The Sum

Simply Ξ Theory explains that observed light less the sum of the cosmological redshift leaves us the emitted light. The sum is a reoccurring theme in Ξ Theory, the Universe is a sum of its parts #Gpg2.

The sum of the cosmological redshift is the sum of the energy(mass) lost during curvature from the light emitted until observed. The energy lost from curvature could be one event or more, it could be millions of curvature events or enough to infinitely redshift the light.

Gravity & Light paper #11, pg2
Cosmological Redshift Equation

Cosmological Redshift Equation
the sum of the mass~energy lost
to light during curvature
from emitted (source) to observed (us)



#11pg2

Using a common source light at the time of light being emitted, **Ξ Theory** clearly explains what happens to light: 1- from emission 2-to observance (see paper #10, #L and #R). 1-from emission is easy to understand, a common source of light is used. 2- to observance has our attention.

Ξ Theory reconciles observed light with light emitted, to reveal a consistent and contracting Universe, requiring no dark energy (unknowns).

Ξ Theory explains our Sphere of Observation SoO is simply light observed that reaches us. Our SoO is the sphere of light reaching us without gravity's accumulated effects being great enough to prevent the light reaching us i.e. preventing observance.

The distant disappearing galaxies are where light reaching us is in the process of not reaching us because of the increasing gravitational affects on light, caused by a increasing gravity affect, caused by a contracting Universe. In a contracting Universe the cumulative affects of gravity are increasing, naturally

If distant light does not reach us, the image disappears, it is infinitely redshifted. This is clearly as a result of accumulated lost energy/mass during curvature of light in route towards the observer; rather than galaxies receding at light speed.

The accumulation starts after emission, and occurs by passing in the presence of gravity until observed. Every gravitational force in the presence of light has an effect. In our example, the photon is traveling on the z axis, and any gravity acting on the photon other than perpendicular to the z axis path, is not considered a cause of cosmological redshift. Why? The Universe is homogenous and entropic on a large scale, therefore gravity affects to the photon on the z axis are presumed negated by each other for our explanations. There may be examples of where z axis affects of gravity may need considered.

The sum of the gravitational affects on light acting perpendicular to light's z axis travel exhibits the cosmological redshift observed. In an equation form we can exhibit the cumulative affect of curvature on light. Using Einstein's $R =$ curvature equation, and, using the kinetic energy $W =$ withdrawn mass during curvature equation, we can explain CR.

Clearly light at observance less the sum of the cosmological redshift is the light emitted by the known common source. We will raise this conjecture to a well founded rule.

In the case of cosmology and measurements, spiral galaxies present a good/ common source of emitting light as does Supernova 1a and II. All three are used in redshift studies. Yet, do they support what is proposed by the Sum of energy lost during curvature and **Ξ Theory**?

Section Seven- e Emitted Light verses o Observed Light

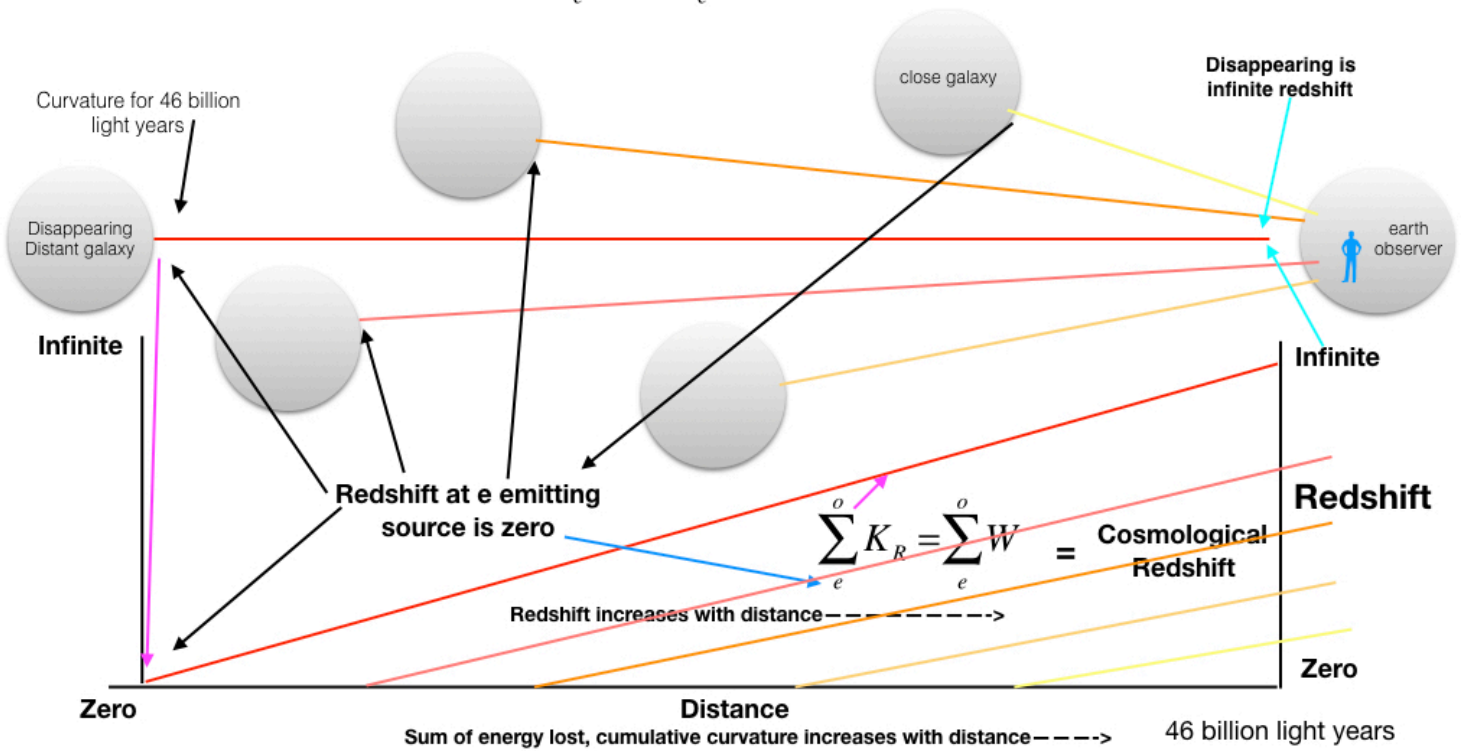
Gravity & Light paper #11, pg3
 Cosmological Redshift Observed, Affects

By: douG

Gravity Affects Light: Gravity & Light

Cosmological Redshift= the sum of the mass~energy lost by light in curvature during light's path to the observer

$$\sum_e^o K_R = \sum_e^o W$$



Insert- #11pg3

Using galaxies, SN1a, SNII, or similar light source depictions as in the above diagram #11pg3 CR can be distinguished and quantified. With well defined coordinates cosmological redshift can be accurately described. Using co-ordinates of light emitted and observed, the redshifted light or cosmological redshift is the focus of the **Ξ Theory** equations. To account for the accumulated energy lost to the light during curvature, the Sum equation, from e emitting source to o observation, of the Kinetic energy lost during curvature is presented.

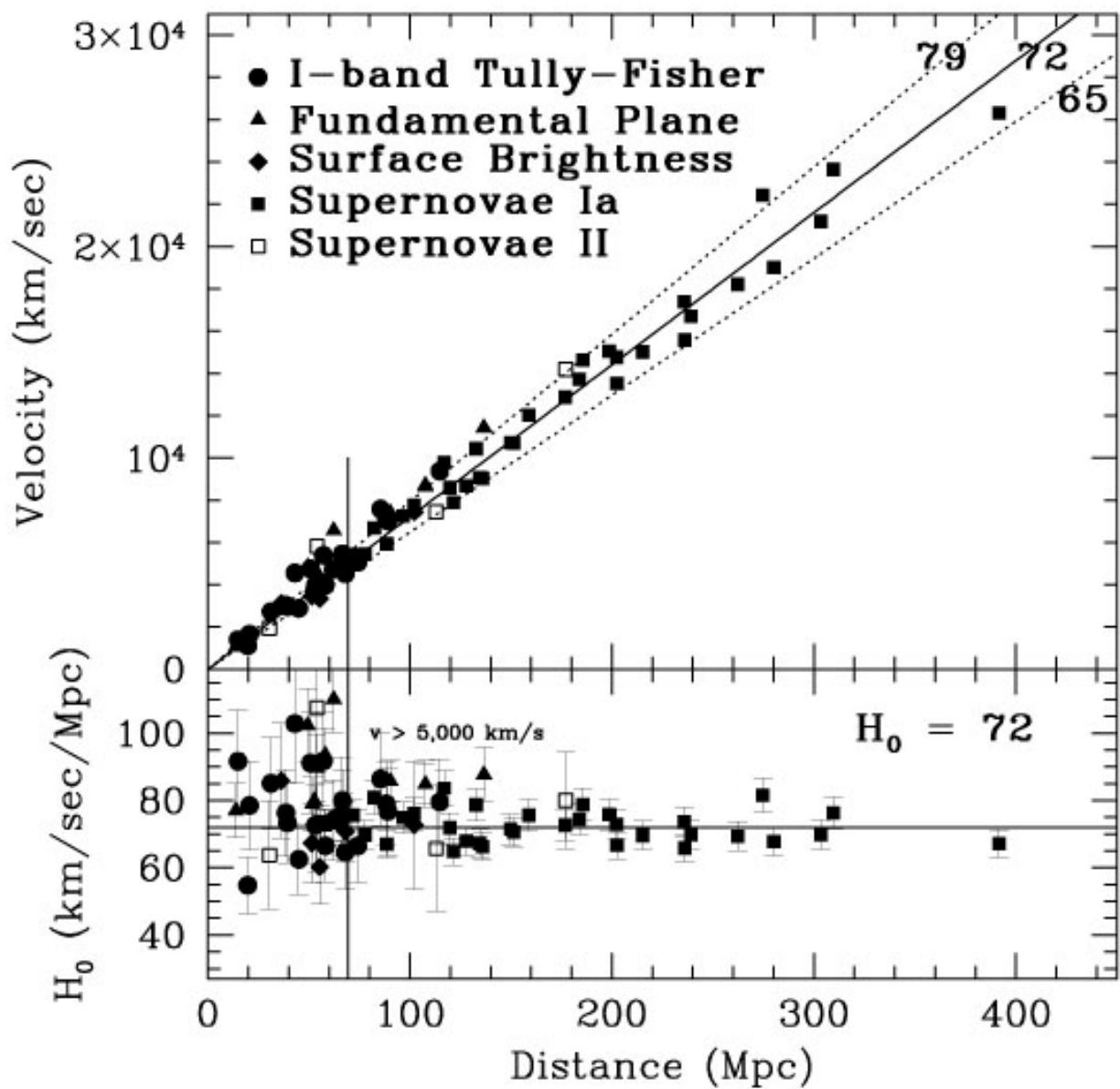
This is presented simply by the diagram's representations: 1-the light observed from a common source from a distance is redshifted as distance are increased, (color coded) 2-the equation or Sum of gravity's affects on light during the light's path from the common emitting source to the observer is clearly correlated.

Mass lost is described in Einstein's equations R=curvature and W=withdraw modified as noted. i use mass and energy interchangeably in my discussion as curvature of light presents a perfect demonstration of the interchanging of matter and energy in an event. Essentially matter is energy when in light form, the photon ie. the electromagnetic spectrum.

Cosmological redshift is the 'sum' of the 'Kinetic' energy lost during 'R'=curvature from the 'e' emission to the 'o' observer.

This formula matches the observed data. The common source of light, observed with cosmological redshift is due to gravity's affects rather than increasing distance Lambda CDM claims.

Deviations- The deviations of plotting light sources and distance with redshift observed is explained by the sum of curvature affect. This is superior to Lambda CDM expansion explanations of uniform expansion.



Insert- tully-fisher graph with best fit line to fit observed data of common light sources. Credit HST Key 10 Project

The **Ξ Theory** Sum equation is more precise than the Hubble expansion best fit line and explanations with a uniform spacetime expansion. The Expansion Theory explains via a best fit line to explain the CR observed, explaining space is ‘uniformly’ expanding, or ‘spacetime’ is expanding uniformly.

Ξ Theory explains precisely why deviations from the best fit line occur, clearly being a sum of the gravitational affects on each source light’s path and unique to the path of the source light, not particularly the distance more so based on proximity to gravitational affects. This can be tested and confirmed practically with current technology and experiments.

Section Eight- **Curvature and Energy Withdrawn**

Clearly we have isolated the perception of expansion of the Universe to light observed, cosmological redshift, how that occurs had our attention, and we clearly have shown an mass or energy component.

Using Einstein's equations from Special Relativity, the R=Curvature equation is used to describe the kinetic motion, the energy or mass of light the photon, and Einstein's W=withdrawn energy equation of section10 is used to describe the withdrawn energy from the photon.

Via the employ of the two equations and as modified the 'A' equation, clearly curvature of light presents a unique opportunity to explain cosmological redshift. As light is matter in an energy form, the photon.

