A Theory of Everything

Atomic Expansion Theory according to Mark McCutcheon

Excerpt from *New Age Physics,* a book being written
by
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You can read the full draft of *New Age Physics:* PDF or DOCX.
I have also included all my related articles below.

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Summary

Atomic and Subatomic Expansion Theory - A Theory of Everything

Atomic Expansion Theory according to Mark McCutcheon, concerning General Relativity and the four fundamental forces
Atomic and Subatomic Expansion Theory
New model of the atom, strong and weak nuclear forces and chemical bonds
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Atomic Expansion Equation to calculate gravity in Expansion Theory
Electromagnetism
Energy
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Expansion Theory Articles (Reviewed and edited by Mark McCutcheon)

- *Expansion Theory* - Our Best Candidate for a Final *Theory of Everything*?
- Standard Theory and Expansion Theory Maps
- Breakthrough in Faster-Than-Light Travel and Communication, and the Search for Extraterrestrial Intelligence (SETI)
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Atomic Expansion Theory

Atomic Expansion Theory is the long sought theory of everything for our physical reality that we have been searching for, and it is well described in the book *The Final Theory* of Mark McCutcheon. What follows is a very condensed version of his book, and I am not here demonstrating why or how this is true. I felt there was no need to re-write McCutcheon's book where everything is so well explained, so please refer to it in order to familiarise yourself with his theory.

Atomic and Subatomic Expansion Theory

Atomic Expansion Theory, which could easily have been called instead Subatomic Expansion Theory, is a working unified field theory uniting all main four interactions of nature: gravity, electromagnetism, and the strong and weak nuclear forces. This entire theory of everything has one principle only, and from there we can explain the entire physics, while uniting both the physics of the very small and of the very large. This new principle is that there is only one fundamental particle in existence, it is the electron. Everything is made of electrons constantly expanding at a certain rate, including atoms. Any kind or size of particles, energy, magnetic fields, radio and TV signals, heat and light, are made of expanding electrons.

New model of the atom, strong and weak nuclear forces and chemical bonds

According to Mark McCutcheon, in Expansion Theory the electrons bounce off the nucleus of the atom instead of orbiting it. The protons and neutrons are also made of expanding electrons, and they push against each other in their expansion. So the nucleus also constantly expands, explaining why the bouncing electrons are reaching higher every time, creating that constant small expansion of the atom at the edge.

The atoms coming closer to each other glue together by exchanging bouncing electrons between their nuclei, and this is how molecules are formed, the chemical bonds. This elucidates the strong nuclear force within the atom. There is no need for an invented nuclear force within the atom in order to keep the protons and neutrons together and prevent the nucleus from flying apart, it is easily understood with expansion theory that these particles are simply pushing against each other in their expansion.

A neutron is a less stable proton, and a neutron becomes a proton by simply losing one of its electrons, while the electrons within it are trying to find balance and become more stable. This describes the weak nuclear force. All this is very well explained in McCutcheon's book

where all the equations are derived. All four main forces of nature can be explained in a logical manner through the expansion of matter, the other two being gravity and electromagnetism.

Summary

Gravity

The bouncing and expanding electrons within the atom are responsible for the small expansion of the atom, and this expansion is gravity. All objects in the universe expand, and as per Mark's mathematical equations, they double in size every 19 minutes. This expansion of Earth underneath our feet is what keeps us on the ground. Distance shrinks between objects because objects expand, not because there is a mysterious attracting force acting at a distance (Newton's Law of Universal Gravitation), or because objects distort the fabric of space-time like a rubber sheet, making smaller passing objects to follow the curves made by larger ones moving on that sheet (Einstein's Theory of General Relativity).

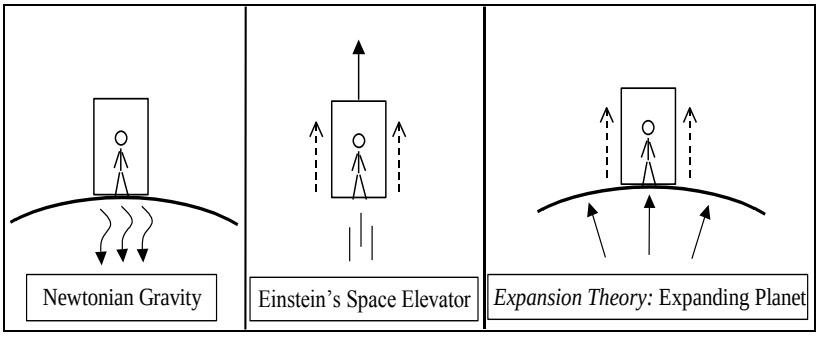


Fig. 2-3 Progression of Ideas Leading to Expansion Theory

If we consider the expanding-electron concept, which in turn leads to equally expanding atoms, a new gravitational theory emerges that actually mirrors Einstein's famous elevator-in-space thought experiment, where standing on Earth is entirely equivalent to being accelerated upward in space.

The force we feel underfoot is then due to our resulting expanding planet, with dropped objects all equally approached by the ground rather than the other way around, while the underlying expansion is unseen as everything expands equally, maintaining constant (relative) sizes. This would create the appearance of a force somehow holding us to the ground and pulling all objects equally downward regardless of mass, just as Newton proposed. And while Einstein opted for "warped space-time", atomic expansion suggests this far simpler and more literal possibility.

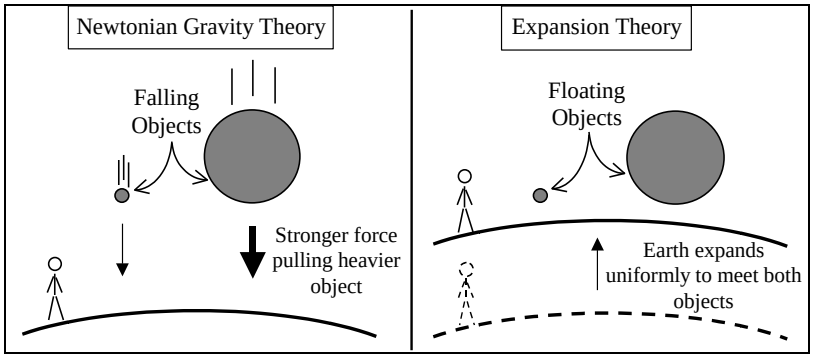


Fig. 2-2 Equally Falling Objects: Newton vs. Expansion Theory

This shows why a small marble and a cruise liner dropped from a certain height will both reach the ground at the same time, although according to McCutcheon's equations, expansion theory would eventually show a difference. From these insignificant heights however they are both *free floating* objects, instead of *free falling,* experiencing no g force, until the Earth in its expansion reaches them at the same time.

The expansion of Earth is an acceleration (9.8 m/s^2), so the higher you are, the faster and the harder the Earth will hit you. The air resistance you feel all around you is the air being pushed up in the Earth's expansion. The atmosphere does not escape into space precisely because it is pushed by the Earth's expansion, creating air pressure.

Summary

Two types of distance decrease to calculate gravity

In Expansion Theory, Mark McCutcheon explains that atomic objects, like planets for example, are moving relative to each other. To calculate the decrease in distance between two objects moving in space, meaning to calculate gravity, his equations take into account two types of distance decrease.

The absolute decrease in distance due to the own internal expansion of the objects, and also the further relative decrease in distance due to the fact that space between the objects does not expand along with the objects, since space does not exist as a concrete thing made of matter. Each moment that the objects have expanded further, means that there is an additional overall decrease in distance between the objects, because space does not expand along with the objects.

