Dark Energy: A partial, preponderant or complete illusion evidenced by The Redshift Anomaly which occurs due to Non Doppler redshifts caused by strengthening gravitational wells.

Keywords: Dark energy, redshift anomaly, deepening gravity well, strengthening gravity well, sinking gravity well, increasing mass, weakening gravity well, shallowing gravity well, contracting universe, static universe, < Hubble rate.

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Abstract:

The redshift anomaly is key to understanding dark energy. Unfortunately anomalous redshifts have largely been ignored and require further study. "If we find in observation that the Hubble redshift relationship is subject to notable exceptions, which certainly appears to be the case, it is to be hoped that they would attract careful scrutiny. Just one such exception, reasonably verified, would suffice to cast doubt upon the reliability of redshift/distance theory, with far reaching consequences for astrophysics" (Ratcliffe H., 2010, Journal of Cosmology). This paper will explain the cause of the redshift anomaly and then apply the newfound knowledge to the galaxies in the observable universe. NGC 7603 is one example of a redshift anomaly with a discordant redshift system. The objects in the system that have high-z values are in the process of gaining/accreting mass at a high rate relative to their companions at time of observation which causes the anomaly. Applying this knowledge to galactic objects, as matter condenses, the gravity well will "deepen" or strengthen which has the effect of red shifting photons in accordance with the gravity well's rate of strengthening. Thus the observed redshift of any galaxy isn't solely based on the Doppler effect but also the rate of change of the galaxy's gravitational well. The further the look back time, the younger the galaxy is, the faster its mass is increasing, the faster its gravity well is strengthening, the higher the z-value observed will be. The implications of this interpretation is dark energy is either non existent or is overestimated when the proposed phenomenon isn't taken into account when measuring z-values. It is also plausible the universe is static or contracting while still retaining higher redshifts the further we look due to the nature of the look back time. Conversely, when an object is in the process of losing mass, its gravity well shallows which blue shifts photons. Numerous observations that support the hypothesis are provided in the paper. Several tests to prove the hypothesis are described also.

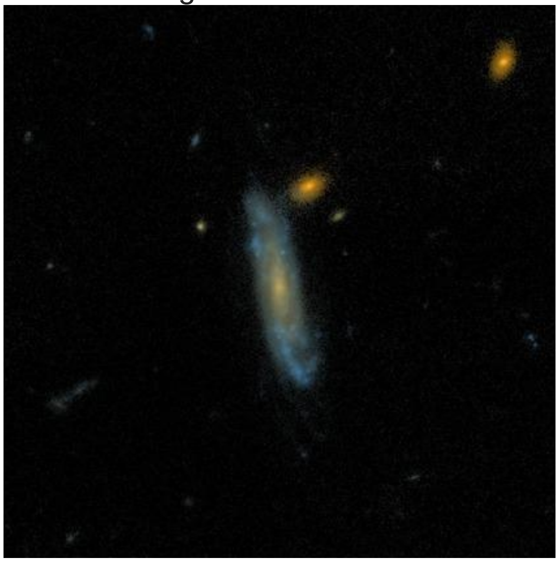
Introduction:

A galaxies redshift is not related to the Hubble velocity alone. Numerous redshift anomalies have been detected. This papers goal is to explain the nature of these redshifts and how it relates to younger galaxies producing a high-z which will shed light on our understanding of current expansion models. The expansion of the universe is overestimated if expansion is occurring. Redshift anomalies in Quasars with a high-z, binary galaxies with a mass gaining companion with a discordant high-z, and the furthest galaxies with high-z values all have a similar trait, their mass is increasing at a high rate at time of observation. This paper proposes that when an objects gravity well is in the process of strengthening (by gaining mass), the light observed during its gravity well strengthening phase is redshifted accordingly. When an object is losing mass and its gravity well is in the process of weakening, the light of the object gets blue shifted proportionately. The Doppler shift affect is not the only factor of an observed z value, there is also another phenomenon that should be accounted for when observing a z value, the dynamic gravity well.

When an object is gaining mass, high red shift values are observed. An object that is in the process of gaining mass at a high rate will be reflected in a z value that is proportionately high also, and an object that is losing mass at a high rate will give an extremely blue shifted value, which will be proved by many redshift anomaly observations of stellar objects in the paper. The redshift of an object depends on the rate its gravity well is deepening relative to its previous mass. For instance, if you add 1000 stars to a massive galaxy with a billion stars, the galaxy's gravity well isn't phased much. Alternatively, if a small galaxy with 10000 stars has a mass gain of a thousand stars, its gravity well will deepen significantly, which will redshift photons greater than its larger counterpart would.

Observations:

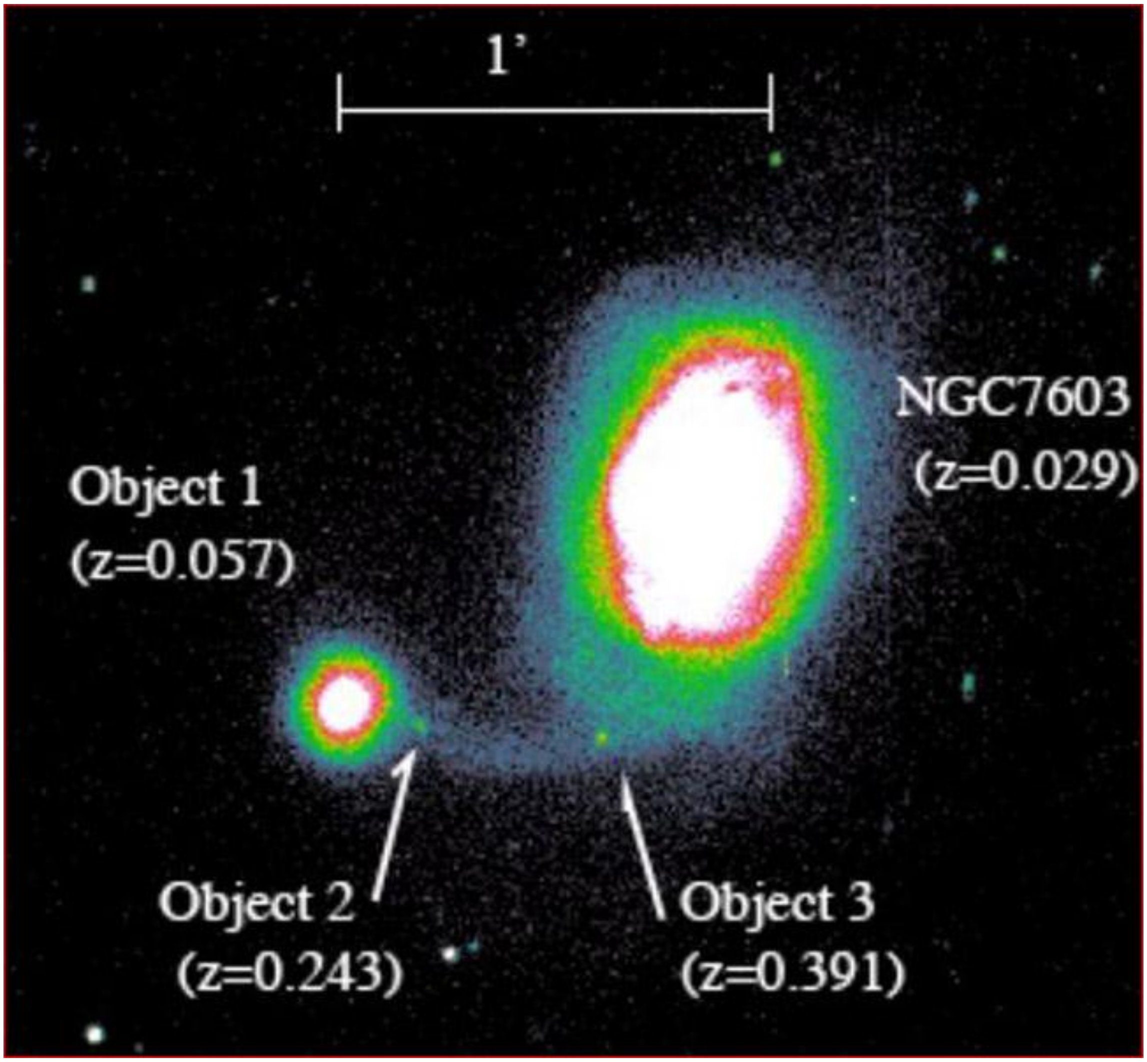
The following objects with higher z values are not farther than the objects they appear to be interacting with that have lower z values.



Obs 1

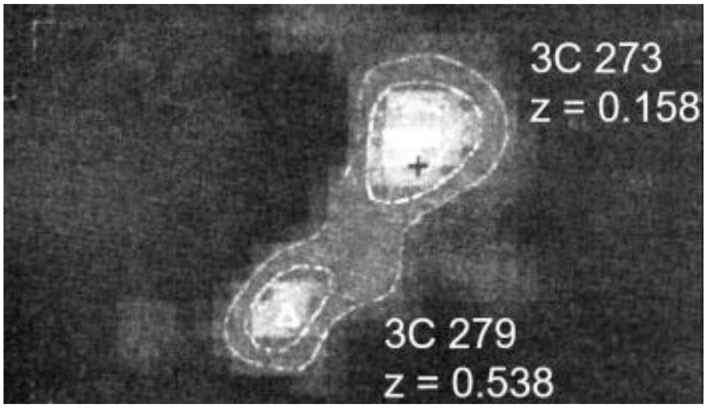
Source: http://cas.sdss.org/dr7/en/tools/explore/obj.asp?id=587727943496892689

(Obs. 1) The larger object (blue spiral galaxy) has a z=0.228000 and the smaller object (red object) is z= 0.710081 . Notice the bridge connecting to the smaller object from the spiral galaxy where it is funneling the mass from the larger object. The smaller object (red) is gaining mass from the larger object. The smaller object has such a high z because the amount of mass it's gaining relative to its size is high.



Obs 2

(Obs. 2) Here, object 2 (z=0.243) and Object 3 (z=0.391) is gaining mass from their surroundings. Object 3 (z=0.391) has a higher z than object 2 (z=0.243) because object 3 (z=0.391) is gaining a higher rate of mass relative to its own size than object 2 (still both are gaining mass from the bridge). Object 1 (z=0.057) has a higher z value than NGC 7603 (z=0.029), which may mean object 1 (z=0.057) is gaining mass from NGC 7603 (z=0.029) through the arm connecting them. "Everything points the four objects being connected among themselves, but how to explain the different redshifts? Or, in case all of them have different distances, how to explain that their projections in the sky give this extremely low probable configuration?" (Lopez-Corredoira M., 2002).



Obs 3

(Obs. 3) Here the smaller (z=0.538) object is in the process of gaining mass from the larger (z=0.158) object, giving the smaller object a high z value.