E Theory explains via the Dynamics of a Slowly Accelerated Photon, paper #10, and specifically how curvature of light's path by gravity is the main cause of cosmological redshift observed. Clearly, this is the only thing it could positively be while, explained perfectly within our known physics: Einstein's Relativity.

Gravity & Light paper #11, pg7 Equations.

'A' equation

$$\frac{d^2x}{dt^2} = \frac{\epsilon}{m\beta} \left(X - \frac{v}{c} N \right)$$

$$\frac{d^2y}{dt^2} = \frac{\epsilon}{m\beta} \left(Y - \frac{v}{c} N \right)$$

$$\frac{d^2z}{dt^2} = \frac{\epsilon}{m\beta} \left(Z + \frac{v}{c} M \right)$$

A modification of the equation, to position the magnetic N (gravity) force on the x and y axis, while the path of travel is moved to the z axis, and having the electromagnetic spectrum energy M attributed on the z axis.

'R' Curvature equation

$$R = \frac{mc^2}{\epsilon} \cdot \frac{v/c}{\sqrt{1-v^2/c^2}} \cdot \frac{1}{N}$$

Einstein's original equations: R= Curvature equation

referred to as 'A' equation Special Rel Section 10

$$\left. \begin{aligned} \frac{d^2x}{dt^2} &= \frac{\epsilon}{m\beta^3} X \\ \frac{d^2y}{dt^2} &= \frac{\epsilon}{m\beta} \left(Y - \frac{v}{c} N \right) \\ \frac{d^2z}{dt^2} &= \frac{\epsilon}{m\beta} \left(Z + \frac{v}{c} M \right) \end{aligned} \right\}$$

'K' and 'E' equation

$$K_R = E_R = mc^2 - m_0c^2$$

The kinetic energy, mass, required to move one photon the height of the arc of the curvature of light's path.

'W' Withdraw equation withdraw energy shown on z axis, Z+v/cM

$$W = \int \epsilon Z dz = m \int_0^v \beta^2 v dv$$

$$= mc^2 \left\{ \frac{1}{\sqrt{1-v^2/c^2}} - 1 \right\}$$

Cosmological Redshift = $\sum_e^o K_R$

The sum of all the Mass(energy) lost during curvature from the time light is emitting until the light is observed

Where:
 e= light emitted wavelength t=0
 o= light observed wavelength
 K= the kinetic energy required to move one photon the height of the arc of the N magnetic-gravitational curvature from either the x or y axis or any combination thereof.
 R= the curvature induced by each N source, (magnetic) gravitational affects on light path, from emission to observance.
 N= the object of gravity, baryonic matter
 M=electrostatic portion of photon, equal to N on x and y axis

'Sum' equation

$$\sum_e^o K_R = \sum_e^o W$$

The sum of the kinetic energy lost during curvature along the duration of the light's path, is equal to the "energy withdrawn from the electrostatic field" "put down as equal to the energy of motion W of the electron".

Einstein's original: referred to as W withdraw equation:

$$\begin{aligned} W &= \int \epsilon X dx = m \int_0^v \beta^3 v dv \\ &= mc^2 \left\{ \frac{1}{\sqrt{1-v^2/c^2}} - 1 \right\}. \end{aligned}$$

By: douG

Insert- #11pg7 Modified equations and Einstein's original equations found in Special Relativity and General Theory of Relativity

We start with the 'A' equation of Einstein's Special Relativity section 10, and the modify it by having the path of travel of light denoted to the z axis, and, having gravity's act or affect perpendicular to the z axis, being a force acting on the photon's path from the the x or y axis. See #11pg7 above, $-v/cN$ in the equation.

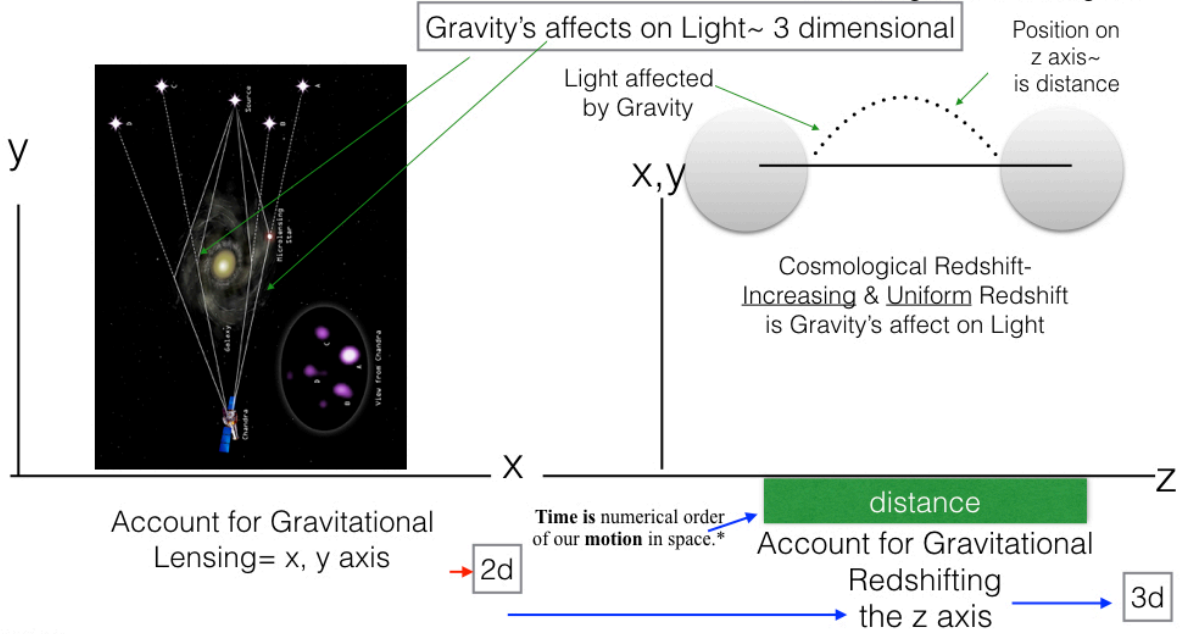
The x y axis affects is the gravity affecting light during curvature, it is gravitational lensing we account for presently. Accounting for the gravitational lensing is well considered.

Quantifying the lost energy during curvature via the z axis is a **Ξ Theory** advance.

We account for gravity on the x and y axis as gravitational lensing, a 2d presentation of light's path and therefrom position. One of **Ξ Theory** advances is accounting for gravity's affect on light's path via the z axis, ergo 3d. See G&L#R, #L, #10.

Accounting for Gravity's affect on Light → **E Theory**
=where is the object on the x,y,z axis ?

Contracting at an increasing rate



By: douG

#Rpg2, 2d to 3d explanation of Gravitational Lensing 2d, and 3d z axis is cosmological redshift.

Pondering the gravitational lensing affects are on the x and y axis or position being in two dimensions, and, now **Ξ Theory** advance proposes a z axis accounting also. 2 dimensional is a position 2d or up-down-left-right, add to this the advance or plus z axis is distance being to and fro, ergo 3d accounting for gravity's affects on light proposed by **Ξ Theory**.

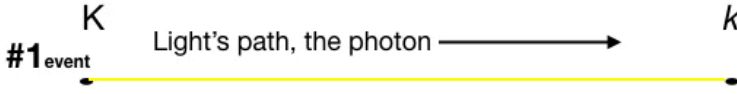
The subject of the Gravity & Light papers #1-3, curvature of light's path verses gravity's path, we discussed concerning distances perceived or metric distances verse light's distances. The extreme example is the metric distances and light's affect near a black hole, extreme gravity affects on light.

Gravity & Light paper #11, pg4
Cosmological Redshift, Baryonic Matter Density

By: douG

K- co-ordinate of light (photon)
in space from emission source

k- co-ordinate of light (photon)
in space at observation



Light's path, the photon →

K or k are co-ordinates
having no affect on light

No **N**, no curvature, no lost of energy, no cosmological redshift



$$R = \frac{mc^2}{\epsilon} \cdot \frac{v/c}{\sqrt{1-v^2/c^2}} \cdot \frac{1}{N}$$

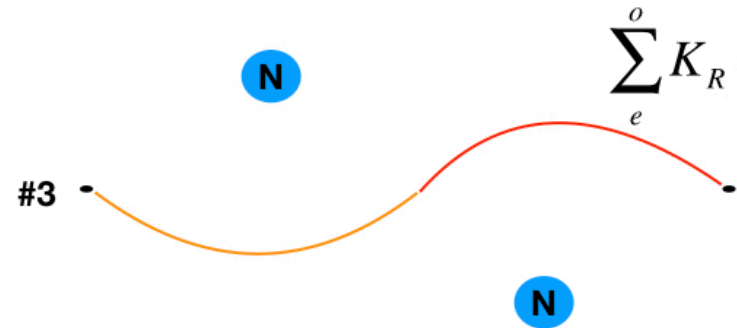
Curvature is caused by a gravity source present and affecting light's path

#2 One **N**, single curvature, lost of energy, cosmological redshift = $1 \times W = \int \epsilon Z dz = m \int_0^v \beta^2 v dv$

Lost of energy by the photon occurs during curvature. The lost is observed as cosmological "redshift"

N = source of gravity, baryonic matter

$$= mc^2 \left\{ \frac{1}{\sqrt{1-v^2/c^2}} - 1 \right\}$$



$$\sum_e^o K_R = \sum_e^o W$$

Increasing redshift is caused by increasing 1-affects of Gravity, 2-density of baryonic matter.

Increasing the Density of baryonic matter, and, the N sources of gravity, increases the redshift.

Two **N**, double curvature, twice lost of energy, cosmological redshift=2x

**A Contracting Universe
observed with
increasing redshift.**

Insert- #11pg4, demonstration of (N) gravity's affects on the Photon's path, curvature; with the correlation to 'Density' indicated, and a contracting Universe deducted conclusion.

Event #1 from #11 pg4 above depicts light traveling from co-ordinate K to co-ordinate k . There is no gravity present and therefore light's path and travel is unaffected. Simple progression of gravity's affect on light's path reflects:

Single curvature: Event #2 introduces one gravity source, (N), is introduced acting on light's path. The gravity is acting perpendicular to light's path, that perpendicular kinetic energy is the only kinetic energy discuss/considered. Ergo, gravity (N) acting from the x and y axis perpendicular to the photon's path of travel on the z axis. The (A) modified equation is how **Ξ Theory** expresses the energy quantified; it is the energy to move the photon the height of the arc of the caused curvature to lights path.

Multiple curvature-

Gravity in the diagrams and in Einstein's and my equations is the via the source N, N is the source of gravity acting on light's path, and the N in the equations.

Event #2 clearly demonstrates one curvature affect from one source.

Event #3 introduces two sources of curvature perpendicular to the z axis travel of the photon. Notice the second half of the light path in Event #3 is a darker red than the first half. such is how redshift transpires, yet gradually. The deductions logically can be made from this; the further the path of light the more curvature events in a homogenous isotropic Universe, ergo more redshift with distance, plus, as density (N sources of Gravity) increases, curvature increases and therefore cosmological redshift will increase.

This curvature of light's path causes loss of energy from light, the photon; and we ask, is this the practical explanation fulfilling the physic's requirements of the Laws of Conservation etc? See G&L paper #10 for specific details.

Section Nine- **Conservation of Energy Lost, The Energy Transfer**

The loss of energy, the mass lost by light during curvature, is lost to the object of baryonic matter which is the source of gravity acting on the photon's path, ergo conservation of the energy lost by the photon.

Simply, during curvature there is a transfer of kinetic energy from the photon, we will raise this conjecture to a postulate.

The energy is transferred from the photon to the object source of gravity, observed as an equal kinetic energy as being an equal motion of the object toward the path of the photon.

The Conservation of Energy is simply solved with Newton's 3rd law cause and affect, with equal affect on both: the photon via light's path and the object of gravity acting on light's path, equally affected by the event and their proximity.

Newton's 3rd Law: "For every action, there is an equal and opposite reaction. The statement means that in every interaction, there is a pair of forces acting on the two interacting objects. The size of the forces on the first object equals the size of the force on the second object."

We will raise this Conservation of Energy during curvature to a postulate.

Clearly there is a cause of light's curvature, gravity. Gravity affects light. We will raise this conjecture to a postulate, accepting both gravitational lensing and gravitational redshifting as observable and testable events/data.

The Conservation of Energy/Mass: Brief history- For years the energy/mass lost by light has been attempted to be explained via 'radiation', 'Bremsstrahlung' and a host of there attempts similarly to no avail. It has been theorized that no energy is lost in curvature of being in and out of a gravity well, which is a falsifiable conclusion. Observed by other objects affected by gravity, be it an elliptical orbit or else, the object or light in proximity of gravity of another gravitational object/source, transfers energy between the two instantaneously and observed as curvature or some 'equal' affect=motion of both simultaneously being instantaneous with the other.

Light, the photon, is clearly affected by gravity, on the x and y axis being gravitational lensing, and affected on the z axis, gravitational redshifting ergo cosmological redshift.

Clearly this is quantifiable with the employ of Einstein's relativity, an instantaneous transfer of energy seen as a simultaneous affect to the object and light, energy~mass transferred simultaneously.