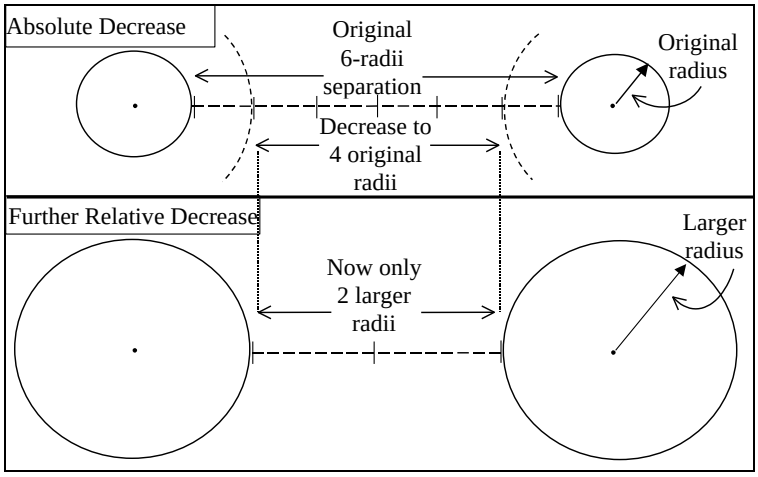


Fig. 2-6 Absolute and Relative Distance Decreases

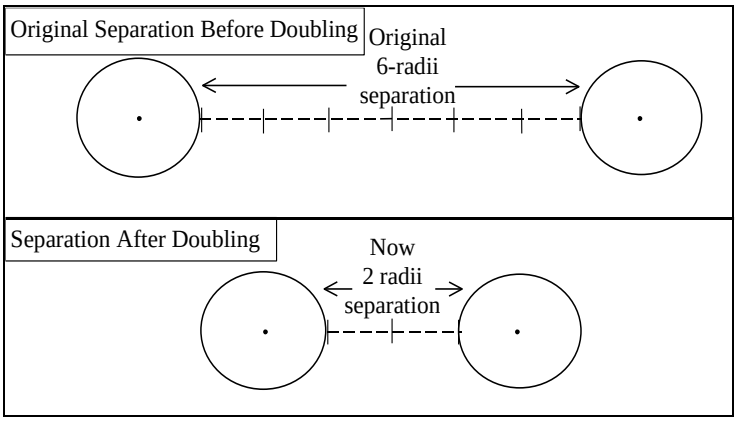


Fig. 2-7 Same Scenario as in Fig. 2-6 as it actually appears

Both types of distance decrease taken into account in the expansion equation, which replaces Newton's Law of Universal Gravitation, would be true even for objects at rest compared to each other. Of course, they are never at rest, since in their expansion distance is constantly decreasing between them, thus expansion is motion.

With motion there is an additional type of distance decrease or increase related to my third type of expansion of matter, which I will cover in chapter 2, due to an object expanding toward us or reducing in size away from us as it moves. This motion is unrelated to gravity. For example, a spaceship with thrusters moving in space. The distance decrease or increase between the spaceship and anything else would be in addition to the dual distance decrease due to gravity.

Summary

Atomic Expansion Equation to calculate gravity in Expansion Theory

If we leave Newton's Law of Universal Gravitation behind, which has now been superseded by Expansion Theory, then gravity, or the decrease in distance between all objects, is now explained by the simple inner expansion of all atoms and atomic objects. This dual distance

decrease is now calculated using Mark McCutcheon's Atomic Expansion Equation, and you will find the derivation in his book *The Final Theory:*

The Atomic Expansion Equation

$$D' = D - n^2 X_A \cdot (R_1 + R_2) / (1 + n^2 X_A)$$

where $X_A = 0.00000077 /s^2$ (or $7.7 \times 10^{-7} /s^2$)

"The *Atomic Expansion Equation* above calculates the changing distance, ***D'***, between two expanding objects of radius R_1 and R_2 over time. The top portion of the equation is the *absolute* decrease in the original distance, ***D***, between the two expanding objects as they take up more space, and the bottom portion is the further *relative* decrease or scaling down of this distance over time in comparison to ever-expanding objects. The variable, ***n***, is the number of seconds that have passed since the original distance was measured between the two objects, and the value shown for X_A is the same universal atomic expansion rate calculated earlier - which never changes. This is the equation for all falling objects and all objects floating in space as they effectively approach each other due to their mutual atomic expansion (an effect currently thought to be due to Newton's attracting gravitational force).

"We can now see that there are sizable differences between the equation of Newton's *Law of Universal Gravitation* and the *Atomic Expansion Equation*. In *Expansion Theory* the 'attraction' between objects actually results from the objects expanding, so the resulting equation is based only on the size of the expanding objects - there is no mass and no attracting force as in Newton's equation. Another obvious difference is that Newton's equation states that the gravitational force diminishes with the square of the distance between objects, yet no such distance-squared term appears in the bottom portion of the *Atomic Expansion Equation*."

Summary

Electromagnetism

There are no more electric charges, or positive and negative electrons or particles. McCutcheon has shown how the simple expansion of the electron can justify all observed phenomena in physics, including why we thought subatomic particles were charged. Electricity is simply expanding electrons inside the atomic realm, meaning they don't expand greatly outside the atomic realm, while pushing each other on wires (current flow).

Magnetism is expanding electrons outside the atomic realm in a cross over effect which expand greatly in clouds of electrons. Their movement is explained in *The Final Theory* as moving from locations with a surplus of electrons to other locations depleted of them, in order for the electric circuit or system to reach a balance of electrons.

Energy

Light and heat are clusters of electrons expanding greatly and freely outside the atomic realm, they expand at the speed of light. Everything is essentially made of electrons, including all radiant energy phenomena. Energy including light is made of matter instead of photons, meaning light is made of clusters of different sizes of expanding electrons, defining intensity. Radiant energy is still physical in nature, it is made of electrons. So an entity made of light, or of energy, is still part of our physical reality, it is still made of matter.

The difference between a positively and a negatively charged atom depends respectively on if they lose or gain electrons. Then of course they either repel or attract each other depending on if they have missing electrons or a surplus of them. Ions are atoms or molecules in which the total number of electrons is not equal to the total number of protons, giving the atoms or molecules a net positive or negative electrical charge. Two ions with the same number of electrons would repel each other, as their electrons are bouncing off their nuclei. If one atom has less electrons while the other has more, then they will attract each other, an electron will more readily then bounce from one nucleus of one atom to the other nucleus in search of balance. Again, this is the origin of chemical bonds in expansion theory. Therefore, in expansion theory there is no positively or negatively charged particles, but there are equivalent concepts to explain chemical bonds and other charged particles phenomena.

See the table below taken from *The Final Theory,* showing all forms of energy according to Mark McCutcheon. Only the last one, kinetic energy, is considered to be a real form of energy, and I will elaborate on that point later in my postulates of The Theory of Universal Relativity:

Table 5-1 Today's Energy Terms According To Expansion Theory

EUPHEMISM	**PHYSICAL DESCRIPTION IN *EXPANSION THEORY***
Gravitational Energy	An *effective* attraction between all objects due to their ongoing expansion as objects composed of continually expanding atoms.
Strong Nuclear Force Energy	The natural cohesion of protons and neutrons in the nucleus of an atom due to their tremendous ongoing subatomic expansion against each other.
Electric Charge Energy	Attracting or repelling forces caused by a *crossover effect* of externalized expanding subatomic particles acting between subatomic and atomic realms.
Chemical Bond Energy	A manifestation of the *crossover effect* between subatomic and atomic realms, occurring between individual atoms rather than overall objects.
Magnetic Energy	Clouds of expanding electrons surrounding conductive objects, attracting or repelling via the *crossover effect* between subatomic / atomic realms.

Electromagnetic Energy	Bands or clusters of freely expanding electrons that continually push one another through space due to their ongoing inner subatomic expansion.
Kinetic Energy	The *apparent* absolute energy of motion "possessed" by objects, but which is actually only a purely *relative* motion effect between objects.

Summary

Motion and orbits

Motion is entirely geometry based, the geometry of expansion, and motion is relative. All orbits can be explained by this expansion. Here are two figures showing what is happening when two expanding objects pass each other in straight lines in space, and how it leads to a natural orbit effect, when you consider that they are expanding proportionally with everything else:

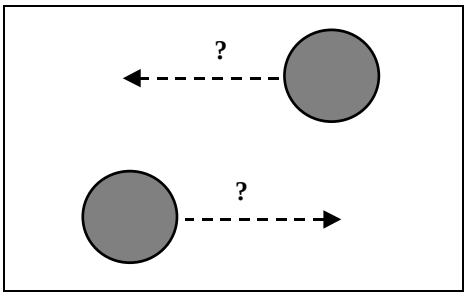


Fig. 3-5 One Object Speeding past Another

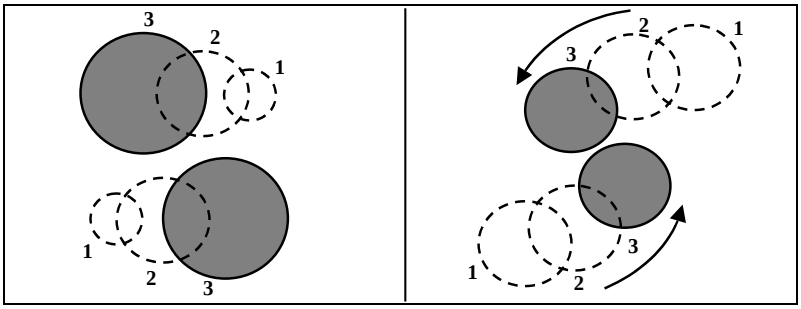


Fig. 3-6 Concept (left) and Result (right) of the Natural Orbit Effect

The two objects are expanding in their straight line trajectories as seen on the left, but this expansion is unseen by us because everything expands proportionally at the same rate, including our instruments of observation, our rulers and ourselves. So what we see instead is what is on the right, the distance is shrinking between these expanding objects, creating the natural orbit effect of all moons and planets. Nothing could ever move in straight lines in the universe.