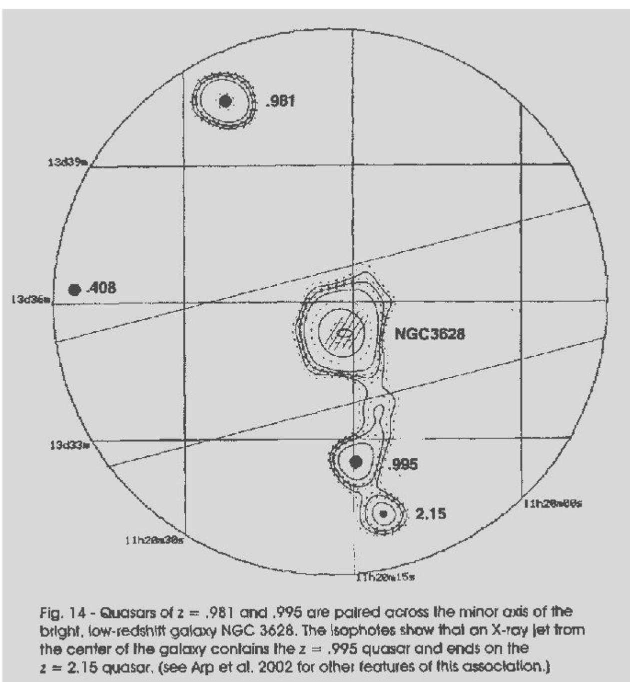
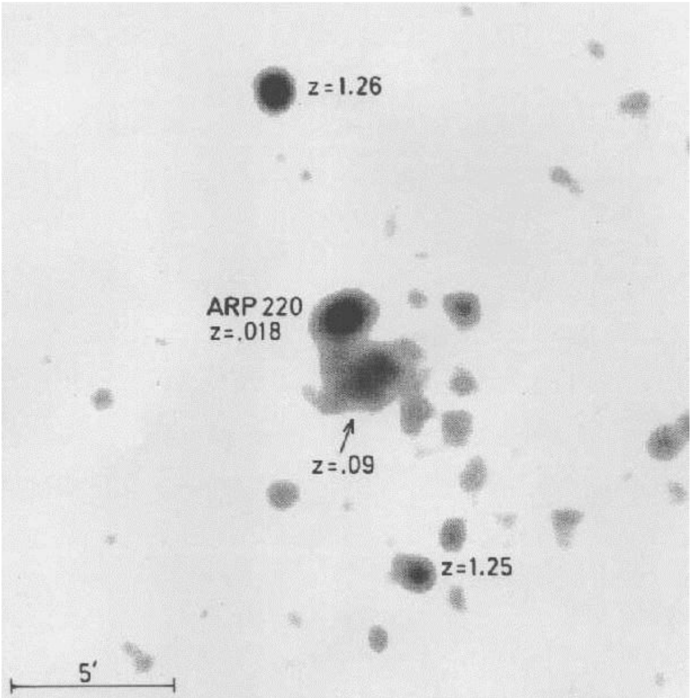


Fig. 14 - Quasars of z = .981 and .995 are paired across the minor axis of the bright, low-redshift galaxy NGC 3628. The isophotes show that an X-ray jet from the center of the galaxy contains the z = .995 quasar and ends on the z = 2.15 quasar. (see Arp et al. 2002 for other features of this association.)

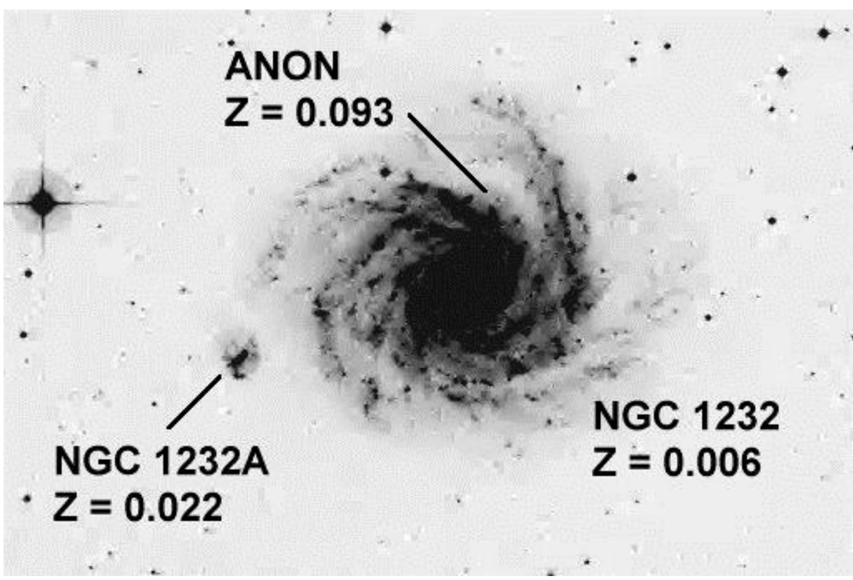
Obs 4

(Obs. 4) Here the object on the bottom (z=2.15) is gaining mass from the objects above it. The smaller object (z=.995) is in the process of gaining mass from Ngc 3628.