We have clear examples of curvature in existing orbits, and the equations/math of relativity would indicate an existing simultaneous force existing between such in orbits or else. Quantified as instant transfers of energy between the two; observed simply as a curvature orbit/affect and no obvious transfer of quantifiable energy except by motion, curvature or orbit. Curvature is an example of gravity's affect, creating effect and equal effects instantaneously on two or more objects. The instantaneous transfers of energy~mass quantified by the equations, and, the affects on light being observed as cosmological redshift.

The curvature of light, the photon's path, presents a unique opportunity to qualify the affect of the transfer of energy/mass. We observe the lost energy/mass of the photon as cosmological redshift, the z axis affect, and, gravitational lensing, the x and y axis affect.

In this paper's example the curvature of light by gravity, being understood well as gravitational lensing effects on the x and y axis, is advanced by understanding and accounting for the z axis affects, which corrects the distances.

The Lambda CDM presents differently, it states the falling into and climbing out of the gravity wells of spacetime has little to no cumulative affects on the photon, and thus the redshift and CR means a receding Universe or, baryonic matter being galaxies receding at light speed, causing disappearing.

This Lambda CDM erred conclusion is solicited by the Laws of Conservation concerning 'energy' or 'mass' lost by the photon during curvature, as no one has previously produced theoretically a conclusion showing energy lost by light in curvature as does **Ξ Theory**. The stymie is over, cosmological redshift can be interpreted properly with **Ξ Theory** and its equations.

Theoretically **Ξ Theory** solves this issue simply, logically and mathematically, and it is testable and verifiable.

Clearly light's lost of mass/energy during curvature is caused by affects of gravity.

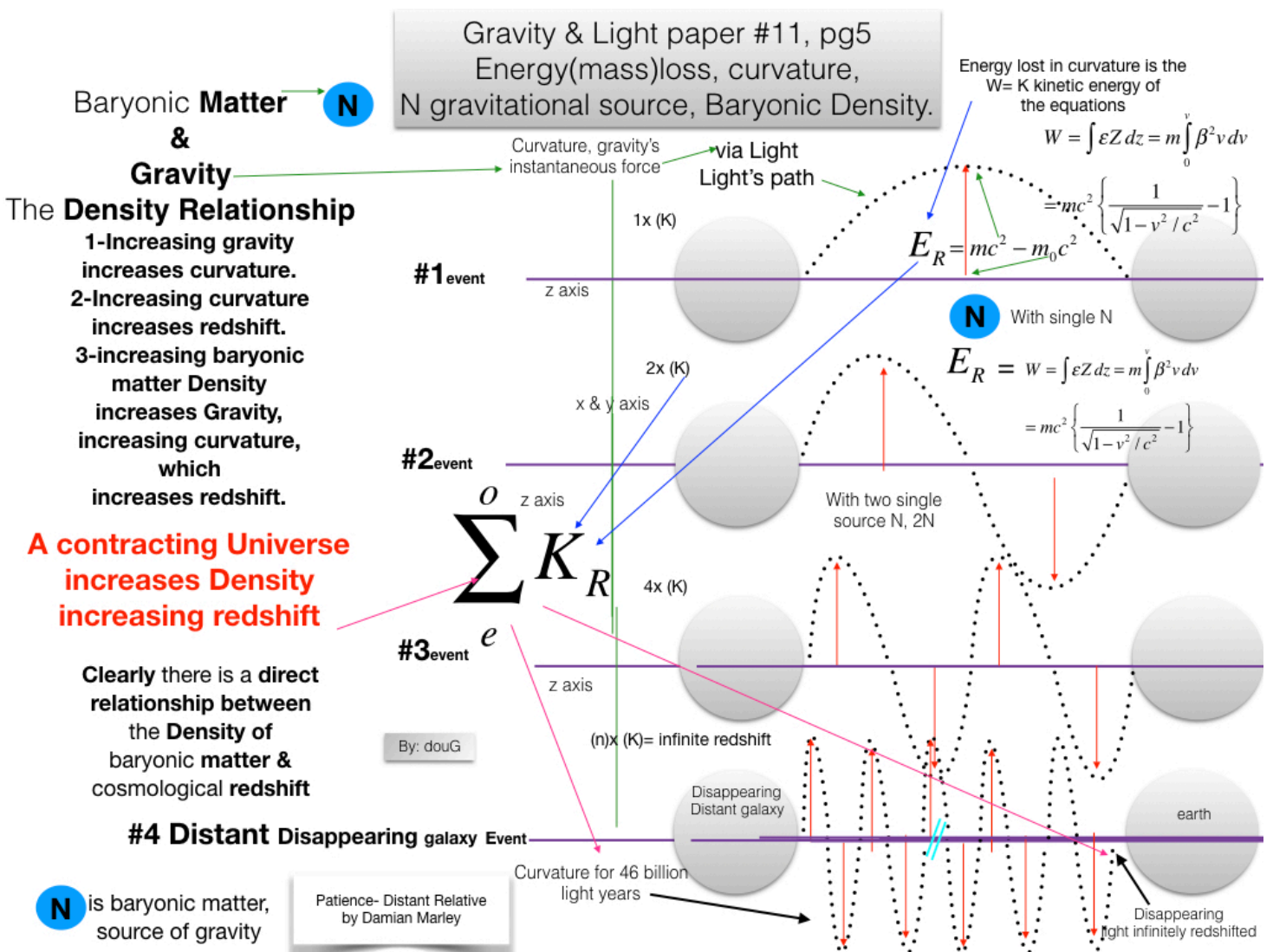
We isolate the event to light passing between two well defined co-ordinates plus one gravity source in proximity, factually there are but just two actors present: 1- light traveling the z axis and 2-N the source of gravity acting perpendicular to light's path. Actor one being light, actor two being N- the source of gravity, ergo clearly cause and effect equally between two actors.

The single curvature causes a single lost mass=energy to the photon, observed as redshifting of the light. Simply presented and easily understood, one, two, three, four or many, the cumulative affect is the sum of the cosmological redshift observed caused by lost of mass in curvature. Yet, if we increase the baryonic matter to two sources within the same distance and double curvature, does that merely double the redshift observed?

Section Ten- Light's Accumulated Mass Lost and Disappearing Galaxies

Clearly baryonic matter is the source of gravity affecting light, causing curvature.

Insert #11pg5, demonstrating the energy to move the photon the height of the curvature arc of a single N gravity affect, then two N gravity affects, four gravity affects then, event #4 infinite kinetic energy W withdraw is disappearing galaxies.



Our conjecture is: Increasing the Density of Baryonic in the Universe and nearby light's path and thereby increasing gravity's affects on light, increases cosmological redshift.

The source of gravity, baryonic matter, N in the equations, is isolated as the sole cause of gravity, this is empirical and easily identifiable. The correlation of baryonic matter observable and gravity is well established and defined by Laws of physics. Baryonic matter via gravity clearly affects light. Therefore, baryonic matter's density being a volume in density and atomic weight has correlation to affects on light. Clearly the proximity to baryonic matter to light's path, is the cause to light's path curvature. Gravity affects light.

Increasing CR is accomplished by two distinct reasons as considered herein Ξ
Theory: 1- light increasing its path travel distance in proximity baryonic matter of density, increasing curvature lost mass with distance simply by distances in the presence of gravity events of curvature, and, 2- increasing the density of baryonic matter per volume of space; this is a description of perceived Hubble's expansion via affects on light via increasing gravity affects.

Increasing the density of baryonic matter by the density (volume) of the baryonic matter within a well defined space via contraction, or, increasing the affects of gravity on light via distance and therefore the numbers of curvature affects, clearly both results in increased CR.

The Sum (Sigma) of the kinetic energy lost in curvature from emitting to observing is the address of the above cosmological redshift equation on #11pg5.

#1 Event indicates the single N source of curvature, with the E Energy equation of the requirement to move one photon the height of the curvature arc. This is the energy unit per se that has our attention, and, is quantified by equation as part of our conjecture.

#2 Event simply indicates two N sources of gravity between the same coordinates, and twice the E, Energy required to move the photon on two occasions the height of each curvature arc.

#3 Event indicates four N sources f gravity and affect on light within the same well defined coordinates. Having four curvature affects, and four times the E form curvature lost by light.

Clearly we have quantified and demonstrated the E Energy component of light, lost during curvature.

Finally, in #11pg5 the #Distance Disappearing Galaxy Event , the multiple events of curvature, being gravity's cumulative affect on light via baryonic matter's gravity, is simply demonstrated to indicate Density of Baryonic Matter affects on light observed as cosmological redshift; we can now raise this conjecture to a postulate.

Increasing gravity in intensity via larger gravitational mass such as a large object of baryonic matter, an extreme example being a black hole singularity, increases the CR of light with a path nearby.

Further discussion, a star the size of the sun affects light less than a super massive spiral galaxy; the proximity of light's path to dense baryonic matter gravity has affects seen as the effect CR. 'Density' clearly affects light, distance traveled by light in proximity to many gravitational affects also increases the cumulative curvature and CR.

Therefore, the theory indicates that CR increases with distance, and, with time as the Universe is contracting.

The conjecture is a contracting baryonic matter Universe, a contracting Universe, would have an increasing contraction rate and and increasing affect on light observed simply because of increased curvature via increasing gravity affect via increasing Density of Baryonic matter: increasing CR.

Having clearly clearly demonstrated and quantified the 1- E energy lost in curvature, 2-curvature effects of gravity, 3-the correlation of Density of Baryonic Matter, the conjecture of increasing cosmological redshift, both with distance and time, can be raised to a postulate.

Progressing from a single source to several has consequences observable and verifiable both theoretically via math with preponderance and, physically via observation/experiment.

Gravity & Light paper #10, pg4
 The Photon's energy(mass) loss, curvature,
 Density, Multiple N magnetic~gravitational forces.

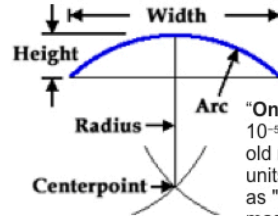
$$K = \int_0^s F ds$$

$$R = \frac{mc^2}{\epsilon} \cdot \frac{v/c}{\sqrt{1-v^2/c^2}} \cdot \frac{1}{N}$$

$$E_R = K_R$$

E=Energy required to move one photon to the height of the arc of the curvature caused by N

$$E_R = mc^2 - m_0c^2$$

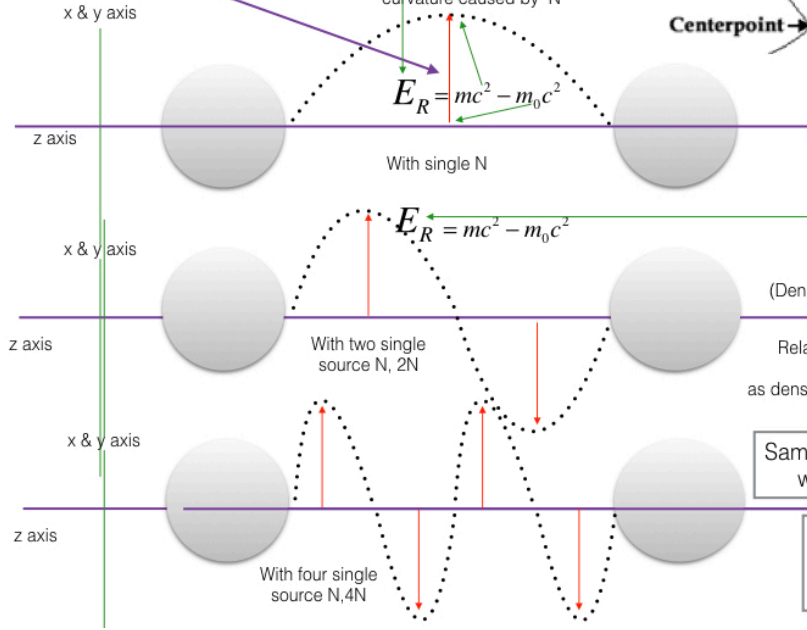


$$\sum_e K_R = \sum_e W$$

$$W = \int cX dx = m \int_0^v \beta^3 v dv$$

$$= mc^2 \left\{ \frac{1}{\sqrt{1-v^2/c^2}} - 1 \right\}$$

"One dyne is equal to 10 micronewtons, 10⁻⁵ N or to 10 nsn (nanosthenes) in the old metre-tonne-second system of units. Equivalently, the **dyne** is defined as "the force required to accelerate a mass of **one gram** at a rate of **one centimetre per second squared**": 1 dyn = 1 g · cm/s² = 10⁻⁵ kg · m/s² = 10⁻⁵ N." google



Single N source of gravity
Density Relationship
 to Curvature~redshift

(Density) N source of gravity = 1x curvature~c-redshift
 Relationship: multiple N sources of gravity in a defined space or contracting, as density increases redshifting of light increases

Same geometric distance with 4x the redshift

Ergo, expanding at an increasing rate becomes, contracting at an increasing rate

As Density of the Universe increases gravity's affect on light increases, ergo, we perceive expansion when the Universe is contracting

By: douG

Insert- #10pg4- simple demonstration of quantifying the E energy to move the photon the height of the curvature arc, notice the Density correlations easily deducted from the diagram.