If you are wondering why the planets of the solar system are not being crushed by the expansion of the sun, if every 19 minutes the sun doubles in size, you need to understand that the planets' orbits are also expanding as the entire solar system is expanding. There is proof of this, one main proof is the Pioneer Anomaly. The spacecraft Pioneer 10 and 11 have

sort of exited the solar system, but strangely enough they appear to be decelerating. They came up with a feeble explanation for this, which does not stand to scrutiny. They are not actually decelerating, instead the solar system is expanding toward them.

There are several other proofs for expansion theory, the last article in this book called *Gravity Breakthrough: Springing into a Gravitational Revolution*, is the greatest proof according to Mark McCutcheon, but it is hard to visualise, and there are other proofs. For example, McCutcheon has for the first time calculated the Gravitational Constant G from first principles, derived from his expansion equations. He shows the derivation in his book. So far it has only been calculated through empirical evidence, meaning through observation instead of through pure reason alone. And his entire book is simply proof after proof that all of physics can be explained through the expansion of electrons and atoms. How could anyone explain the entire physics in a way that makes complete sense, while uniting everything, if he was not right?

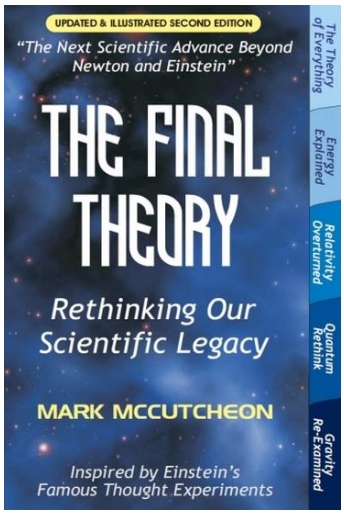
The Moon does not have any gravitational effect on the Earth. The tides of the oceans are due to an internal wobble of the Earth which coincides with the passing of the moon, due to the original formation of the Earth-Moon system. Orbits are entirely a geometric phenomenon, due to the geometry of expanding and moving objects in space.

Gravity depends on the size of the objects, not on their mass, although density still plays a role in gravity on the ground. Gravity is calculated from surface to surface of objects, not from centre to centre. This clarifies several observed trajectory and gravitational anomalies in space and on the Moon. There are no gravitational forces or gravitational waves acting at a distance, or distortion/warping of a so-called space-time, or gravitons. Proofs of these in our science have simply been misinterpreted.

Mark McCutcheon does a great job of debunking Standard Theory in his book *The Final Theory.* It has been written for the layman, for anyone whether they have a scientific background or not. It re-writes our entire physics and is the only working theory of everything that truly has an answer for everything in our science. Dismissing Expansion Theory without reading the book could cost humanity a great deal, and if you reject everything else from my book, at the very least you should give *The Final Theory* a fair chance. Humanity's future depends on it, since at the moment we are not working with the right physics. Most of our discoveries are due to trial and error instead of being predicted from theory, and we have armies of physicists working at great costs on dead end theories. Our current models have served us well, they were describing our reality well to a certain extent, but with Atomic Expansion Theory we could achieve much more.

Summary

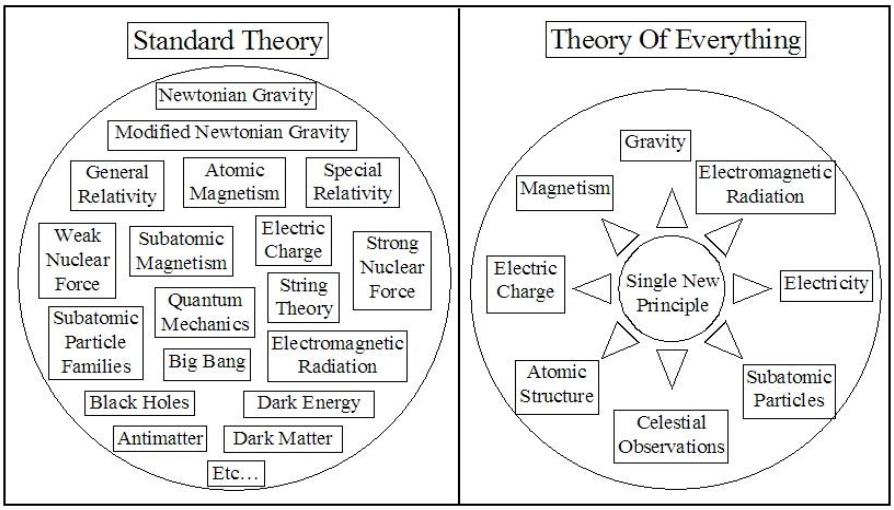
Expansion Theory Articles



Expansion Theory - Our Best Candidate for a Final Theory of Everything?

By Roland Michel Tremblay

On 4 March 2010, New Scientist magazine published an article entitled "Knowing the mind of God: Seven theories of everything", where Michael Marshall reviewed the most promising candidates for the Theory of Everything, the Holy Grail of theoretical physics. In the end, there was no solid conclusion as to which, if any, may lead to this final theory. Each is quite different from the others, demonstrating that there is still no fundamental physical or theoretical agreement on the operation of our universe, and all still fall under the general umbrella of our known scientific paradigm, or Standard Theory.



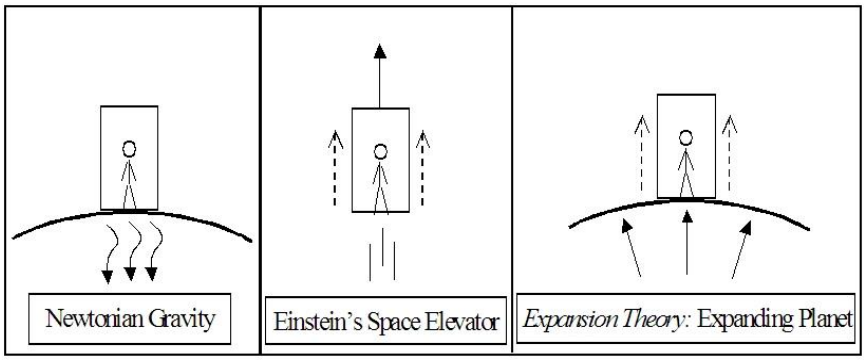
Yet, this grand final theory is expected to provide a clarifying simplicity and understanding that is unknown today, implying that it may even lie outside our Standard-Theory umbrella. What if the answer is much simpler and more straightforward than any of the current proposals, perhaps even lying right underfoot?

This final theory should unite all four fundamental forces (gravity, electromagnetism, and both strong and weak nuclear forces); identify a fundamental principle or particle that does this and you are well on your way. According to Mark McCutcheon, a Canadian-born electrical engineer and science author, the stable and ubiquitous electron is just such a particle - provided that it operates on a fundamental principle of constant subatomic expansion rather than today's endless, unchanging "charge".

$$D' = \frac{D - n^2 X_A \cdot (R_1 + R_2)}{1 + n^2 X_A}$$

This switch from “charge” to “expansion”, termed Expansion Theory, has surprisingly far-reaching implications, not only for electric charge itself, but also for the nature of the atom and subatomic particles, atomic bonds, magnetism, electromagnetic radiation and gravity. As such, this singular new concept offers potential scientific explanations for all known forms of matter and energy, offering further solutions to the puzzling mysteries and paradoxes inherent in such theories as Quantum Mechanics and Special/General Relativity - the very reason we seek a final Theory of Everything. This certainly qualifies as thinking outside of known science, as may ultimately be required for a final theory, but is it science? To sincerely answer this question we must equally apply it to today’s theories as well; there must be no free passes on such important issues.