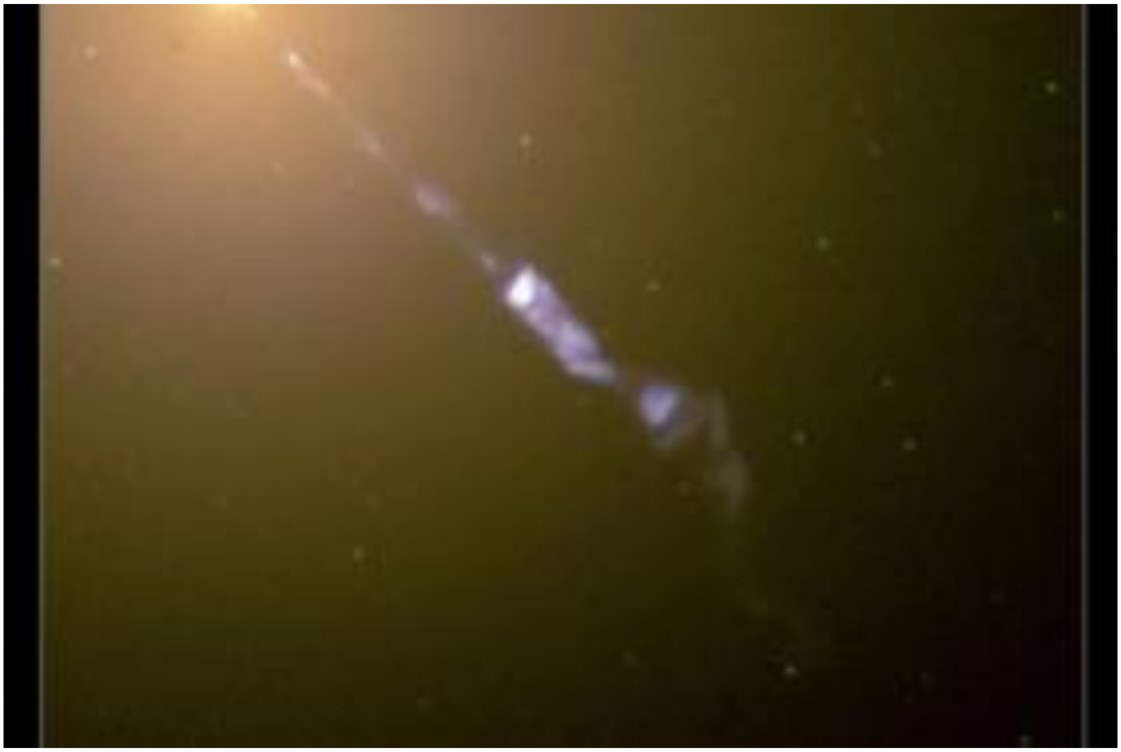
Obs 5

(Obs. 5) Here the z=.09 object is gaining mass from arp220. The z=1.25 object connects via a bridge to Arp 220 and is gaining mass also from the objects above it. The mass gain gives these objects a higher z value.



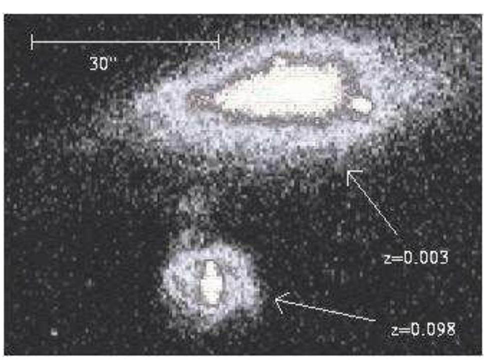
Obs 6

(Obs. 6) Here Ngc 1232a is gaining mass from Ngc 1232 via its spiral arm giving it a higher z value.



Obs 7

(Obs. 7) Now here is the opposite. The biggest blue shift ever observed. This cluster was ejected from m87. The clusters gravity well is weakening as you can see from the trail (matter is dispersing). M87 is tugging on the star and stripping the cluster of its mass as it tugs on the cluster. The ejected star cluster has a blue shift of 1,026 kilometers per second. It's such an extreme blue shift because the gravity well of the cluster is in the process of weakening at a rapid rate. "The final combined radial velocity is −1026 ± 13 km s−1" (Caldwell N., et al., 2014)



Obs 8

(Obs. 8) Here the smaller object is gaining mass from the larger object. "MCG 7-25-46 (or UGC 7175) (Fig. 11) was also analysed by Arp [21]: a system with two galaxies connected by a bridge and with different redshift: z = 0.003 for the main galaxy and z = 0.098 for the small one" (López-Corredoira M., Gutiérrez C.M., 2005).

The cause:

I propose an object in the process of gaining mass at a high rate produces a high z value. This proposition is not to be negated if the following possible explanation of the phenomenon is incorrect. The fact still remains, an object in the process of gaining mass will produce high z values to an external observer.

Possible mechanism:

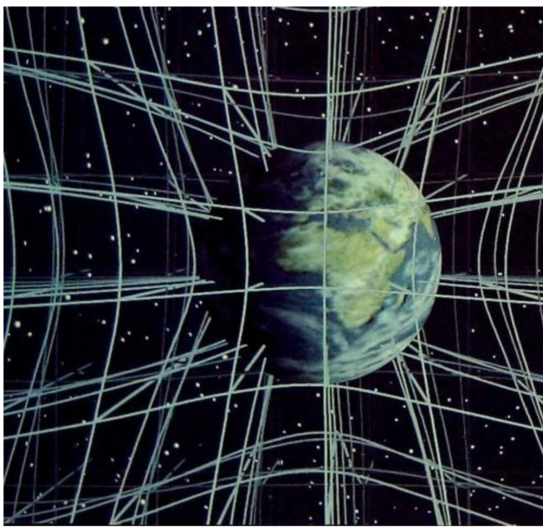


Figure 1

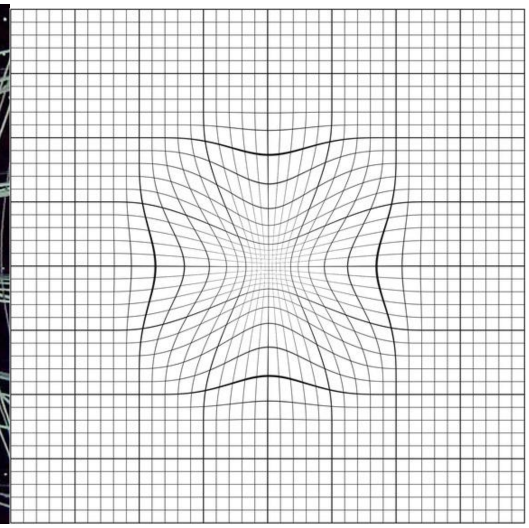


Figure 2

Now, I will explain one such possibility and will use the proposed cause to explain the underlying concept of the phenomenon. These high z value objects gravity wells are strengthening when observed. When photons travel up a gravity well, photons are redshifted, hence, I propose, when photons travel up a strengthening (figuratively stretching and deepening gravity well), these photons will further stretch, producing a higher z value for mass gaining objects, after the photons leave the gravity well, they are further stretched because the edge of the strengthening gravity well (which is gaining mass) is in the process of moving away from the photon (to the center of mass). Light gets red shifted further when it traverses and departs a gravity well of an object during the strengthening of the gravity well. One can use the trampoline analogy to picture this phenomenon, although the analogy is somewhat a misconception, it is alright to use for the sake of understanding the phenomenon. But the accurate analogy is using this grid (fig. 1) and taking out a plane (fig. 2) to understand what's happening. Keep in mind the grid/gravity well (fig. 2) has to be in the process of changing strength to shift the z values of the photons traversing, so you can picture the gravity well increasing in the image. The more mass the object gains, the more stretched each box further becomes surrounding the object, which stretches photons traversing the stretching zones, these stretched boxes also get pulled inwards as a whole to the center of the gravity well during mass gain of the object in the center of the gravity well. When the light escapes the gravity well, these photons further get stretched as they travel intergalactic space, this is because the gravity wells edge is moving away from the emitted photons (lines converging to center of the gravity well), stretching the photons further. Keep in mind, the photons stretch as described when the gravity well is in the PROCESS of changing its strength (gaining mass). When the gravity well decelerates (stops gaining mass) photons no longer get stretched. Conversely, the more the inner boxes compress, the more blue shifted photons may become that are traversing the compressing zones. Now when an object in a gravity well loses mass, the inner boxes expands (redshifts) and the outer boxes unstretch. As light traverses the unstretching boxes, photons blue shift, after the light leaves the gravity well that is losing mass, the weakening gravity well lines at the edge of the well chases the photons as it unwarps, blue shifting photons further. We will only focus on the photons that redshift/blueshift at the outer boxes for now as this is the last state photons go through after leaving the object and during their journey from a changing gravity well, which are observed from earth. Also the inner boxes (center of gravity well) are engulfed by the circumference of the matter in the well, so we won't focus on that for now. From now on, when I talk about strengthening gravity wells, I am referring to the previous explanation, but will be representing the phenomenon through 2d fabric analogies to make it easier to explain.

A trampoline thought experiment to understand the mechanism:

Imagine a zero mass speaker flush with the trampoline fabric with its cone pointing upwards emitting a steady tone that traverses the fabric radiating 360 degrees from source. Now if we give mass to this speaker it will sink (this is analogous to a young galaxy accreting matter from intergalactic space), bending the trampoline fabric and creating a well, while it is in the process of sinking in the deepening gravity well, the tone will get stretched along the stretching fabric proportionately to the rate of stretch of the fabric (red shifted). When the speaker sinks to its end location, the tone will go back to its normal pitch. Now picture that speaker in the middle of the trampoline and its your ear (the milky way), and there are many speakers (galaxies) across the trampoline (the observable universe). The trampoline is huge and its fabric is a mile above the ground. Also now the sound waves can only travel on the plane of the trampolines fabric (sound waves represent light waves). Now make all these speakers sink all at once in the fabric while emitting a steady tone (galaxies forming and gravity wells strengthening). They will all sink to the ground beneath the trampoline at the same time and stop at the same time. The speakers should accelerate to say 99% the speed of sound by the time they reach the middle of their descent to the bottom, and start to slowly decelerate after the midpoint of their descent, and come to a stop at the bottom (you can picture the affect that is produced analogous to a train that is stopped and has a horn that will emit a steady tone, you are standing on the tracks, the train starts accelerating away from you, it reaches 99% the speed of sound after 500m, then the train slows down and stops at 1000m, you will hear a constantly stretching sound, then a constantly compressing sound, then the normal pitch eventually is heard when the train is stopped. The train is analogous to a gravity well of a galaxy. The faster the train goes the faster its rate of gaining mass is). Now back to the trampoline, the amplitude of each speaker will increase as it drops, just like a galaxies light increases the larger it gets. The closest speaker to your ear (your ear being at center of trampoline) will be heard as having their first sounds continuously stretching, then after the midpoint of their descent in the fabric, they start compressing as the speaker reaches the bottom. When it stops sinking, the sound goes back to normal (pre drop pitch) as heard by your ear. Of course there's gravitational redshift but we will ignore that for simplicity. Now let's wait for the furthest speaker's sound to reach our ear when its amplitude is loud enough to be heard (when the furthest speaker is heard when it just passed the halfway point of sinking in the fabric, and just started decelerating with a speed of 98% speed of sound). We will lock the observation time to this point. While you hear the normal tone of the first speaker, at the same time you will hear the more stretched sound waves of a next farther speaker (as its decelerating in the well just before it stops at the bottom). From a speaker further on you will hear its sound more stretched (had less deceleration time so its heard when it was sinking faster relative to a closer speaker to your ear). The farther the speakers are from you, the less time they had passing the midpoint in the falling phase, thus less deceleration time, thus a more stretched sound accordingly will be heard by your ear, since sound from a farther source takes longer to reach your ear, we hear them in that look back time (when heard at the locked observation time that was set earlier). When we hear the farthest speaker, we are hearing them while they were sinking in the trampoline just after the midpoint of descent (beginning to decelerate), so this sound will be stretched the most when your ear hears it. The furthest speakers tone will be stretched the most, relative to the closest speaker, when heard at the center at the same time.