Having stated what we know and can prove theoretically and/or via physical experiment or via observable phenomenon and data} therefore:

In the natural gravity system and including our Universe contracting and thereby increasing the Density of Baryonic matter, is observed the increasing affects on light. The increasing gravity affects as increased curvature of light's path from the distance and over time, is clearly observed as increasing cosmological redshift.

Therefore the Universe is contracting at an increasing rate via Gravity.

Gravity affects Everything.

With **Ξ Theory** and its supporting papers, the Universe can presently be explained well as: contracting at an increasing rate.

If it helps, its a gift.

douG ~ Gravity affects Everything.

Dedicated to my wonderful children, Doug, Ann, Thadeaus, Shelby, Tyrus, Courtney, Phone and Emily; the joy of the father, with special thanks to Courtney for her endless patience and help and Phoebe for helping so much.

This paper Uploaded to Quora August 2017

***406240**Ξ Theory** and its supporting papers are Copyright material of the author, all Rights reserved.

Additional notes and discussion of the theory and **Ξ Theory** implications:

Section Eleven- The z axis 3d Gravitational Affects on Light

The affects of gravity on light are well understood on the x and y axis, we call it gravitational lensing (see papers #R Redshift and Paper #L Light).

Gravity & Light paper #R- Redshift pg1- z axis

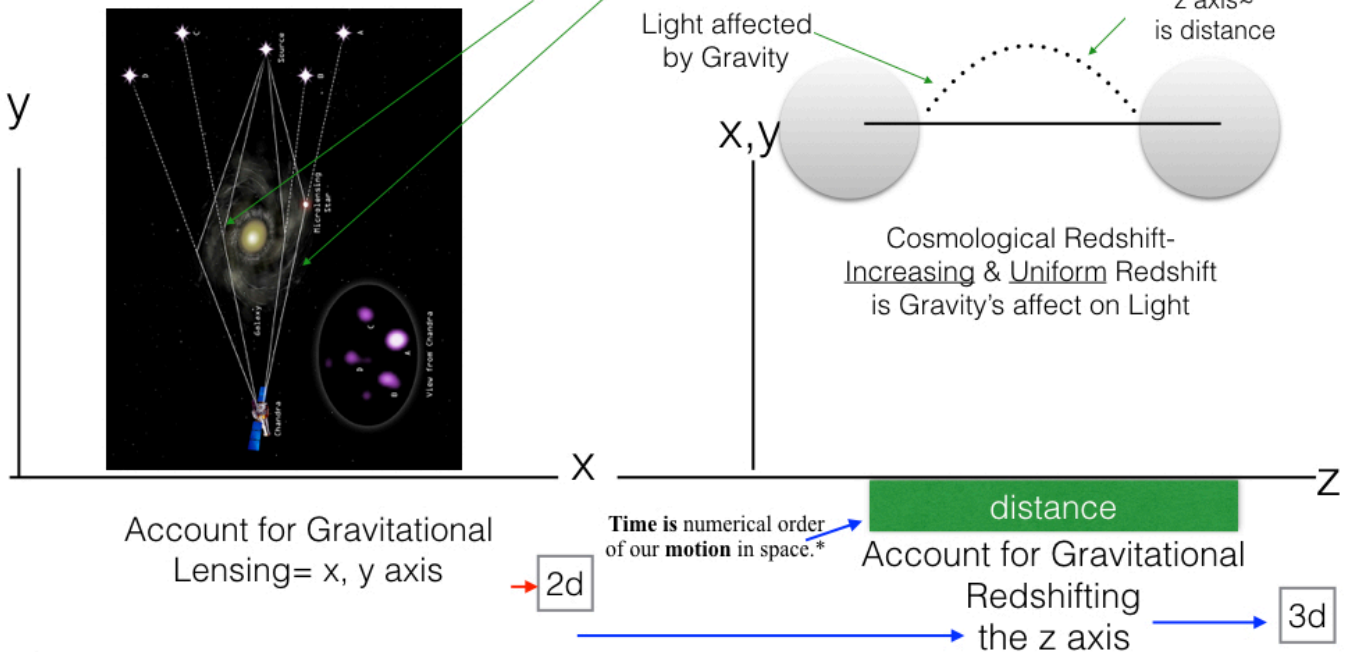
Discussion Light via Gravitational Lensing and Gravitational Redshfting

Accounting for Gravity's affect on Light → **E Theory**
 =where is the object on the x,y,z axis ?

Contracting at an increasing rate

Gravity's affects on Light~ 3 dimensional

Position on z axis~ is distance

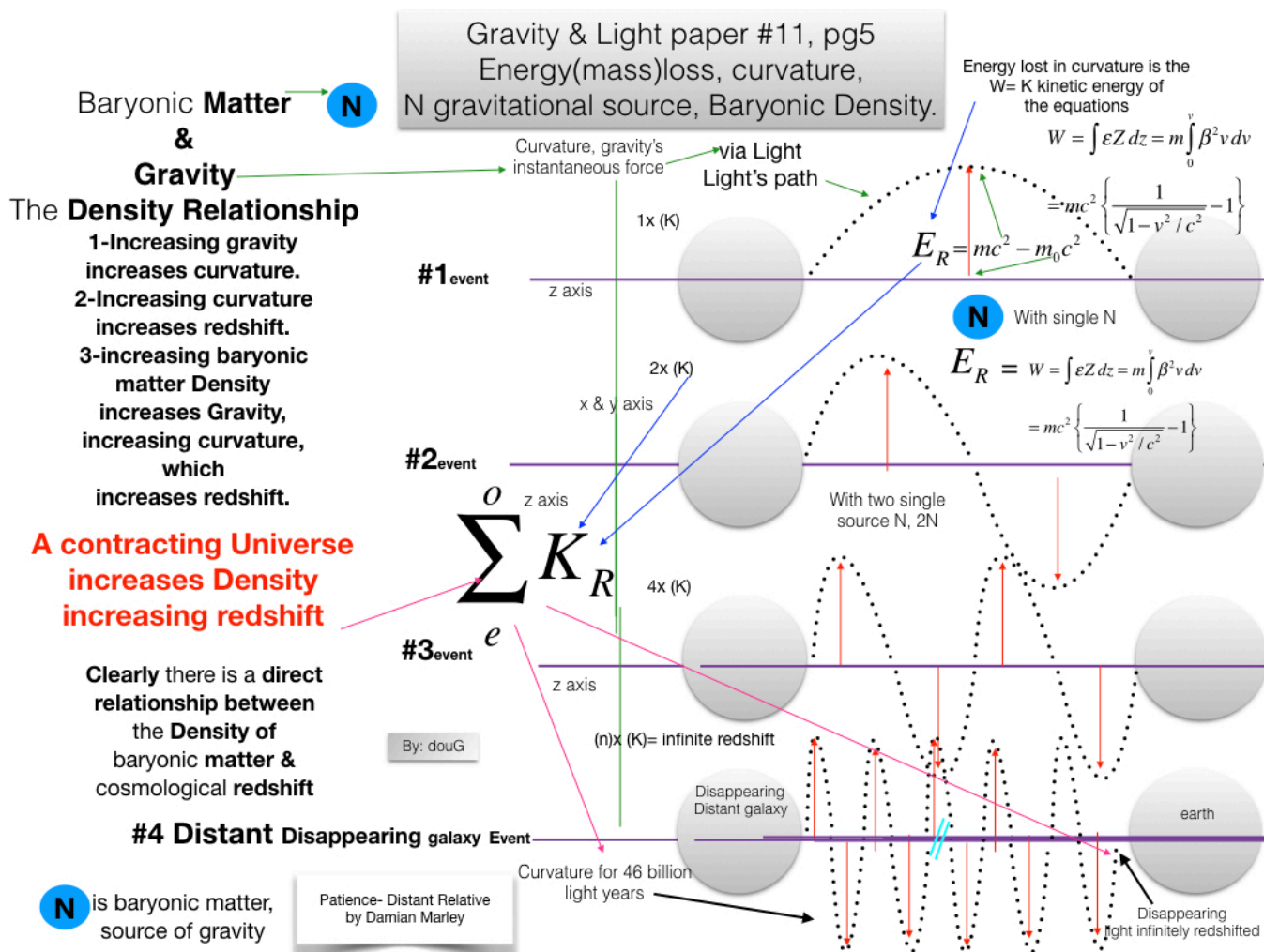


By: douG

Insert #R pg1 Chandra gravitational lensing picture, describing the a and y axis, and the introduction to z axis affects on light, the Distance or 3d inclusion of gravity's affect on light.

When we account for the z axis gravity affects as gravitational redshifting, a 3d three dimension accounting for gravity's affects on light, in effect the distances are corrected resulting in: a contracting Universe with infinite redshift observed in a contraction event. Presently under Lambda CDM expansion theory there is little to no accounting for redshifted light CR on the z axis or distance. In the contraction event noted in the Gravity & Light papers, be it an event horizon of a black hole or observed as disappearing distant galaxies, the evidence exhibits infinite redshift via gravity's affects on light.

E Theory explains the disappearing galaxies are results of accumulated gravitational redshifting causing light to eventually to cease reaching the observer:



insert #11pg5- demonstrating the affects of gravity on light, via curvature, the z axis affects accumulating; the 3d affects on light caused by increasing gravity.

The z axis understanding of gravity's affect on light plus the x and y axis affects, advances to a 2 dimensional gravitational lensing only, to a 3d three dimensional gravitational effect also, including gravitational redshifting observed as CR.

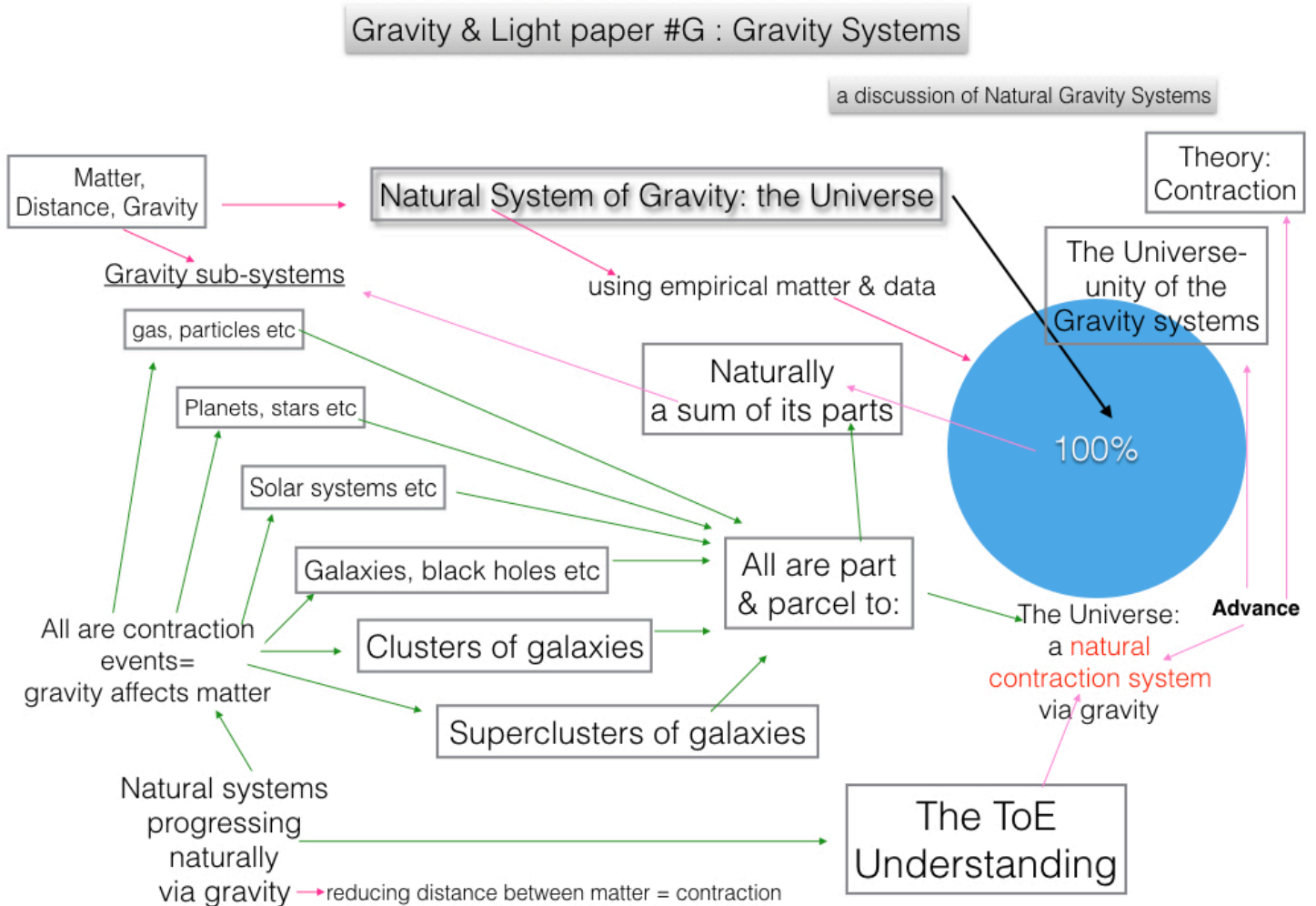
SectionTwelve- Energy/Mass Transfer from Light to N

Clearly light's mass lost in curvature, a transferred energy to N the source of the gravity, results in a cumulative affect on light, observed as cosmological redshift.