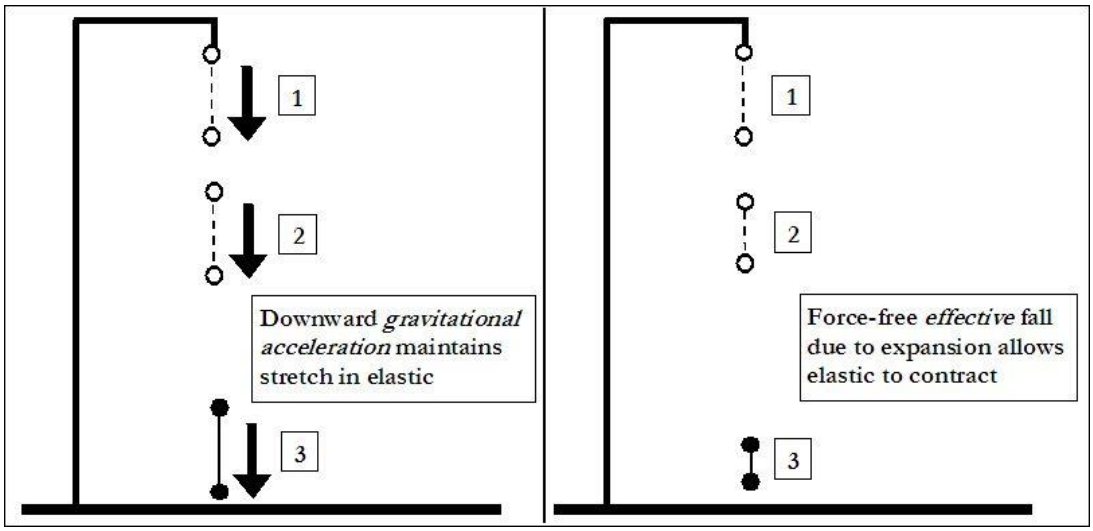
Consider gravity, simultaneously one of the most common yet mysterious phenomena in our science. Is it a force, as Newton claimed, with no clear reason why it should attract rather than repel, no known power source, and which still puzzles scientists searching for speculative “graviton particles” presumed to mediate its force? Or, despite this most widespread conceptualization both taught and used today, even in our space programs, is it instead Einstein’s “warped space-time” - an entirely different physical explanation spawning its own puzzles and searches for equally speculative “gravity waves”? Even the very concept of “dark matter” arose to address a tenfold discrepancy between current gravitational theory and cosmic observations - mysterious invisible matter that neither emits, absorbs, blocks or reflects any type of radiation, yet is now presumed to be the dominant component and gravitational influence in the universe.



But if we consider the expanding-electron concept, which in turn leads to equally expanding atoms, a new gravitational theory emerges that actually mirrors Einstein’s famous elevator-in-space thought experiment where standing on Earth is entirely equivalent to being accelerated upward in space. The force we feel underfoot is then due to our resulting expanding planet, with dropped objects all equally approached by the ground rather than the other way around, while the underlying expansion is unseen as everything expands equally, maintaining constant (relative) sizes. This would create the appearance of a force somehow holding us to the ground and pulling all objects equally downward regardless of mass, just as Newton proposed. And while Einstein opted for “warped space-time”, atomic expansion suggests this far simpler and more literal possibility.

Intriguing perhaps, and while Expansion Theory does provide compelling parallel explanations for many observations, are there any cutting experiments that might set it apart for validation purposes? Consider holding one object while another of equal mass

hangs from it by an elastic band, then letting go. According to Newton, a gravitational force acts equally on all components, accelerating the entire balanced system of two objects and a stretched elastic downward.



Letting go does not free the elastic to contract, but instead frees the entire system to accelerate, with the bottom mass pulled downward and the resisting inertial mass of the top object now in tow, maintaining the stretch in the elastic caused by the earlier hanging mass. The gravitational pull also on the top object merely matches that on the bottom object to ensure its mass can also attain the same acceleration rather than slowing the fall of the overall system, with the stretched elastic then still remaining.

But this is not what happens. The elastic actually contracts during the fall, pulling the objects together. Yet this should not occur according to either Newton's gravitational force or Einstein's "warped space-time". However, it should occur if the planet's expansion was initially pushing the held object upward, forcefully stretching the elastic before the drop - an influence that would vanish during free-fall, which allows the elastic to contract as everything floats free while the ground approaches. This simple cutting experiment would appear to seriously challenge both Newton and Einstein, according to the Scientific Method where even a single negative result disproves any theory, while supporting the expanding-atom concept of gravity.

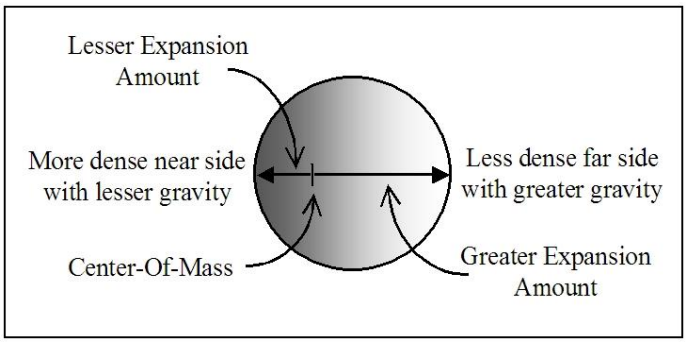
But this would also appear to raise serious questions about Einstein's theories of relativity, since Einstein's "warped space-time" concept of gravity hails from his General Relativity theory, which in turn follows on from his earlier Special Relativity theory. Is this really possible? Consider the famous "Twin Paradox" thought experiment, where a speeding astronaut returns to Earth to discover he is much younger than his Earthbound twin. A logical flaw in this paradox claim has been reluctantly but increasingly acknowledged over the years, since "everything is relative" in Special Relativity theory, so either twin could be considered speeding or stationary, removing any absolute age difference. But, should this flaw be pointed out, focus is invariably switched away from Special Relativity since only the astronaut underwent actual physical acceleration in his travels, which is instead the realm of General Relativity. This switch is generally presented as a resolution to the issue - but is it?

First, this switch to General Relativity invalidates the still often-claimed support for Special Relativity from both this famous thought experiment and from all related physical experiments, such as speeding particles in accelerators, or atomic clocks on circling airplanes or satellites. Yet this fact is typically neither discussed nor even acknowledged, leaving many with the impression that the Twin Paradox and related physical experiments still fully apply to and support Special Relativity theory.

Second, even the switch to General Relativity appears to be a flawed solution to this issue. One of the cornerstones of General Relativity is the Principle of Equivalence, which states that the acceleration due to gravity on Earth is entirely equivalent to being accelerated through space at an equivalent rate - no experiment should be able to discern any difference. This means that even though this acceleration would produce near-light speeds within months, there should still be no physical difference between this scenario and that of standing on Earth the whole while.

So, according to both the "everything is relative" aspect of Special Relativity and the Principle of Equivalence in General Relativity there would appear to be no such phenomenon as "relativistic time dilation", despite widespread citation of iconic theoretical and experimental claims to the contrary. Not only would this seem to question some central claims of Special Relativity, but doubly so for General Relativity considering the earlier drop test as well. And notably, the expanding matter concept differs not only with the drop-test prediction of both General Relativity and Newtonian gravity, but also with the time dilation claims related to Special and General Relativity, providing very different explanations of these scenarios.

Interestingly, another test of this new concept of gravity would be to weigh an object directly on the surface of the far side of the Moon. Since the Moon is about a quarter the size of Earth, its expansion-based surface gravity would be one quarter as well, which is also calculated by Newton's mass-based gravitational equations before revising lunar mass assumptions to match direct surface measurements from our space programs. And while the actual one-sixth surface gravity - only directly measured on the near side and presumed to extend around the lunar surface - is currently explained by assuming a less dense lunar composition throughout, there is now another possible explanation.

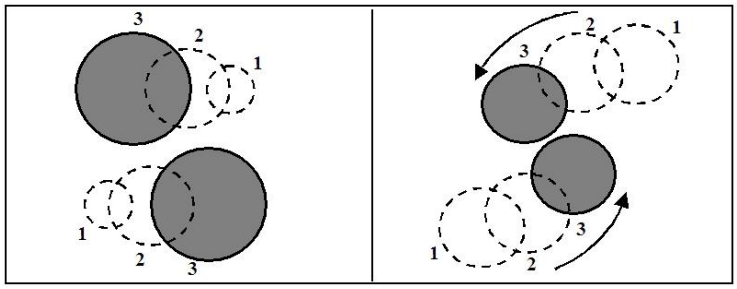


Expansion Theory suggests a varying density, from most dense on the near side to least dense on the far side, which is also in keeping with one of the commonly proposed lunar creation scenarios. In this case, since the expansion of objects would proceed from their center of mass, there would be less expansion force on the near side and more on the far side due to the resulting off-center expansion. This suggests double the surface gravity on the far side to average to the one-quarter gravity suggested by the Moon's size - a fact that would not affect either the Moon's shape or any orbits about it, but could only be determined by direct surface contact.

Atomic expansion also means that ocean tides cannot arise from a lunar influence, but only from internal dynamics within Earth - an inner wobble that in fact must exist according to classical physics, since the center of mass of the overall Earth-Moon rotational system lies off-center within our planet. This view suggests why the passing Moon coincides with rising tides, roughly speaking, but for purely internal reasons that follow from the creation, evolution and ongoing dynamics of the Earth-Moon system.

One of the most celebrated successes of Newton's gravitational-force theory, and a milestone in our science, is the extension of Earth's surface gravity to a forceful "action-at-a-distance" quality that Newton claimed reaches out into space, holding the Moon in orbit. But this proposal not only still has no solid physical explanation for how it might operate - 300 years later, but also offers no explanation for the immense and endless power source that must exist to support such a powerful undiminishing force. We have developed conceptual abstractions to address this issue in the absence of solid physical explanations, but this has left us with an array of speculative gravitational theories and physical explanations.