Notice all the speakers (galaxies) on the trampoline were not moving apart and still gave an increasing stretched tone/redshift the further you heard/looked back in time. Rather the sinking gravity wells gave the illusion they were moving apart when interpreting z value as a Doppler effect phenomenon. Also note we can make the observable universe trampoline contract and the further speakers will still be heard by the ear as stretched sound waves, up to a certain contraction rate. If the observable universe is expanding, it would mean its expanding at less than the Hubble rate because the stretching of sound from gravity wells morphing was not taken into account properly when calculating the expansion rate. Now imagine the closest speaker to your ear lifting up and its gravity well is weakening, this represents mass loss, we will now hear the tone from that speaker being compressed as it lifts up (blue shifted).

On a tangent:

Now let's place hypothetical smaller speakers at the edges of the circumference of the trampoline (observable universe cosmic horizon). These speakers also sank at the same time the speakers in the trampoline (galaxies) sank. If we hear these speakers (ear in middle) when they were exactly at the midpoint of their drop in the fabric (99%

speed of sound), it would be the most stretched sound heard by your ear. Perhaps cmb is light seen from clumps of matter initially coming together when the universe turned from a dense to a condensing state (during photon decoupling). This would be the fastest rate of a gravity well strengthening. If we had a ring of extra small speakers placed around these smaller speakers (beyond the observable universe), perhaps their tone may not even be heard yet as its too faint to detect, the sound waves of these speakers is from when they were before the midpoint of the drop in the fabric and have a lower amplitude so we can't hear them much if at all and are compressed sound waves relatively as the speakers have not reached top speed when falling in the gravity well when heard (cmb blue shift anisotropies, matter at the very first stages of condensing). The larger amplitude/more redshifted sound from these extra small speakers is still travelling the fabric (intergalactic space) and will be heard in the future.

Using the concept of the Integrated Sachs Wolfe effect:

The Integrated Sachs Wolfe effect states cmb blue shifts climbing a super clusters gravity well that shallows due to the expansion of the universe. "Photons have energy gain when photons traverse decaying gravitational potentials of large scales structure, the Integrated Sachs-Wolfe (ISW) effect" (Manzotti A., Dodelson S., 2014). So if this affect is possible, the affect I hypothesize is very plausible. We know gravity wells can strengthen and weaken. Thus, photons blue shift climbing up a shallowing gravity well caused by mass loss of the object in the gravity well. Furthermore it only would make sense, if we reverse the scenario, the opposite would happen, that light would redshift climbing a deepening gravity well from an object gaining mass in said gravity well. If my theory is correct, dark energy is overestimated (but still exists at a less energy density) , or non-existent.

Another way you can imagine a strengthening gravity well red shifting photons is picture a small hula hoop within a larger hula hoop. This is a top view of a gravity well. Now connect a light wave with one end to the small hula hoop, and the other end to the large hula hoop. The light wave's direction should travel opposite the center of the gravity well. Now decrease the circumference of the smaller hula hoop, which represents a strengthening gravity well. The light wave will stretch.

I provided numerous observations of objects that are closer than their high z values places them under current interpretation that support the hypothesis. All these objects are increasing in mass at a high rate. Mass accretion from intergalactic free floating matter adding itself to a gravitational source, star formation, stars collapsing into black holes, increasing positive pressure, increasing energy, increasing rotation curve of a galaxy, and any other factors that deepen the gravitational well of an astronomical object as a whole will stretch photons (after they are emitted) that are traversing the gravity well during the transformation of the gravitational well. The closer galaxies have lower z values because their gravitational well sink rates are settled or slowing down to a stop due to their observational mature phase. Their red shifted light has already passed earth eons ago, we are now observing them in the blue shift. The greater the look back time, the younger the galaxy is. The younger the galaxy is when observed, the faster its gravity well is strengthening (analogous to the trampoline fabric stretching). The faster a gravity well is deepening, the further photons will be stretched that traverse the morphing gravity well. The light from these far galaxies also traverse across the edges of the gravity wells of galaxies in between the earth and the far galaxy. The further the galaxy, the more gravity wells it will traverse (think gravitational lensing), which means the light from farther galaxies will become even more redshifted before reaching earth. This has far reaching consequences, one of which is the universe isn't expanding as fast as we think, it still can be expanding, but less than the current calculated rate of expansion because the mentioned phenomenon is attributed incorrectly. Alternatively, galaxies that have slowed down their rate of mass gain will have a sinking but decelerating gravity well, which will blue shift photons relative to younger photons that traversed the high sink rate well. Conversely, gravity wells of galaxies that are in the process of losing mass are attached to gravity wells that are lifting/"shallowing". This process blue shifts photons traversing the morphing gravity well. Since photons blue shift going down a gravity well and redshift going up a gravity well, if any light traversed down the shallowing gravity well, it would be blue shifted further than normal. In the scenario of a photon travelling up a deepening or shallowing gravity well, the photons travelling up the well will always have a higher z value then photons travelling down the same gravity well. Redshifts are not a good tool to measure distances unless certain modifications are made. The redshifts of quasars suggest they are extremely far away objects, but they really are not as far away as their z values state. Their z values are high because quasars are mass gaining machines, which redshifts their light. Related galaxies with discordant redshifts are numerous, where extremely redshifted galaxy a and extremely blue shifted galaxy b exist in a binary galaxy system, which proves redshift is not a good indicator for distance. Actually what's happening here is one galaxy is gaining mass from the other causing the mass gaining galaxy to redshift and the mass losing galaxy to blue shift. To not even glance at these redshift anomalies because they don't agree with todays accepted big bang model and expanding universe model is just preventing advancement in the field, halting future discoveries. Major discoveries have been made from observations that make one say, "hm that's weird". It's time we look at these redshift anomalies and ask why? Of course if an object is approaching or receding from us it will have a z in accordance of travel, but these travel speeds are overestimated based on the total z value observed because they do not take the proposed phenomenon into account.