Insert #11pg5 see above.

The accumulating affects of gravity on light causes the infinite redshifting observed as distant disappearing galaxies.

The observed data of baryonic matter confirms **Ξ Theory**.

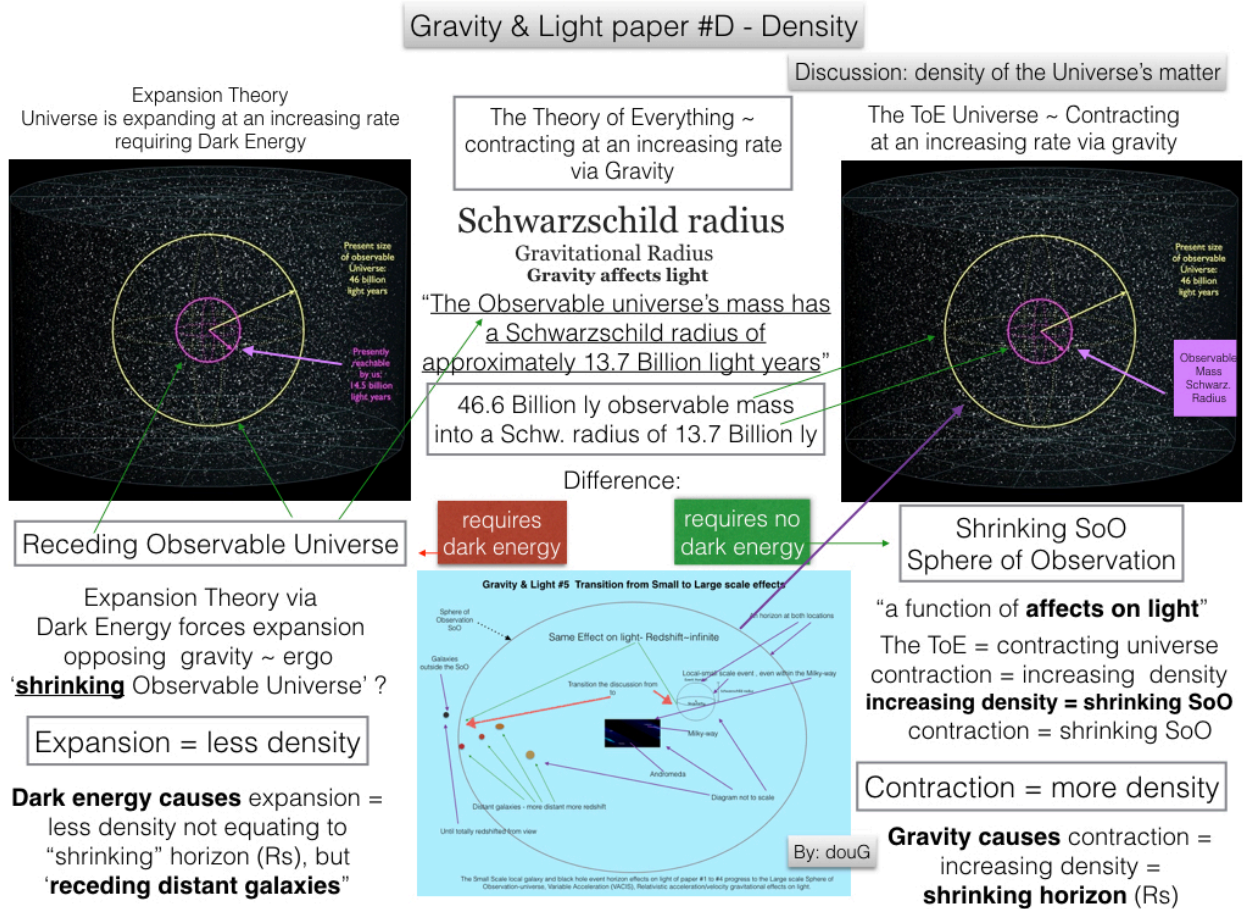


By: douG

Insert #Gpg2- Gravity systems within the Universe, everything.

The Universe is clearly a sum of its part, contracting parts are noted in the diagram.

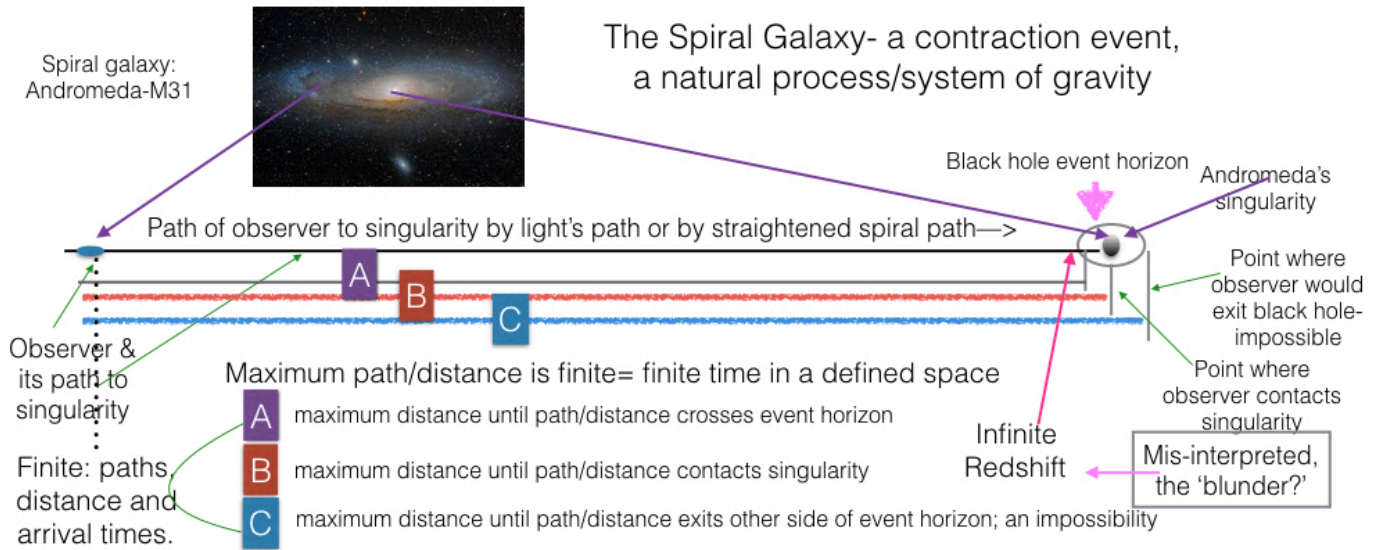
∃ Theory theorizes that Density of baryonic matter correlates to gravity affects on light, and contraction of baryonic matter is increasing the affects on light in a contracting Universe:



Insert #D, Density demonstration on the SoO, Gravity affects light.

Therefore in the natural Universe contracting, increasing the Density of Baryonic matter, is observed the increasing affects on light as increased curvature of light's path from the distance, observed as cosmological redshift.

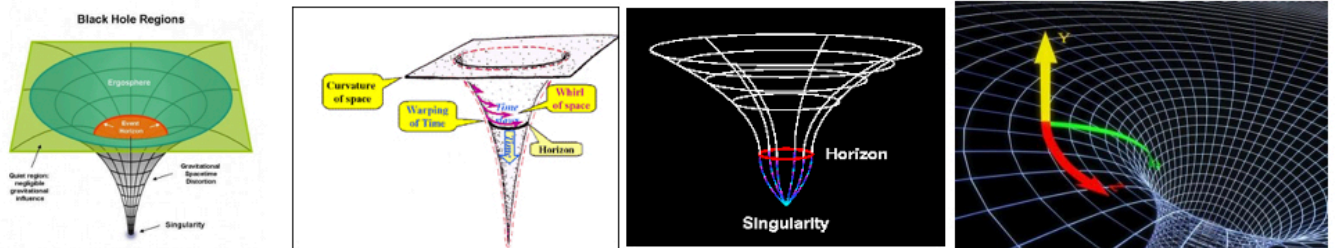
Gravity & Light paper #4



Finding: 1-The spiral galaxy is a contraction event. 2-All paths/distance/time to singularity is finite.

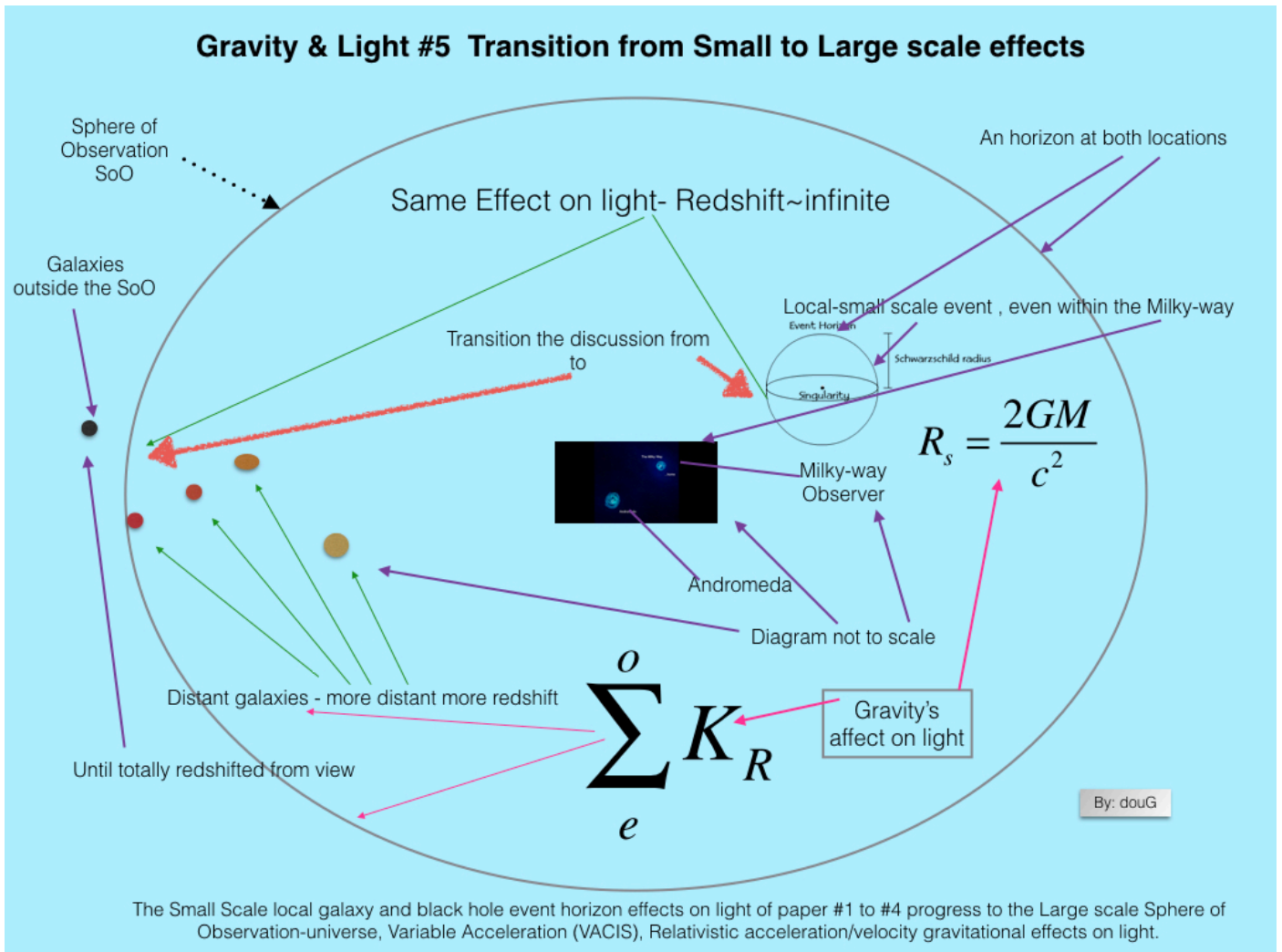
Conclusion: infinite redshift can exist within a contraction event- the spiral galaxy.

Note the relativity explanations: infinite redshift/infinite spacetime, massless, warping time, volume-less, curvature, etc



Insert- From #4 paper: simply, infinite redshift can exist within a contraction event.

The subject of infinite redshift existing within a contraction event, a black hole, is the address of paper #4 preceded by paper #1 thru #3. To understand infinite redshift does exist in contraction events is the first step to understand the transition to large scale effects, the infinite redshift existing in a close contraction event helps understanding the cosmological redshift within a contracting Universe.



Insert- paper #5 indicates the black hole infinite redshift, small scale, is gravity affects on light similar to the large scale effect, cosmological redshift.