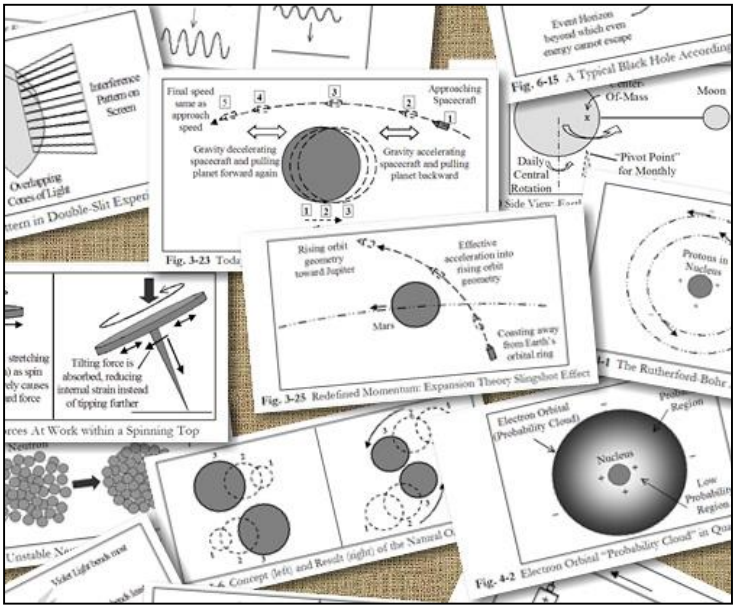
In contrast, the expanding atom concept explains orbits at a distance as an inescapable geometric consequence of surface gravity. It is easy to see, for example, how dropped objects would effectively fall due to planetary expansion alone, and how horizontally tossed objects would similarly curve and plummet toward the ground. Such dramatic momentum change solely due to the geometry of expansion demonstrates that gentler curving trajectories traversing increasing fractions of Earth's circumference would result with greater horizontal speed. Unlike the absolute straight-line momentum suggested by Newton's first law, there is actually no reason such an object would not travel one-third, one-half, and eventually a full orbital circumference about an expanding planet as its speed increased.



Atomic expansion suggests additional explanations for observations throughout our solar system, such as planetary orbits and interplanetary space travel. Consider two planets passing each other while their expansion closes the gap between them. We would never actually see such expansion directly as a size change if we and all other objects expand equally, maintaining constant (relative) sizes, so the closing gap between the objects could only manifest as unchanging planets curving toward each other for some reason while passing. Newton suggested the reason is a still-unexplained attracting force, while Einstein instead proposed four-dimensional warped space-time. However, curves and orbits would also follow quite naturally and unavoidably from the pure geometry of expanding matter alone.

The dynamics of orbiting, expanding moons and planets would also result in the entire solar system and all of its contained orbits expanding as well. This can be shown to explain such

occurrences as gravity assist maneuvers that accelerate spaceships as they pass planets - and where there are no known g-forces in the process - an otherwise mysterious maneuver that lacks proper explanation today upon closer examination. And, at the level of the overall solar system, this expansion addresses widely known puzzling anomalies with the Pioneer space probes and other spacecraft as they travel through the solar system and beyond. These deviations from predicted trajectories can now be considered as possible artifacts of our Newtonian gravitational models, based on a force emanating from a given mass rather than the geometry of expansion.



And, much as expanding atoms replace the notion of "gravitational energy", expanding subatomic particles replace the energies of "electric charge" and "strong and weak nuclear forces". These separate energy concepts similarly become unnecessary abstractions in an atomic model where neutrons and protons are not true particles, but clusters of expanding (not "charged") electrons, and where "orbiting" electrons instead bounce repeatedly off the resultant continually expanding nucleus.

Today's "strong nuclear force" holding the powerfully repelling "positively charged" nuclear protons together (whose required power sources are both oddly absent), is replaced by the crushing force of rapidly expanding protons and neutrons against each other. And the "weak nuclear force" causing occasional nuclear decay further suggests the characterization of neutrons as less stable clusters of active expanding electrons that occasionally eject an electron to become a more stable proton cluster in a more straightforward proposal for this nuclear "decay" process. This concept extends further to chemical bonds, currently attributed to endless electric-charge or electromagnetic energy, and even beyond as external clouds of expanding electrons that we call electric and magnetic fields. Even electromagnetic energy such as heat and light becomes clusters of freely expanding electrons pushing one another through space, while electricity is expanding electrons pushing each other through wires and extending outward as a surrounding magnetic field.

In the end, all known forms of matter and energy become manifestations of the singular unifying phenomenon of expanding matter. Although easy dismissals are tempting with most alternate theories, a closer look may well show Expansion Theory to be much more scientifically viable, comprehensible and verifiable than the other seven "theory of everything" candidates. In fact, such a comparison could be very eye opening indeed.

Mark McCutcheon is author of "The Final Theory: Rethinking Our Scientific Legacy". For further reading on Expansion Theory, visit http://www.thefinaltheory.com

For more information about this new revolution in science, read these excerpts:

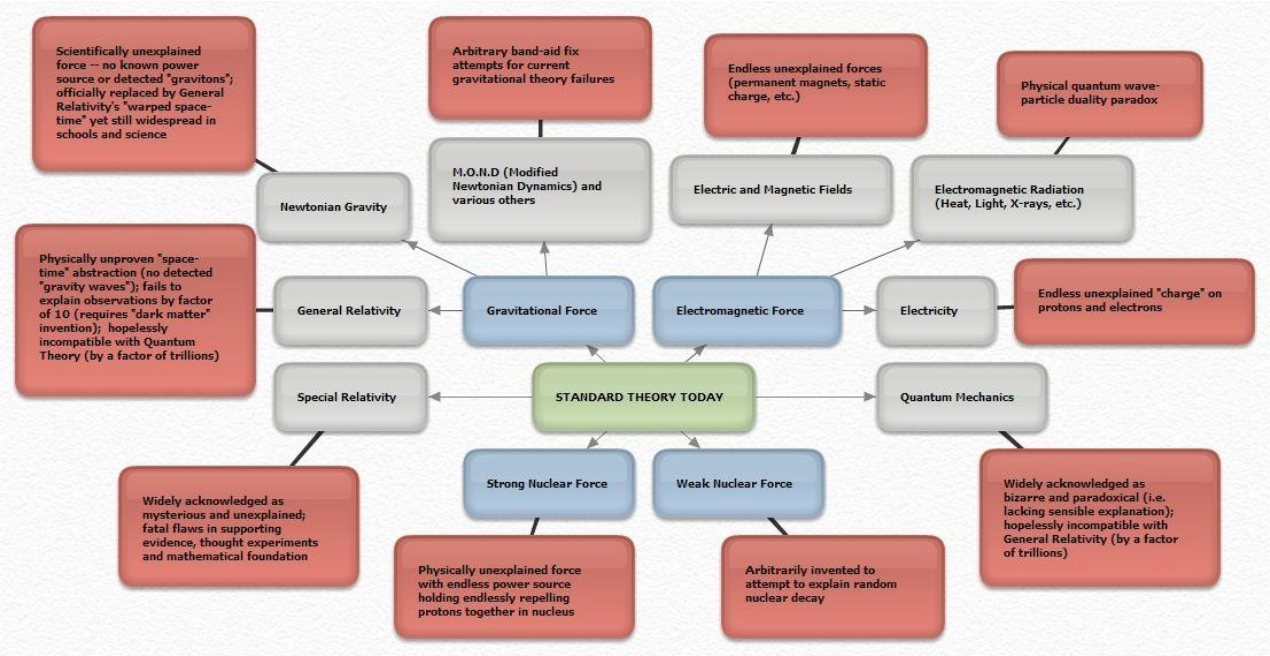
Pioneer Anomaly, Slingshot Effect and Gravitational Inconsistencies Explained
http://www.themarginal.com/pioneer_anomaly.html