Furthermore, extragalactic blue shift anomalies occur because these objects are losing mass to a nearby object that is pulling matter away from the extragalactic object. The extremely blue shifted star cluster near m87 is one example (Obs 7). The star cluster may have been flung out, but the gravitational pull from m87 wants it back, and feeds on the stars masses by pulling on it, making the stars lose mass. This weakens the gravity well of the star, blue shifting the light it emits as the light traverses the shallowing gravity well.

A quasar is an object with a high rate of mass gain, thus its gravity well is strengthening at a rapid rate, thus its redshift will always have a high z value. The higher the rate of change of its mass the higher the observed z value will be. All high-z quasars are not as far away as current estimates place them based off current understandings of z values and how they relate to an objects velocity.

The implications of this phenomenon have one of three outcomes for the nature of the observable universe.

A. the universe is not expanding as fast as estimated. (If dark energy is an illusion due to redshift anomaly, than what's making the universe expand? It may be possible that radiation is making the galaxies move away from each other). IF there is a repulsive force of dark energy, it is less than today's estimate because the redshift illusion makes the expansion seem faster than it really is.

B. the universe is static (redshifts will still appear higher the farther we look).

C. the universe is contracting (the redshifts will still appear higher the farther we look).

On a tangent:

My hypothesis may also have the answer to the pioneer anomaly. If you look at fig 2, pretend this is the suns gravity well and the sun is situated in the center of the gravity well. Now if the sun is losing mass, the outer boxes will get unstretched (compress) as the sun loses mass. If the pioneer is traversing these stretched squares that are in the process of shrinking, due to the sun losing mass, the pioneer crafts would seem to move closer to an observer on earth, that is if earth also is on a point on fig 2 where the boxes are stretched and in the process of unstretching. Pioneer and earth will move towards each other. This may further prove my hypothesis.

I also suspect the flyby anomaly is due to the earths morphing gravity well. Now pretend the earth is in the center of the gravity well in fig 2. It's possible that when earth loses mass, the compressed inner boxes will uncompress and a satellites trajectory across it may shift the satellite away from the earth. The outer boxes that are stretched will uncompress and at the same time and move away from the center point of the gravity well and further shift the satellite away. The solar limb shift may also be explained by the sun losing mass. Let's put the sun back in the gravity well in fig 2, the inner compressed boxes will stretch and move away from the center of the gravity well as the sun loses mass. To an observer (if they are situated in a compressed box orbiting the sun), light emitted from the limb of the sun to earth will have a longer path and diagonally traverse more boxes that are stretching. Light emitted from the center of the sun to an observer on earth will see light that traversed less distance, thus less space time that is stretching.

This hypothesis may also apply to the coronal heating problem. If we imagine the sun in the center of the gravity well in fig 2, and the sun is losing mass, the inner compressed boxes that the suns circumference occupies will uncrompress/stretch. The observed heat may be space time shifting it outwards from the sun's surface in all directions, producing the coronal heating problem phenomenon. Imagine a reverse event horizon around the sun's photosphere.

Tests that may prove hypothesis:

These tests are not definitive, as they may not be large scale enough to reproduce the phenomenon, but is a good starting point.

1. Black hole/white dwarf and star binary system where black hole/white dwarf is feeding on star.

The star that is losing mass should have an unusually blue shifted feature and the accretion disc of the black hole should have a redshift relative to the star. This accretion disc would be located at the gravity well lip of the black hole so the redshift may not be extreme in this area.

Another option is with a binary star system with equal massed stars orbiting a common point then fling away. When the stars are closest, their shared gravity well will deepen, when they move away from each other, their shared gravity well will get shallower. Higher redshift should be observed when the stars are approaching each other.

2. Merging galaxies.

When merging galaxies are in the approach phase towards each other, their mutual gravity well will deepen the closer they get. Producing an increasing redshift the closer they get. After the galaxies pass through each other and move away from each other, their mutual gravity well will shallow. If we observe enough merging galaxies that are approaching at different phases, and we average the z of each phase, we would find the z values increase the closer the galaxies are. After the merging galaxies pass through each other, a blue shift may be observed (if each galaxy isn't perturbed too much after they pass through each other). If a galaxy is perturbed, each galaxy will try to pull in its own matter that was disturbed, which may deepen each galaxies gravity well, which may cause some red shifting.

3. Supernova

View a galaxy, measure the z of the stars, and wait for a supernovae. When a super novae occurs, it will redshift during its collapse phase relative to its pre supernova z value (gravity well deepens), and blue shift during its rebound phase (gravity well undeepens a small amount from losing mass). There may be some outer blue shifting affects during the supernova collapse because the pre supernova gravity wells lip will rise as the middle of the gravity well sinks in a smaller more compact well. There also may be a red shifting affect from the ejected material coalescing away from the star. There also may be blue shifting occurring for ejected matter speeding towards the observer. To eliminate these errors, we can test a stars light behind but viewed directly beside the supernovae as this light will traverse the supernovas changing gravity well. But the best test would be observing the exact center of the supernova, blocking out the outer disc and ejecta, and observe this light. The expected result should be a redshift on collapse (higher z than z was before supernova) and a blue shift after rebound when the star loses some mass. These values should be compared to the stars z pre explosion. Pre explosion the star should b z=x, during collapse it should be z>x, during rebound it should be z<redshift observed during collapse.

But, if a supernovas gravity well strengthens so fast that its own light gets trapped in its own gravity well, that would mean the supernovas original self would not be seen previous to the explosion, and its super nova would appear in the night sky from nothing. So if we observe a super nova but the star couldn't be observed previous, this would prove my hypothesis also.