Number #5 paper explains the similarity of the event horizon of a black hole and the event horizon of the distant disappearing galaxies 46 billion light years away.

Light's Path: What light has to go through on its way here to observe has our attention. The path light takes is of particular focus, and any affect to light that gives effect and perception is of great concern. Cause and effect must be proven, verifiable and observable.

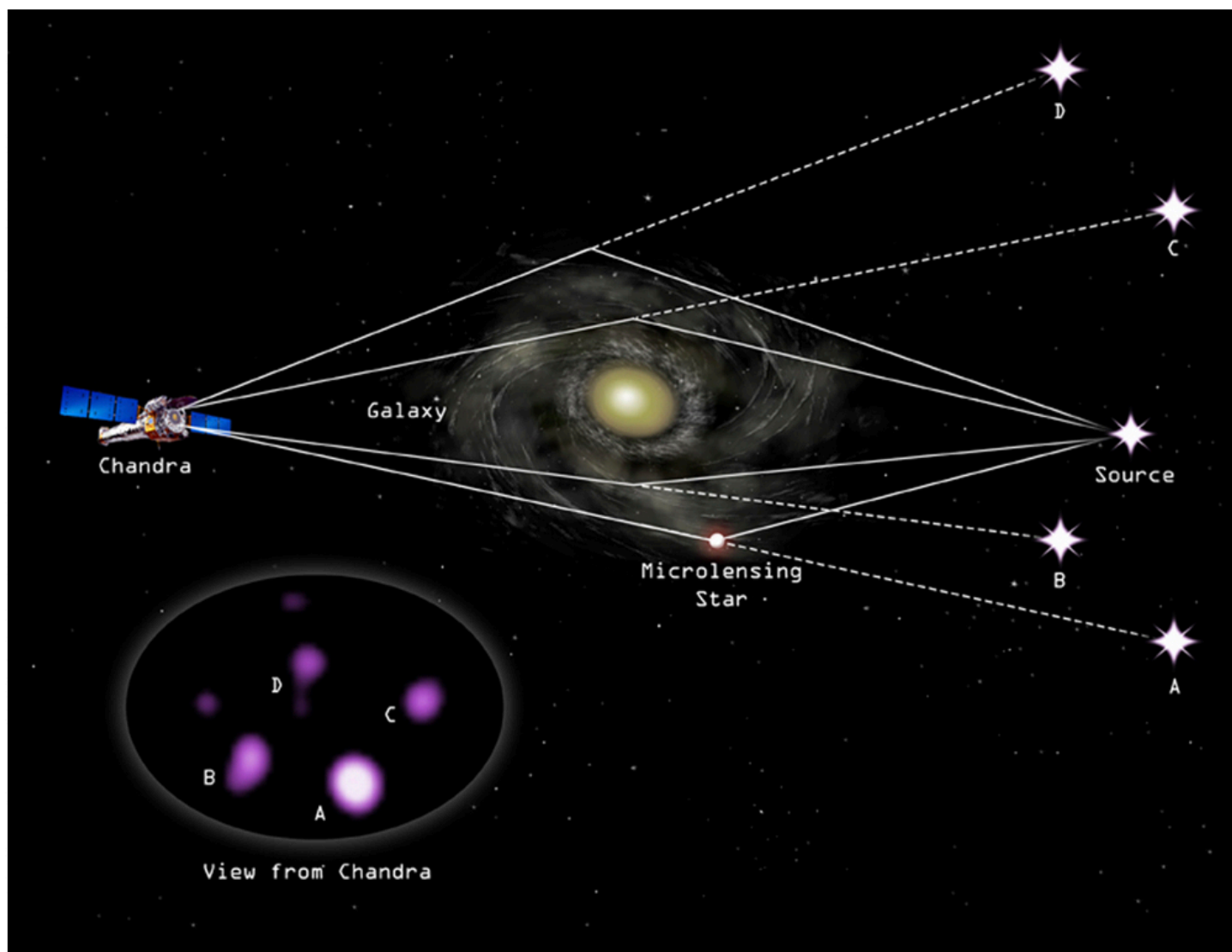
How we account for the light we observe clearly gives us different conclusions, therefore we shall be diligent in how we account for the light we observe.

Ξ Theory explains what light goes through to reach us/earth (all observers), what affects happen to the light during its path to all observers, and, why/how/where/when the effect called cosmological redshift exists, the cosmological redshift's cause, plus how to account for it.

Gravity & Light- Gravity affects light. The subject of Gravity, Light and cosmological redshift is the address of the Gravity & Light papers.

When gravity is present, light is affect by gravity.

Gravitational lensing is clearly gravity's affect on light:



Chandra Insert, #Rpg9, credit NASA, exhibits gravitational lensing, left-right-up-down, the x and y axis.

Gravitational redshifting, cosmological redshift, is clearly gravity's affect on light:

Gravity & Light paper #R- Redshift pg1- z axis

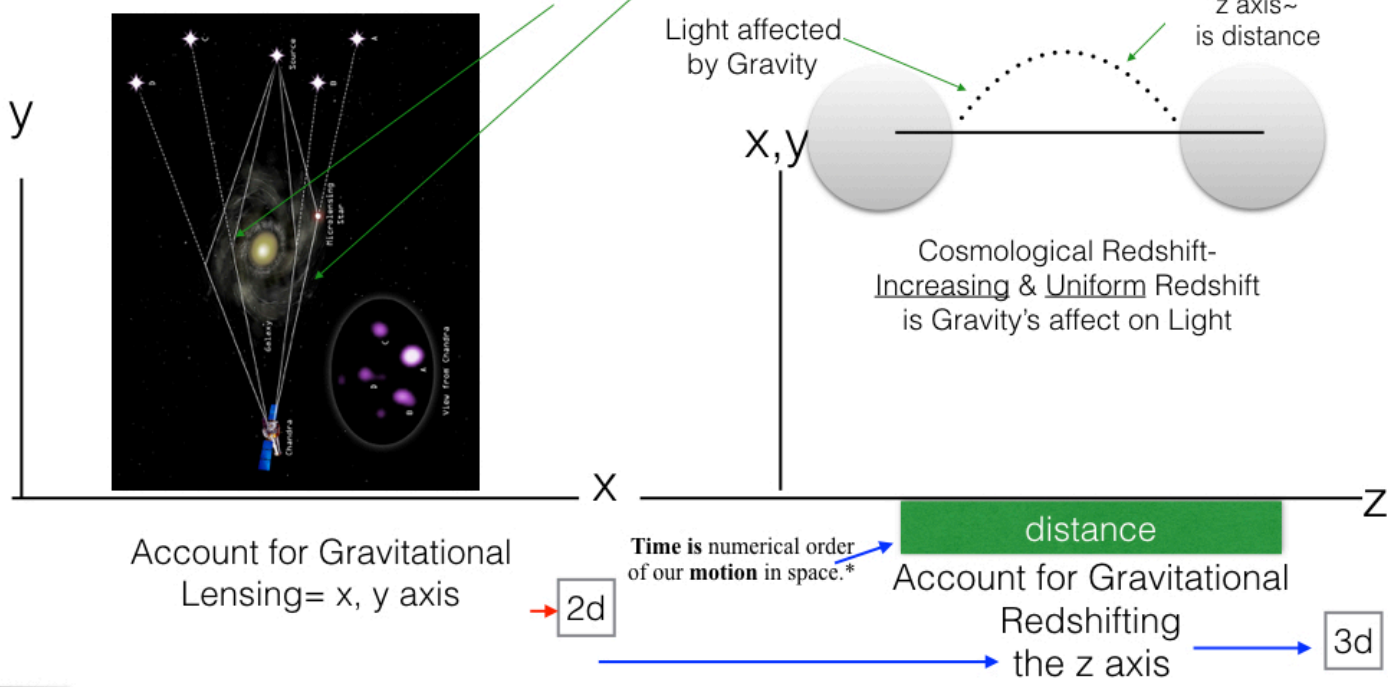
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Accounting for Gravity's affect on Light → **E Theory**
 =where is the object on the x,y,z axis ?

Contracting at an increasing rate

Gravity's affects on Light~ 3 dimensional

Position on z axis~ is distance



By: douG

Insert #Rpg1- x y, z axis diagram indicating the gravity affects on light and the z axis 3d (gravitational redshift) from the 2d gravitational lensing.

The equations modified to distinguish and quantify the energy component:

'A' equation

$$\frac{d^2x}{dt^2} = \frac{\epsilon}{m\beta} \left(X - \frac{v}{c} N \right)$$

$$\frac{d^2y}{dt^2} = \frac{\epsilon}{m\beta} \left(Y - \frac{v}{c} N \right)$$

$$\frac{d^2z}{dt^2} = \frac{\epsilon}{m\beta} \left(Z + \frac{v}{c} M \right)$$

'K' and 'E' equation

$$K_R = E_R = mc^2 - m_0c^2$$

'W' Withdraw equation

$$W = \int \epsilon Z dz = m \int_0^v \beta^2 v dv$$

$$= mc^2 \left\{ \frac{1}{\sqrt{1 - v^2/c^2}} - 1 \right\}$$

'Sum' equation

$$\sum_e^o K_R = \sum_e^o W$$

Gravity & Light paper #11, pg7
Equations.

A modification of the equation, to position the magnetic N (gravity) force on the x and y axis, while the path of travel is moved to the z axis, and having the electromagnetic spectrum energy M attributed on the z axis.

The kinetic energy, mass, required to move one photon the height of the arc of the curvature of light's path.

withdraw energy shown on z axis, Z+v/cM

Cosmological Redshift = $\sum_e^o K_R$

The sum of all the Mass(energy) lost during curvature from the time light is emitting until the light is observed

The sum of the kinetic energy lost during curvature along the duration of the light's path, is equal to the "energy withdrawn from the electrostatic field" "put down as equal to the energy of motion W of the electron".

'R' Curvature equation

$$R = \frac{mc^2}{\epsilon} \cdot \frac{v/c}{\sqrt{1 - v^2/c^2}} \cdot \frac{1}{N}$$

Einstein's original equations:
referred to as 'A' equation
Special Rel Section 10

$$\left. \begin{aligned} \frac{d^2x}{dt^2} &= \frac{\epsilon}{m\beta^3} X \\ \frac{d^2y}{dt^2} &= \frac{\epsilon}{m\beta} \left(Y - \frac{v}{c} N \right) \\ \frac{d^2z}{dt^2} &= \frac{\epsilon}{m\beta} \left(Z + \frac{v}{c} M \right) \end{aligned} \right\}$$

Where:
e= light emitted wavelength t=0
o= light observed wavelength
K= the kinetic energy required to move one photon the height of the arc of the N magnetic-gravitational curvature from either the x or y axis or any combination thereof.
R= the curvature induced by each N source, (magnetic) gravitational affects on light path, from emission to observance.
N= the object of gravity, baryonic matter
M=electrostatic portion of photon, equal to N on x and y axis

Einstein's original: referred to as
W withdraw equation:

$$W = \int \epsilon X dx = m \int_0^v \beta^3 v dv$$

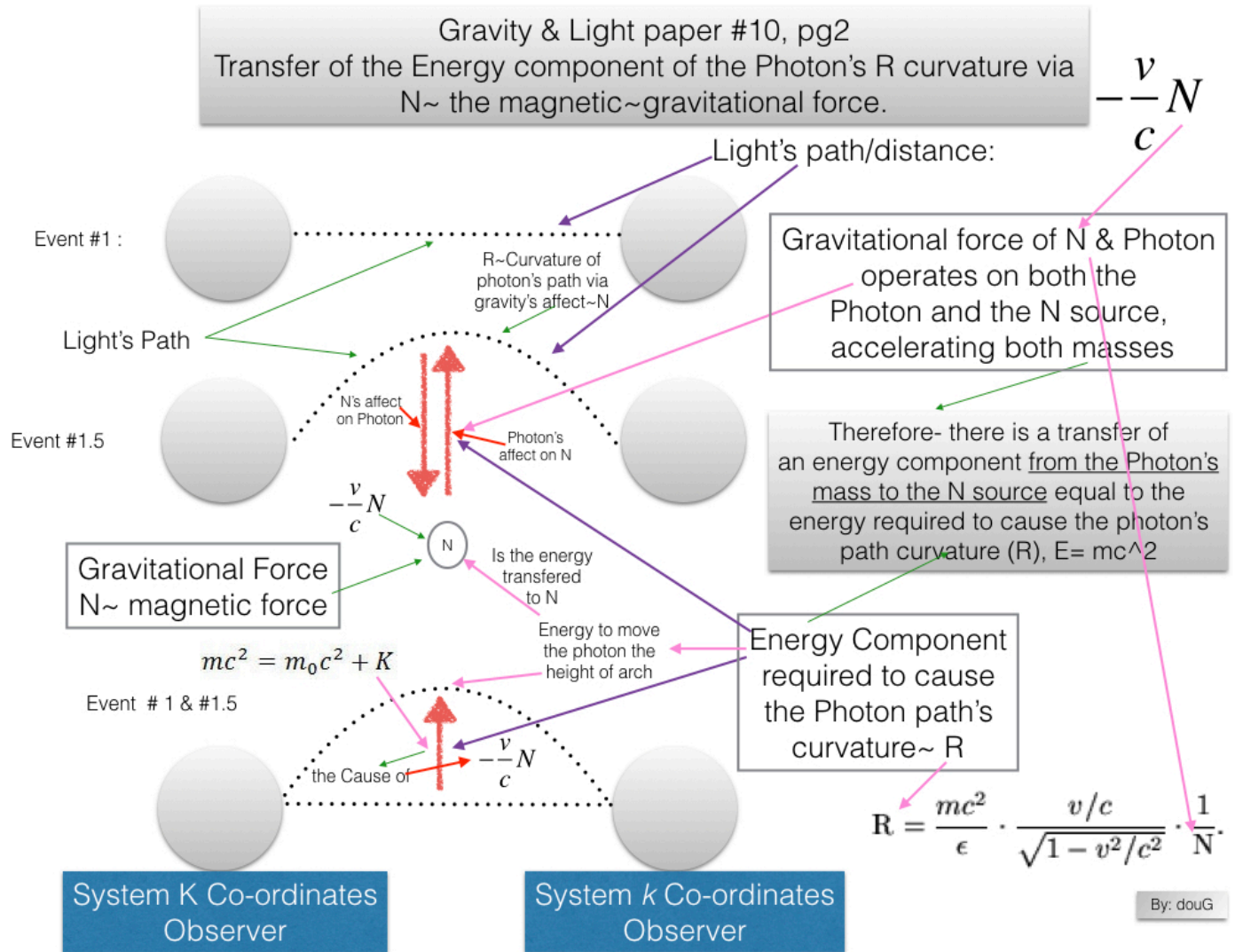
$$= mc^2 \left\{ \frac{1}{\sqrt{1 - v^2/c^2}} - 1 \right\}$$

By: douG

Insert- #11pg7, the equations the correlate the X to x axis, Y to y axis and Z to z axis.