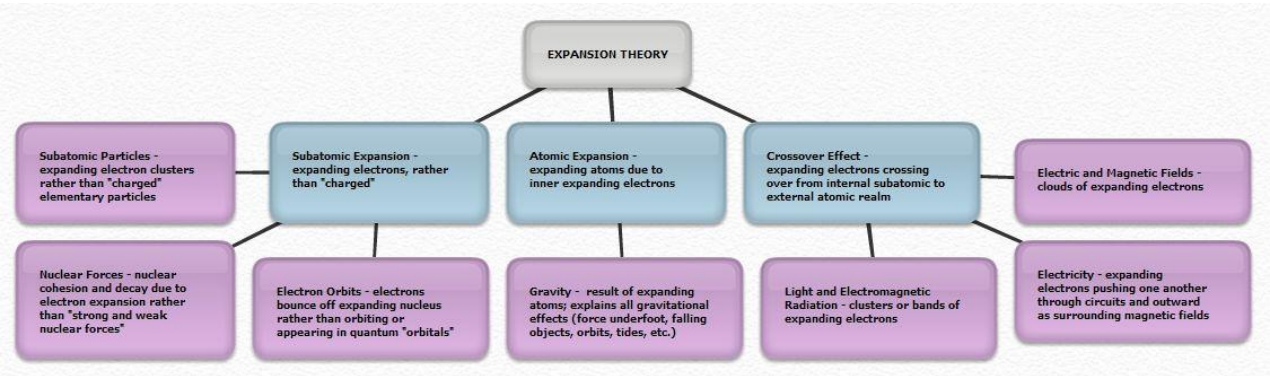
The Final Theory by Mark McCutcheon - Chapter 1 - Investigating Gravity
http://www.themarginal.com/final_theory_excerpt.pdf

Summary

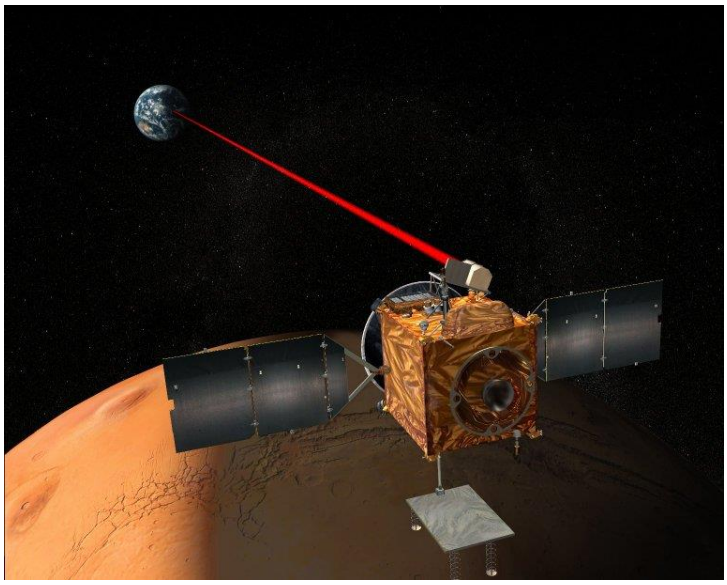
Standard Theory and Expansion Theory Maps

Larger versions available on the HTML page





Summary



Breakthrough in Faster-Than-Light Travel and Communication, and the Search for Extraterrestrial Intelligence (SETI)

Interstellar space-travel and near-instant communication; discovering a network of intelligent extraterrestrial signals; harnessing the mysterious instantaneous quantum-entanglement effect. These are all either science fiction or things we will probably never live to see or understand, correct? Not at all. By the end of this article you will see how clarifying a simple but extremely fundamental misunderstanding in our science legacy makes all of this a viable reality - now.

All Just a Misunderstanding

How can this be? It's not as surprising as it may seem, but follows from the leap of understanding that often occurs when simple misconceptions are clarified – it is just that this particular misconception reaches back centuries to the very nature of matter and energy. Misunderstanding the nature of light, for example, the physics underlying "quantum mechanics" and the meaning of experimental results can easily produce a strangely complex science and an oddly bizarre and paradoxical universe. But is this a true reflection of the world around us, or is something else going on here?

In actuality, much of today's science emerged in much simpler times centuries ago, now forming a legacy of often unquestioned and presumed truths about our world. But on closer examination many of these presumed truths are actually just abstract models and not physical answers at all. This misconception is powerfully reinforced in our educational systems and science programs, locking us into an often-troubled science paradigm of abstractions, contradictions, mysteries and paradoxes.

Newton, for example, only created a mathematical model of his proposed gravitational force, offering no scientific or physical explanation for its still-unknown source of power, its law-violating undiminishing pull across eons of time, or how and why it even attracts matter together at all. Einstein offered a radically different, even more abstract and mathematical model for gravity two centuries later, providing even fewer practical answers, resulting in both models now residing in our science.

But can the singular physical nature of gravity truly be captured by two different theories? Can light from a distant source be simultaneously both a “wave of pure energy” and a “quantum-mechanical photon particle”, only physically “choosing” one or the other based on how it is later observed? Can a magnet cling energetically to a fridge against the constant pull of gravity, yet need no explanation for this endless energy?

Clearing it All Up

So, what is the centuries-old misunderstanding in our science? As mentioned earlier, it turns out to be a simple misunderstanding of the nature of matter and energy. Today we think of matter as passive lumps of mass, with various ethereal energy phenomena actively driving everything. But what if, instead, it is matter itself that is active – both atomic and subatomic matter – and there are no separate “energy” phenomena at all?

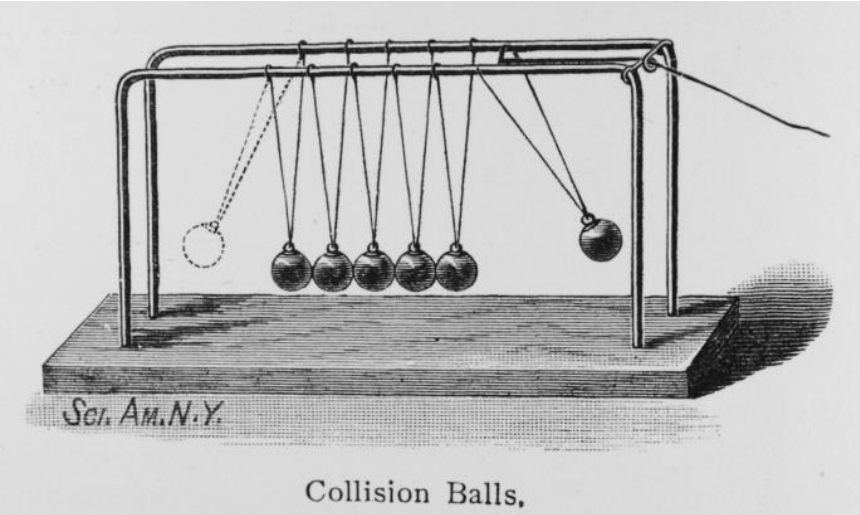
The simplest example of this is a rethink of gravity, where all atoms actively expand very slowly and in unison. Nothing would appear any different over time, but standing on an enormous expanding planet means we would certainly feel this expansion beneath us – as a force pushing upward under our feet. Also, held objects would feel heavy as we essentially carried them along with us while being pushed upward, and would appear to be pulled to the ground when released, actually allowing the expanding planet to strike them instead. All objects would have to “fall” at the same rate, regardless of mass, which is precisely what does occur. Tossed objects would similarly appear pulled to the ground in curving paths that extend further the faster they are tossed, eventually never reaching the ground at all, but continuing around the planet in a continual orbit if tossed fast enough.

Quantum Entanglement Explained and a Communications Revolution Revealed

Today’s science explains quantum entanglement as an experimental observation where two photons from the same light source travel together, then are sent on two separate paths yet apparently maintain a mysterious link with each other. Thus, if one is later altered (such as a change in polarization), the other is instantaneously altered in the same fashion no matter how far apart they may be. This is considered a mysterious faster-than-light communication between two “entangled photons”.

However, with the new understanding, the nature of light is radically changed from separate photons fired through space, to continuous beams of expanding subatomic-matter clusters that our eyes detect to generate the experience of color and brightness. In this case, this is not an experiment with two photons exhibiting mysterious “quantum entanglement”, but merely two separate unseen continuous beams of expanding matter clusters physically connected back to where they were split from one initial beam. Then the more likely explanation of the “entanglement” effect is that an influence altering one beam is conducted along this continuous span of unseen physically connected matter clusters to affect the other.

And, since vibrations in solid objects travel faster the denser the material, the speed of conduction through the extremely dense span of such subatomic-matter clusters in light may well be extremely rapid – even far exceeding the speed of light. The “entanglement” experiments appear to suggest this possibility of conducting signals along beams of light at speeds that so far appear to be instantaneous, providing a practical possibility for faster-than-light communication.



Collision Balls.

Crucially, advanced species would likely use such communication along existing beams of starlight rather than generating light or radio waves and waiting for them to physically cross space at the relatively slow speed of light. An analogy for the difference between these two signal-transmission methods can be seen in the desktop toy with a line of hanging metal spheres suspended next to one another, often called Newton’s Cradle. When one sphere is pulled back then released to swing and strike the others, a sphere at the far end is immediately ejected. A long line of such spheres would allow transmission of such a signal to the far end in this manner far faster than it would take for a single sphere to swing that same distance on its own.