4. Stars that are losing a lot of mass. These stars should be blue shifted relative to their star neighbors who are not losing much mass relatively. These comparison stars light should not travel through the gravity well of the mass losing stars (to prevent red shifting errors)

5. Laser

Detect light from a laser accelerating away from a stationary sensor. The laser speeds away at speed x. Measure redshift. Now detect light from the laser as the sensor accelerates away from the laser and the laser accelerates away from the sensor. The sensor should accelerate away from the laser at speed x/2 and the laser should accelerate away from the sensor at x/2 in a straight line. One would assume the measured redshifts would be the same of each setup. But due to the gravity wells changing for both sensor and laser for the latter setup, and only the gravity well of the laser changing for the former setup, the measured Doppler shift from these two experiments should differ even though their separation speed is the same.

6. LHC

Set up an array of lights that the particles will traverse perpendicular to the light waves. Measure the z of light before and as accelerating particles speed towards and pass each other intersecting through the light rays. Light should redshift during the pass. Note: the particles cannot just pass the light beams at a steady speed, there must be an acceleration from a lower velocity to a higher velocity while the particle is passing the light (simulating an increasing/changing gravity well attached to the particles during transit through the light).
We can also smash particles which would momentarily create an increasing gravity well upon impact. If light traverses the impact location, it will redshift then blue shift. This test is only valid if the gravity well upon impact or acceleration is large enough in change.

7. Accelerate 2 objects in the same direction. The gravity well of each object will increase. Emit a photon from object a to object b. Observe the z value. When both objects are at a constant speed (not accelerating), emit a photon from object a to object b, this z value should be lower than the z value observed during acceleration phase.

8. Jupiter

When Jupiter speeds towards the sun, its gravity well may increase. Thus its light should redshift when observed from earth

The test to prove if the universe is expanding, contracting or static.

1. Identical quasars or galaxies at different distances:

Locate a galaxy nearby, locate a distant galaxy that looks exactly the same (but has a smaller apparent radius because it's farther, redshift shouldn't be used to determine distance), both these galaxies must have the same rate of mass gain or loss. Measure their z value. If the z value is the same, the universe is static. If the further objects z value is higher than the closer object, the universe is expanding. If the z value of the further object is less than the nearer object, the universe if compressing. Subsequently, quasars would be a better test. Find a nearby quasar, and a faraway quasar. If these are lone quasars, with no gas clouds or companion galaxies, this would mean their gravity wells are not strengthening. We must also be sure the quasars jets are releasing matter at the same rate (optimal state would be no jets as this tells us there's not much mass loss). If the z value is the same for both objects, the universe is static. If the further objects z value is higher than the closer object, the universe is expanding. If the z value of the further object is less than the nearer object, the universe if compressing. This test will yield the rate of expansion or compression if enough data is compiled.

Time affects:

Now that we have an understanding of how gravity wells that are changing affect light. We can explore the effects on time. When a gravity well is in the process of strengthening, time slows down, when the gravity well stops strengthening, time speeds up until it reaches a certain rate, then remains constant. When a gravity well is in the process of losing mass, time speeds up, when the gravity well stops losing mass, time slows down to a certain rate, then remains constant.

Formula blueprint:

Z total = the affects of (change in GW well of the observable universe) + (change in GW of Milky Way) + (change in GW of observed galaxy) + (Velocity of observed galaxy) + Distance of the galaxy.

Conclusion:

This paper proposed that when an objects gravity well is in the process of strengthening (by gaining mass), the light observed during its gravity well strengthening phase is redshifted accordingly. The greater the look back time, the younger the galaxy, the younger the galaxy when observed, the faster its gravity well is strengthening. The faster a gravity well is deepening, the further photons will be stretched that traverse and depart the morphing gravity well. I challenge the community to create and perform tests to prove this phenomenon. Redshift anomalies are not taken seriously and they hold the key to understanding the observed redshifts of galaxies. The proposed mechanisms of light red shifting in a strengthening gravity well may be one possibility of the redshift anomaly, but there may be other mechanisms that produce the redshift anomaly. Please do not dismiss the paper if you do not agree with the deeper details of the hypothesis, because the main point still remains, a high z value is produced when an object is gaining mass at a high rate, and this should not be dismissed merely because of possible disagreements elsewhere in the paper. I am confident that objects that are in the process of gaining mass produce higher z values and this discovery has been backed up by observations presented in this paper. Another thing im certain about is using redshift as a measuring tool only for calculating velocities of observed galaxies is faulty when the rate of change of the gravity well of the observed galaxy is not taken into account. I am also confident that the further we look into space, the more redshifted an object is not only because it's moving away, but also because the farther an object, the more it is in the process of gaining mass due to the look back time. Furthermore I am confident that the rate of expansion is less than the Hubble rate. It is also plausible that the universe is static or contracting, which is also less than the Hubble rate of expansion. A galaxies redshift is not related to the Hubble velocity alone. It's time we stop avoiding redshift anomalies. Redshift anomalies in Quasars with a high-z, binary galaxies with a mass gaining companion with a discordant high-z, and the furthest galaxies with high-z values all have a similar trait, their mass is increasing at a high rate at time of observation. Z total = the affects of (change in GW well of the observable universe) + (change in GW of Milky Way) + (change in GW of observed galaxy) + (Velocity of observed galaxy). If we can work out a proper equation based on the z total blueprint mentioned, we can calculate the rate of expansion or contraction of the universe with great accuracy. With an open mind and observational evidence, we have the power to understand the true nature of the universe. Please do not hesitate to contact me if you would like to be a part of this discovery and have some insight you would like to share.

References:

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5. Ratcliffe H., 2010, Anomalous Redshift Data and the Myth of Cosmological Distance, Vol 4, pages 693-718.

Images:

NGC 7603: Nordic Optical Telescope La Palma, Spain

UGC 7175: 2.2 m telescope at Calar Alto

M87: Hubble telescope

NGC 3628 H. Arp et al.: NGC 3628: Ejection Activity Associated with Quasars

Arp 220: Rosat PSPC

NGC 1232: Digitized Sky Survey (POSS2/UKSTU Blue)

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