The gravitational affect on light's path is the cause of curvature in light's path. Light traveling in a gravitational field is affected by gravity during light's path traveled to be observed. The gravity forces, note as N in my equations and sources in the Einstein equations is the cause of gravity (affect). The result is gravitational redshifting, cosmological redshift, the effect.

Our attention now turns to defining the loss of energy to light, the photon, during gravity affecting light, the photon~light or the entire electromagnetic spectrum.



Insert #10 pg#2 simply demonstrates and quantifies the energy to move the photon the height of the air during curvature of light.

Energy Lost During Curvature- curvature is gravity induced motion (curving) caused to the photon path. Clearly there is required energy to move matter. Clearly there is energy required to move the photon perpendicular to its path of travel. Clearly to move and curve light's path requires energy.

Defining and quantifying the energy required to move the photon the height of the arc during curvature is of use. The energy to curve light's path exhibits the lost mass~energy to light during curvature; explained well by Einstein's curvature and withdraw equations.

'A' equation

$$\frac{d^2x}{dt^2} = \frac{\epsilon}{m\beta} \left(X - \frac{v}{c} N \right)$$

$$\frac{d^2y}{dt^2} = \frac{\epsilon}{m\beta} \left(Y - \frac{v}{c} N \right)$$

$$\frac{d^2z}{dt^2} = \frac{\epsilon}{m\beta} \left(Z + \frac{v}{c} M \right)$$

'K' and 'E' equation

$$K_R = E_R = mc^2 - m_0c^2$$

Gravity & Light paper #11, pg7
Equations.

A modification of the equation, to position the magnetic N (gravity) force on the x and y axis, while the path of travel is moved to the z axis, and having the electromagnetic spectrum energy M attributed on the z axis.

The kinetic energy, mass, required to move one photon the height of the arc of the curvature of light's path.

'R' Curvature equation

$$R = \frac{mc^2}{\epsilon} \cdot \frac{v/c}{\sqrt{1-v^2/c^2}} \cdot \frac{1}{N}$$

Einstein's original equations:
referred to as 'A' equation
Special Rel Section 10

$$\left. \begin{aligned} \frac{d^2x}{dt^2} &= \frac{\epsilon}{m\beta^3} X \\ \frac{d^2y}{dt^2} &= \frac{\epsilon}{m\beta} \left(Y - \frac{v}{c} N \right) \\ \frac{d^2z}{dt^2} &= \frac{\epsilon}{m\beta} \left(Z + \frac{v}{c} M \right) \end{aligned} \right\}$$

'W' Withdraw equation

$$W = \int \epsilon Z dz = m \int_0^v \beta^2 v dv$$

$$= mc^2 \left\{ \frac{1}{\sqrt{1-v^2/c^2}} - 1 \right\}$$

withdraw energy shown on z axis, Z+v/cM

Cosmological Redshift = $\sum_e^o K_R$

The sum of all the Mass(energy) lost during curvature from the time light is emitting until the light is observed

'Sum' equation

$$\sum_e^o K_R = \sum_e^o W$$

The sum of the kinetic energy lost during curvature along the duration of the light's path, is equal to the "energy withdrawn from the electrostatic field" "put down as equal to the energy of motion W of the electron".

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$$W = \int \epsilon X dx = m \int_0^v \beta^3 v dv$$

$$= mc^2 \left\{ \frac{1}{\sqrt{1-v^2/c^2}} - 1 \right\}$$

By: douG

Insert- equations for the description of the energy lost in curvature.

The energy lost during curvature must be shown (effect) and demonstrable, testable. Being our postulate that light is observed at the c constant: light speed in a vacuum is c , the lost mass~energy to light during curvature is exhibited on the electromagnetic spectrum via parallelism of the photon on its x,y,z axis. For a detailed explanation see paper #10.

Defining & Quantifying the Energy- Quantifying the lost energy, the mass loss during curvature, is half of the issue, the other half is explaining the lost in compliance with Conservation of Mass Law.

Einstein's R =curvature and W =withdrawn mass equations are built onto to explain the loss of mass (energy) to the photon. There is a current cause and effect observable, cosmological redshift. This cause and effect is specifically explained in the #10, #R Redshift, #L Light papers.

The first half defining and qualifying the loss is complete.

The transfer of mass during curvature, from light, is to the N , the object creating the gravitational effect perpendicular to the path of the photon: Newton's 3rd Law.

The Defining and Quantifying of the mass loss to the photon being complete, this explains the cosmological redshift observed within the light from the distant.

Parallelism - a method to solve scientific problems. In the case of the photon, traveling at light speed, observed at light speed always, requires the lost mass from the x and y axis gravitational affects, to be attached equally to the photon's z axis, as the photon is parallel on each axis concurrently, as light is observed at light speed and z is parallel with the x and y axis, three axis of the photon attached as one unit, parallel; leaving the lost from the x and y axis observed also on the z axis, redshifted and having equal affects on each axis, gravitational lensing is the x and y affect (effect), cosmological redshifting is the z axis affect (effect)

The Rift- Small scale and Local Scale contraction takes place faster than the large scale. The space between planets and star objects is representative of contraction of matter into planets and stars then finding a relationship/orbit which will eventually lead to contraction into a singularity within the galaxies. The galaxies are similar, their contraction has take place faster than their contraction with each other galaxy. This space between the faster scale contraction and the slower scale contraction is observed as rifts, or space between contraction systems that helps with the perception of ‘expansion’. Without the rift between contraction scaled events, most obviously observed between galaxies, contraction of the whole Universe would be more obvious.

The entangle aspect is the thinly and widely distributed energy after the initial big bang spreading, leaves a homogenous thinly distributed energy, when contracted to matter, $e=mc^2$, the space between matter therefrom collected leave Rifts between what has and is collected baryonic matter visible. The visible currently presents baryonic matter contractions systems, see #Gpg2, and with **Ξ Theory** explanation of cosmological redshift, a contracting Universe, as Sum of its contracting parts, regardless of the Rift that exist.

CMB- a CMB paper will follow at a later date when completed more extensively:
*The kicker, when i apply the same formulas as explaining the CR, apply the same equations to the Cosmic Microwave Background, the Black body radiation is merely electromagnetic spectrum affected previously by gravity, similar to the past of the visual disappearing we see today at 46 billion light years away. The CMB is merely more accumulated kinetic energy lost of the electromagnetic spectrum due to curvature.

Its all energy regardless of where on the spectrum, and gravity’s affects on the electromagnetic spectrum reaching us is merely the same for the whole spectrum, not ‘just’ visible light observed as cosmological redshift. The energy, be it microwave, infrared, light or Ultraviolet, it is a spectrum of energy as simply what we observe; gravity affects light and the entire electromagnetic spectrum as well as baryonic matter, the source of gravity.

All of the electromagnetic spectrum, described by the equations and explanation as the photon, is affected by gravity. All baryonic matter is affected by gravity. Eventually with enough gravity or distance and e path passing through a gravitational field/affect, the electromagnetic spectrum disappears, and with it so does baryonic matter the spectrum of energy makes apparent do also disappear.

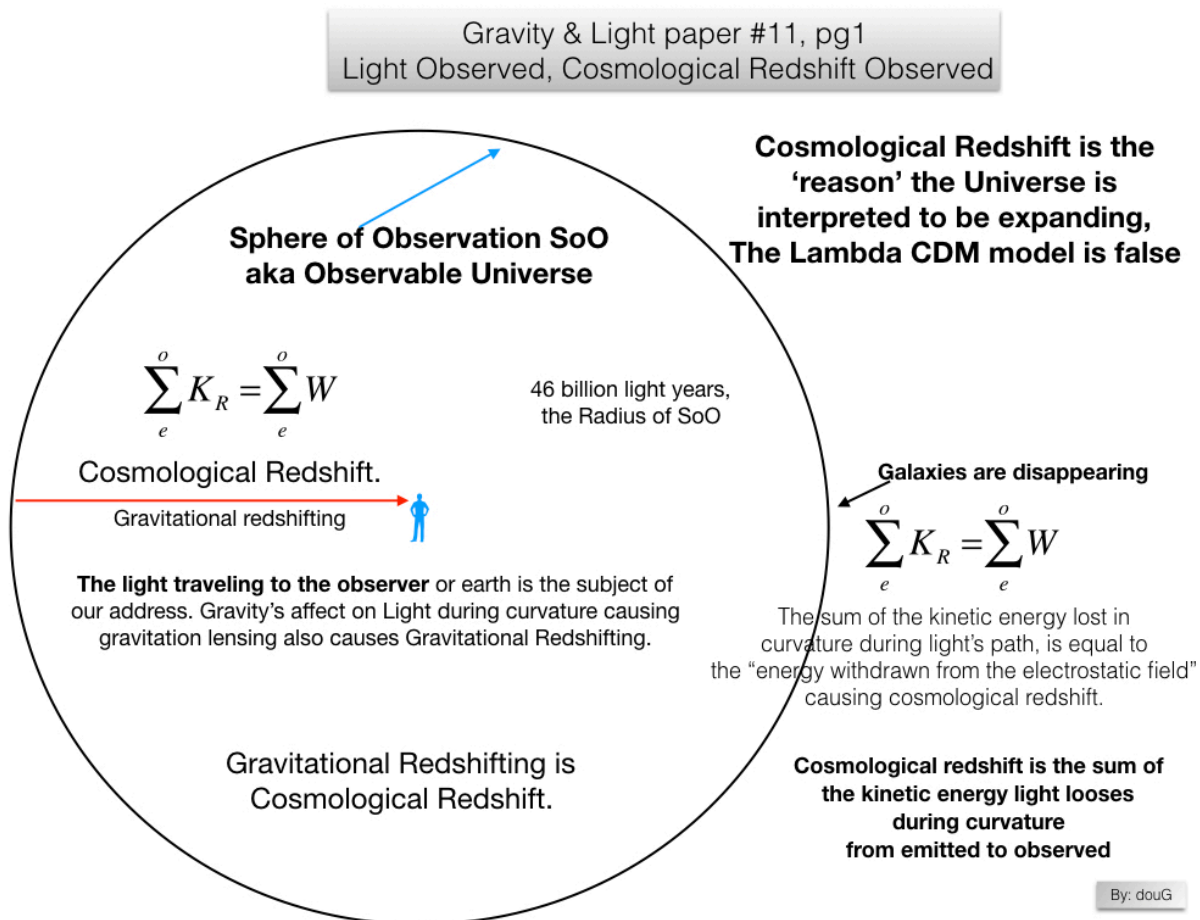
In such, the CMB is merely the spectrum, or image per se, further pushed from view or perceive distance from observer. Unless **Ξ Theory** is understood to correct distances, and thereby correct for gravity's affects via equation and explanation, aligning with the physics and math comfortably explaining observational data is: confusing as is expansion theory explanations are in error. *

Ref: as noted in the G&L papers and above.