Likewise, the new understanding suggests we might develop ways to look for such rapidly conducted signals hidden within existing starlight that already connects us with the distant stars, rather than today’s method of looking for conventional light-speed signals as embedded features that move along with the beam. There could well be a hidden interstellar Newton’s Cradle-style internet all around us, awaiting any civilization that reaches this fundamental understanding of matter and energy. We could also find a way to conduct such a signal within the light of our own sun, revolutionizing telecommunications in the process.

Much More to Come

This new understanding rethinks everything, showing that even space travel is no longer limited by Einstein’s claimed "speed of light limit". Such apparent limits from particle accelerator evidence simply stem from our misunderstanding of the true nature and behavior of the accelerating "magnetic and electric field energy". These "energy" fields are

actually fields of expanding subatomic particles which, by nature, expand at the speed of light, hence particles in these accelerators could never possibly go faster when powered by such means. Also, apart from the practical propulsion challenges, the fact that our spacecraft have never come close to light-speed has nothing to do with such a speed limit in nature, but is more because we haven't truly tried since we believe today's light-speed myths.

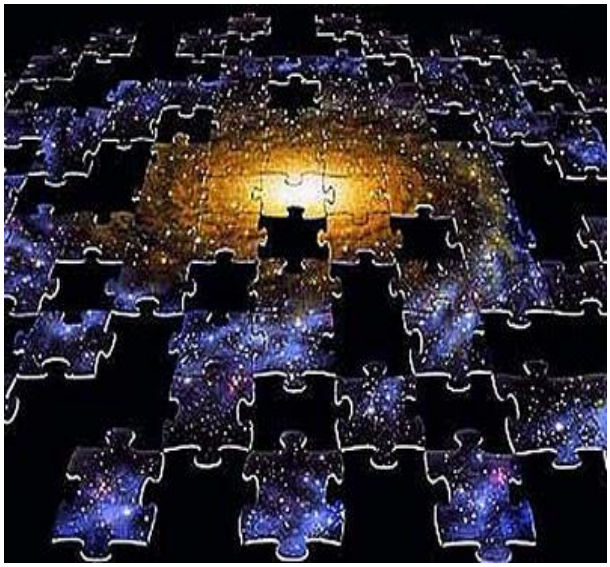
The power-source violations of the "law of conservation of energy" by gravity, magnetism, and many other observations also now vanish. "Quantum mechanics" is as a mere fanciful model for a much simpler physical manifestation of expanding subatomic matter, suggesting viable and simple new advances toward detecting entire networks of intelligent faster-than-light extraterrestrial communication conducted along existing starlight. Gone are the physical mysteries and confusion of "quantum entanglement" and "quantum paradoxes", which, it turns out, never were true physical mysteries at all, but mere human misconceptions of a far simpler physical reality right under our noses. The need for communication satellites circling the globe may well now be a thing of the past, and real-time robotic "virtual reality" exploration of distant moons and planets could be a reality for us, controlled instantaneously from here on Earth.

Is such a revolution worth studying, considering how many billions we are spending today on telecommunication research, quantum computers, satellites, SETI and other technology? I think so.

Photos: 1) Nasa, 2) Scientific American 3) ESO

Summary

Dark-Matter, Dark-Energy and the Big-Bang All Finally Resolved



The Crisis in Cosmology

Today's crisis in Cosmology is perhaps best demonstrated by an apparently accelerating expansion of the universe where a 'Dark Energy' must be postulated to justify this extraordinary acceleration apart -- an energy that itself defies both explanation and the Law of Conservation of Energy.

And the crisis only deepens considering there would have to be between 5 and 50 times more matter in the universe for Einstein's gravitational calculations to match observations, which is why unseen 'Dark Matter' was conjectured to keep these calculations "correct", and account for the "missing mass".

A further reason for this crisis is the now familiar 'Big Bang' theory -- the current consensus belief backed by the attendant vested interests, and therefore largely unquestioned, but which actually fails under objective analysis showing a universe that is not expanding apart at all. Objective observation shows a universe where billions of stars organize into inwardly spiraling galaxies that group into larger stable Galactic Clusters, then further into enormous Super Clusters that thread throughout the universe providing definition even on the grandest scales.

The fact that one camp solidly and consistently reports this stable observational structure of our universe on all scales while a separate camp powerfully and enthusiastically promotes a completely incompatible "Big Bang" / "Dark Energy" ever-accelerating universe merely reinforces the enormity of the crisis in today's Cosmological community.

Deepening the Crisis: Painting the Wrong Picture of Our Universe

However, despite the enormity of this crisis, it can be readily resolved once we identify where it all began -- a fundamental flaw in Hubble's Law which incorrectly assumes that redshifts observed in starlight shifted toward lower frequencies correspond to velocity away through space. But first it is worth taking a brief overview of the journey that brought things to this point:

Earth was once considered flat and at the center of the universe until it was found to be round and in a Sun-centered solar system as only a small part of a huge galaxy. And even our galaxy, the Milky Way, was later found to be one out of billions of galaxies in our

immense universe. Meanwhile, the universe itself changed from three dimensions to presumably four -- once time was included, and from entirely regular matter to apparently mostly invisible matter filling the cosmos. It even changed from a static universe to one coasting apart, and now even a shocking accelerating expansion.

This creates a picture of a universe composed of a literal 'four-dimensional space-time fabric' bursting forth from an actual 'Big Bang' creation event, with unseen exotic physical 'Dark Matter' filling the universe, and a new form of unexplained energy -- a mysterious 'Dark Energy' repelling everything apart ever-faster. To counterbalance increasing acknowledgement of the complete lack of solid physical and scientific grounding for much of this picture is a unified front of increasingly fortified scientific consensus and continually growing Nobel Prize support.

This process has resulted in a number of key assumptions and theories becoming effective 'laws of nature', after which, by definition, observations must fall in line and not conflict to suggest other interpretations. And while this is an important process for scientific advancement, it can potentially entrench incorrect 'laws of physics' into our science for indefinite periods of time, sometimes with disastrous results. Indeed, even suggesting conflicting interpretations once a 'law' was established was a very dangerous act that history shows often carried severe penalties; it is important to note that today's science has its own tight control and dismissal mechanisms that can indefinitely entrench detrimental 'laws' for reasons of vested interest just as effectively as in times gone by.

Resolving the Crisis: Where It All Began -- "Hubble's Law"

One such example is Edwin Hubble's assumption nearly a century ago that an observed redshift in starlight to lower frequencies indicates a star's motion away from us in space -- based on a simple analogy to the known Doppler Shift of moving sound sources in air. This Doppler-like assumption was made at a time when light was presumed to be a wavelike phenomenon similar to sound, and when there was far more interest in the enormous cosmological implications of Hubble's assumption than the actual immense differences between light and sound.

Sound, for example, is simple compression waves conducted at the speed of sound in an air medium, whereas, even in Hubble's day, light was considered a somewhat mysterious 'electromagnetic energy wave' that somehow always traveled at constant light-speed -- and with no conducting medium at all. Further, light was increasingly considered an even more mysterious quantum-mechanical phenomenon that is somehow simultaneously also a 'photon particle', only settling on either wave or particle once detected.

Despite these serious problems with Hubble's initial Doppler-inspired 'redshift equals velocity' assumption, the intrigue and controversy created by a possible expanding universe coasting from a 'Big Bang' creation event tipped the scales, entrenching both "Hubble's Law" and this radically new cosmological picture into our science. The increasing observations of redshifted starlight all around us now had to align with Hubble's apparent

'law of nature', which could now only mean everything was moving away and apart, locking cosmology into this line of thought ever since.

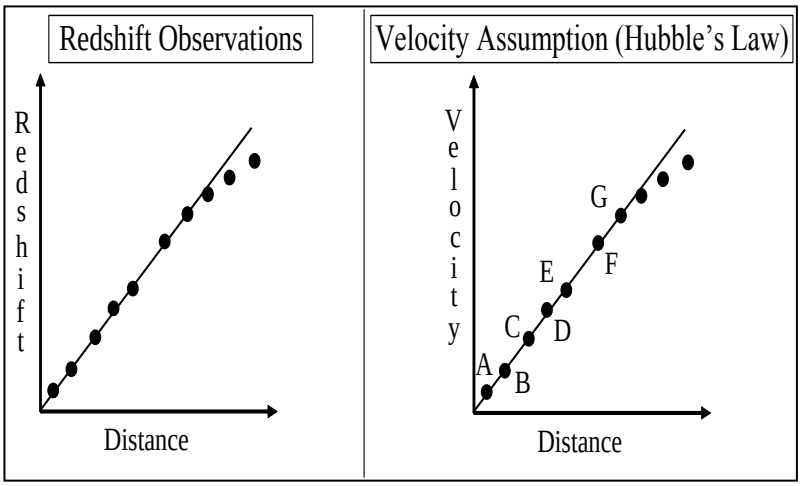
So powerful was this view that it now dominates our understanding of the universe despite the fact that light is nothing like Doppler Shift-able sound waves -- and that light is also easily red-shifted merely by passing it through materials such as common plastics. Given this fact, the redshifts observed in starlight across millions of light-years of space filled with all manner of materials and gases might not be particularly surprising -- redshifts could simply indicate a great distance across space, and not a Doppler-like velocity at all.