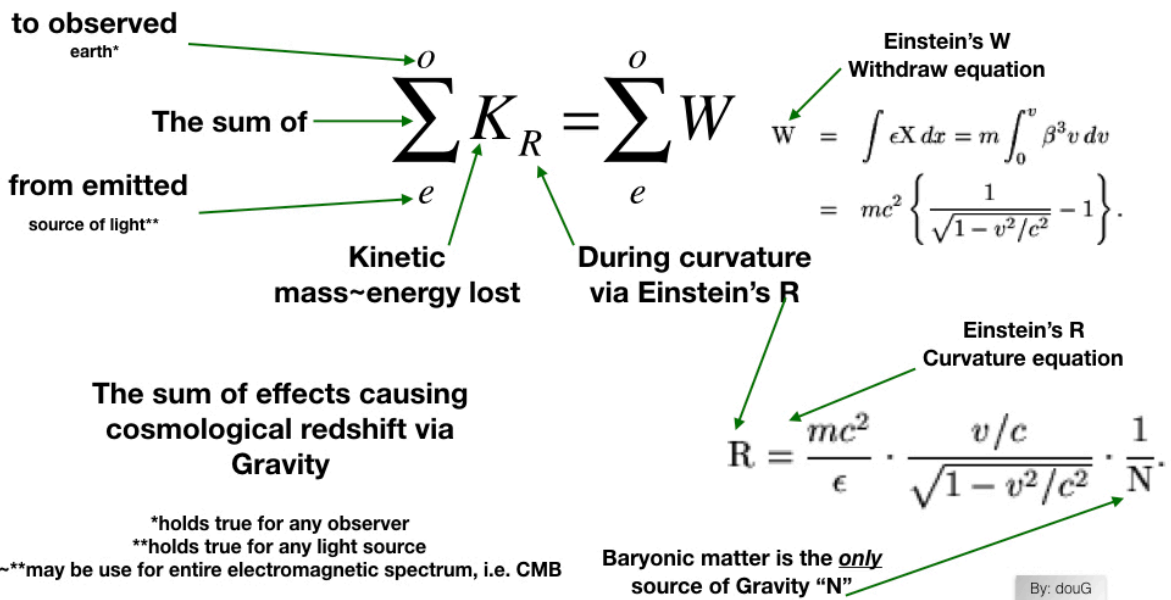
Noted reference: "Correct scientific theory contains only descriptions of successful falsifications." <http://personal.lse.ac.uk/robert49/ebooks/PhilSciAdventures/lecture6.html>

<http://science.psu.edu/news-and-events/2004-news/Chartas6-2004.htm> Chandra Image

Gravity & Light paper #11 Keynote Diagrams:

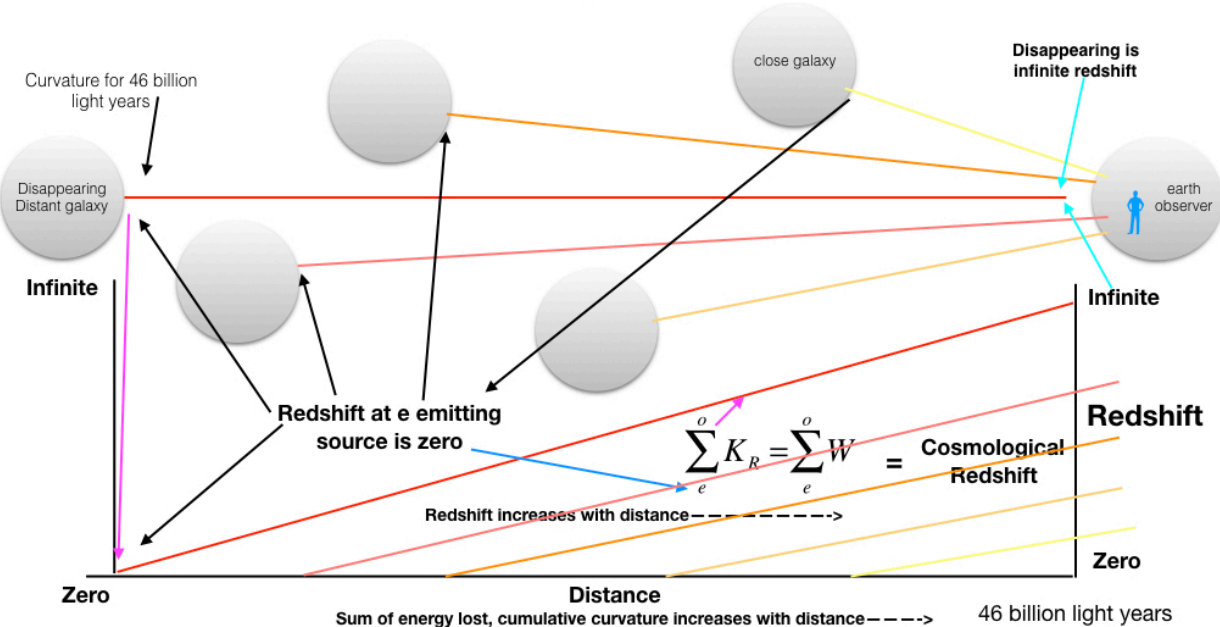


Cosmological Redshift Equation
the sum of the mass~energy lost
to light during curvature
from emitted (source) to observed (us)



Gravity Affects Light: Gravity & Light
Cosmological Redshift= the sum of the mass~energy lost
by light in curvature during light's path to the observer

$$\sum_e^o K_R = \sum_e^o W$$

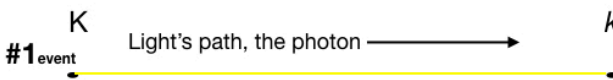


Gravity & Light paper #11, pg4
Cosmological Redshift, Baryonic Matter Density

By: douG

K- co-ordinate of light (photon)
in space from emission source

k- co-ordinate of light (photon)
in space at observation



No **N**, no curvature, no lost of energy, no cosmological redshift

K or k are co-ordinates
having no affect on light



One **N**, single curvature, lost of energy, cosmological redshift=1x $W = \int \epsilon Z dz = m \int_0^v \beta^2 v dv$

$$R = \frac{mc^2}{\epsilon} \cdot \frac{v/c}{\sqrt{1-v^2/c^2}} \cdot \frac{1}{N}$$

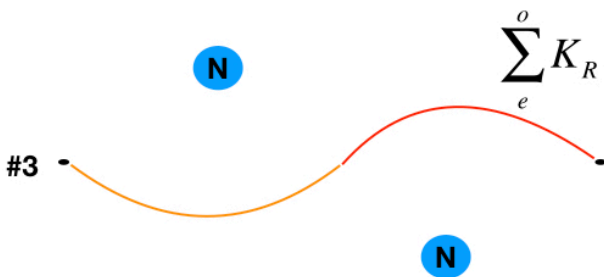
Curvature is caused by a gravity source present and affecting light's path

N

N= source of gravity,
baryonic matter

$$= mc^2 \left\{ \frac{1}{\sqrt{1-v^2/c^2}} - 1 \right\}$$

Lost of energy by the photon occurs during curvature. The lost is observed as cosmological "redshift"



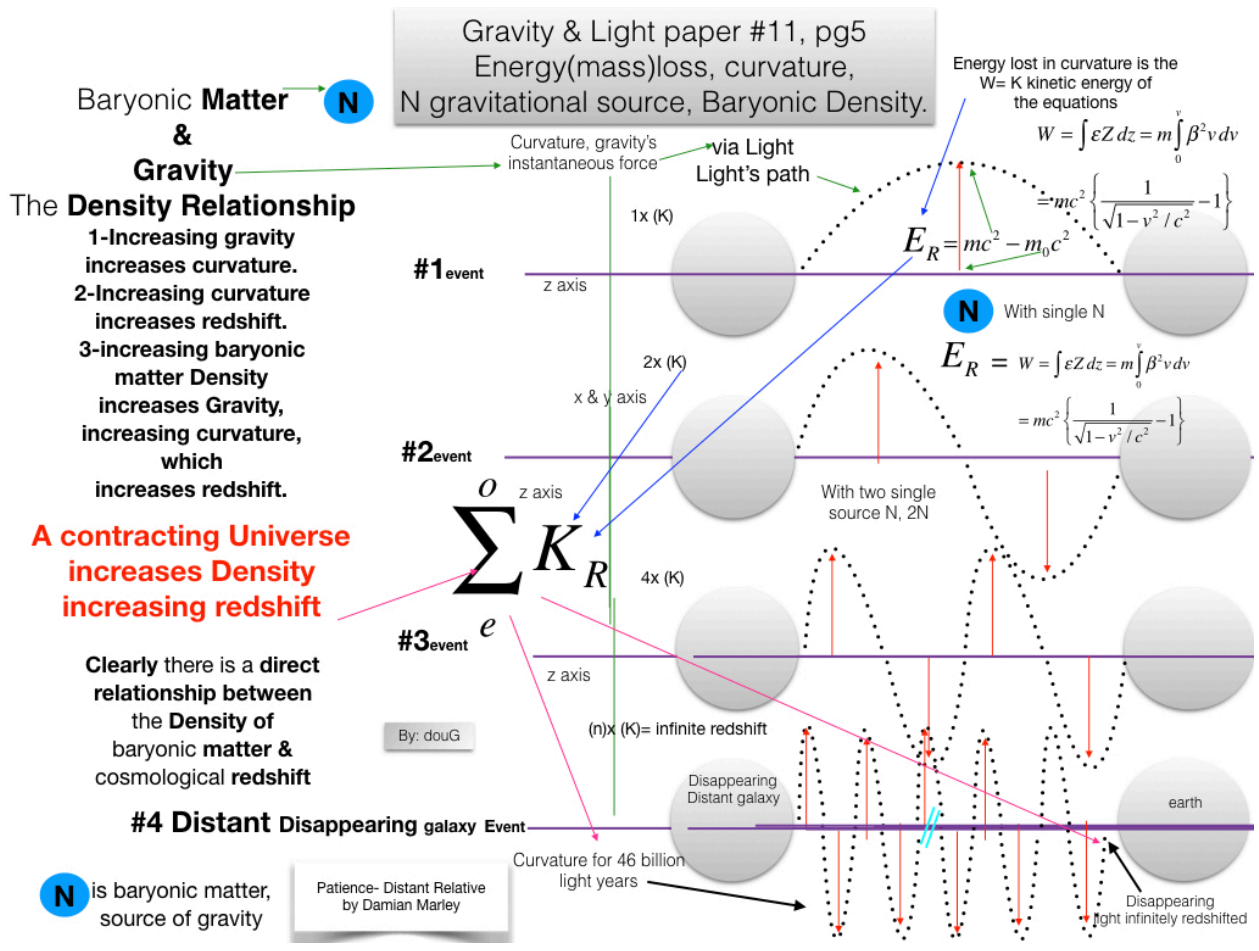
Two **N**, double curvature, twice lost of energy, cosmological redshift=2x

$$\sum_e^o K_R = \sum_e^o W$$

Increasing redshift is caused by increasing 1-affects of Gravity, 2-density of baryonic matter.

Increasing the Density of baryonic matter, and, the N sources of gravity, increases the redshift.

**A Contracting Universe
observed with
increasing redshift.**



Gravity & Light paper #11, pg6
 Energy(mass)loss, curvature,
 N gravitational source, 'A' equation.

d^n

is the point which we observe the photon,
 and the z axis its the photon's path of travel, creating curvature,
 the first curvature being :

$$\sum_e^o K_R = \sum_e^o W$$

$$\left. \begin{aligned} \frac{d^2x}{dt^2} &= \frac{\epsilon}{m\beta} \left(X - \frac{v}{c} N \right) \\ \frac{d^2y}{dt^2} &= \frac{\epsilon}{m\beta} \left(Y - \frac{v}{c} N \right) \\ \frac{d^2z}{dt^2} &= \frac{\epsilon}{m\beta} \left(Z + \frac{v}{c} M \right) \end{aligned} \right\}$$

the lost energy component of the photon traveling at c from a great distance would be summation of all the many gravity induced curvature(s) losses:

$$\begin{aligned} W &= \int \epsilon Z dz = m \int_0^v \beta^2 v dv \\ &= mc^2 \left\{ \frac{1}{\sqrt{1 - v^2/c^2}} - 1 \right\} \end{aligned}$$

By: douG

the transfers of (mass) energy, equal to the energy required to move one photon the distance of the height of the arc of the curvature:

$$K = \int_0^s \frac{d(mv)}{dt} ds = \int_0^{mv} v d(mv) = \int_0^v v d \left[\frac{m_0 v}{\sqrt{1 - v^2/c^2}} \right]$$

'A' equation

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withdraw energy shown on z axis, Z+v/cM

Cosmological Redshift = $\sum_e^o K_R$

The sum of all the Mass(energy) lost during curvature from the time light is emitting until the light is observed

Where:
 e= light emitted wavelength t=0
 o= light observed wavelength
 K= the kinetic energy required to move one photon the height of the arc of the N magnetic-gravitational curvature from either the x or y axis or any combination thereof.
 R= the curvature induced by each N source, (magnetic) gravitational affects on light path, from emission to observance.
 N= the object of gravity, baryonic matter
 M=electrostatic portion of photon, equal to N on x and y axis

'Sum' equation

$$\sum_e^o K_R = \sum_e^o W$$

The sum of the kinetic energy lost during curvature along the duration of the light's path, is equal to the "energy withdrawn from the electrostatic field" "put down as equal to the energy of motion W of the electron".

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By: douG

End paper #11
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 douG