The Problems with Hubble's Law Deepen

One of the most critical problems with Hubble's "redshift equals velocity" claim is that it contains a clearly fatal logical and physical error that has been overlooked for nearly a century now. If the universe were actually expanding as Hubble claimed, it would produce nothing like the straight-line, regular spacing of the associated Hubble-Law diagram. As the plot progresses to ever-greater distances it also represents observations that are ever further back in time as well.

The universe is now believed to be about 14-billion years old, with billions of galaxies dotted throughout it at such great distances that we can only reasonably describe them in terms of light years -- the distance light travels in a full year. Even the nearest galaxies are millions of light-years from us, with most of them billions of light-years away across the observable universe extending 14 billion light-years in all directions.

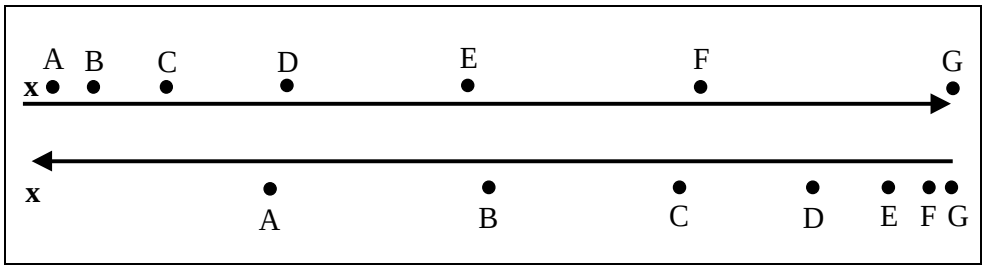
As such, the points plotted on the diagram below represent redshift measurements and the associated velocities as required by "Hubble's Law" for galaxies at observed distances of one billion light-years, two billion light-years, three billion light-years, etc. And, of course, these are presumed velocities that were occurring one billion years ago, two billion years ago, three billion years ago, etc., since it took that long for their light to reach us.



Cosmologists are well aware of this, frequently stating that looking out into space is equivalent to looking back in time, yet they have failed to follow this understanding to its inevitable, troubling conclusion. Galaxy A, spotted one billion light years away, and which was apparently traveling at its redshift-indicated speed one billion years ago, will now be far more distant, as it continued speeding away over the intervening billion years.

Any regularly spaced plot of galaxies along Hubble's straight line, where both redshifts and velocities increase linearly with distance, shows galaxy spacing that existed in the past, and which must now be spaced with ever-increasing gaps out from us -- in the present state of the universe. This effect would be even more accentuated by, for example, the third galaxy out, Galaxy C, spotted three billion light-years away. Its "Hubble redshift" speed is supposedly three times faster than Galaxy A, and it would have been speeding thus for three times longer than Galaxy A by the time of this observation, making its present gaps with the other galaxies greater by a far more disproportionate amount than shown.

So, although the diagram shows gaps that all appear fairly equal in size and expand apart fairly equally as well to give a uniform universe from any location -- as required by the so-called Cosmological Principle -- this is actually not at all the case. Hubble's "redshift equals velocity" interpretation actually describes an impossible universe where the gaps grow disproportionately larger with distance -- from the perspective of every galaxy in the universe. But, of course, it is logically and physically impossible for the actual, present-moment gaps to be ever-larger outward from us toward distant galaxies, while also being simultaneously ever-larger outward from distant galaxies toward us. This impossible, but very real paradox in today's Cosmology is shown below, with two completely incompatible gaps from galaxies A to G and back again from galaxies G to A:



Erroneous "Dark Energy" Invention Draws Nobel Prize

It is this type of problem that has been building within the Cosmological community to crisis proportions, critically in recent years over the issue of specific types of supernovas and their distances and apparent speeds of recession away from us. Chronic fundamental oversights in Hubble's Law, redshift interpretations, and logical paradoxes in misinterpretations, have led cosmologists to conclude that supernova evidence proves our universe is accelerating ever-faster due to a mysterious form of "Dark Energy" that is entirely new to science.

Despite the fact that this new form of energy has no scientific explanation, has never been demonstrated in any experiment, and has never been identified on any energy spectrum, its "discovery" roughly 14 billion light-years away via the spectra of a handful of supernovas was recently awarded a Nobel Prize.

However, none of these paradoxes or mysteries would exist at all if the universe were relatively static and the detected supernova brightness and spectral redshifts merely arose from the nature and distance of the enormous spans of intervening space rather than "Hubble's Law".

Further Crisis Resolution: Einstein's Erroneous General Relativity Theory

Einstein's General Relativity theory presents a similar issue, with Einstein's reputation helping elevate it also to an effective gravitational 'law of nature', modeling the universe as a 'warped four-dimensional space-time realm' rather than one of gravitational forces in regular three-dimensional space.

This effective 'law' has likewise required observational interpretations to align with it for nearly a century, with cosmologists inventing physically unexplained and completely undetectable 'Dark Matter' that neither emits, absorbs, reflects or blocks light to account for tenfold discrepancies between Einstein's theory and observations.

However, were it not for this 'law of nature' status, and Einstein's reputation, following proper Scientific Method would merely have led to the conclusion that Einstein's largely untested theory is simply wrong -- now verified to be out by an enormous factor of ten when simply held to the same objective unbiased scientific observation and scrutiny as any other theory.

A bitter pill to swallow for huge vested interests in the scientific community who have staunchly supported this picture of the universe for decades? No doubt. An embarrassment to see a scientific icon knocked from his pedestal with one of his most long-standing revered theories shown to be completely false? Definitely. Reasons to knowingly send the whole of science and humanity off-track indefinitely to keep these facts hidden? Hopefully not!

Now, much as with "Hubble's Law", once we allow ourselves to question Einstein's effective 'law of nature' and simply hold it up to the same scientific scrutiny as any other theory, its tenfold disagreement with observations immediately disproves it. And, just as letting go of this communal mental block frees us to completely eliminate the mysterious 'Dark Energy' attached to our "Hubble's Law" beliefs, it also frees us to eliminate the mysterious 'Dark Matter' invisibly dominating our universe, attached to our General Relativity beliefs.

The Ongoing "Cosmological-Constant Blunder"

Einstein created his General Relativity theory -- a merger of Newton's gravitational-force theory and Minkowski's four-dimensional space-time abstraction -- to try to provide a truly universal model and new physical understanding of gravity, due to his strong dissatisfaction with Newton's theory; hence today's 'warped space-time' notion of gravity was born.

However, finding that his resulting equations could not be used to describe the static universe generally presumed at the time, but only one that either expanded apart or contracted together, Einstein further merged a sizably altered version of his equations describing a hypothetical mass-less universe envisioned by Willem de Sitter. Since de Sitter had already added an arbitrary control parameter to Einstein's equations in order to tune the dynamics of his hypothetical universe, Einstein adopted this parameter, later called the

‘Cosmological Constant’, hoping he might set it to a value that made his equations valid for our presumably static universe.

But during his attempts to model a static universe with these merged equations, Einstein became convinced that the universe was actually coasting apart, based on Hubble's ‘redshift equals velocity’ interpretation of an observed redshift in starlight all around us. Famously calling his arbitrary 'Cosmological Constant' introduction his “greatest blunder”, Einstein removed it from his General Relativity equations in the hope that his original equations might better model a universe now apparently coasting apart, presumably from a ‘Big Bang’ creation event.

But cosmologists later noted that observations based on Hubble’s ‘redshift equals velocity’ assumption actually suggest that the universe is not only coasting apart, but actively accelerating apart ever faster, apparently driven by a mysterious repulsive 'Dark Energy' now dominating the universe. And, since even Einstein’s return to his original equations could not model this accelerating expansion apart, his “Cosmological-Constant blunder” removal is now being reconsidered for return to General Relativity theory. This time its arbitrary addition is intended to model an accelerating universe model that hopefully works for this current belief, and is now persuasively renamed from Einstein’s “greatest blunder” -- his so-called ‘Cosmological Constant’ -- to the apparently new and mysterious 'Dark Energy' pervading the universe.

General Relativity -- a Theory that has Never Actually Worked

The problems from all of these arbitrary abstractions, mergers, additions, removals and re-additions have steadily mounted. Newton's 'gravitational force' theory has actually never been scientifically explained despite its familiar and intuitive nature, and neither has Minkowski's 'space-time' abstraction which Einstein merged with it to create his General Relativity theory. Further, de Sitter never claimed that his hypothetical mass-less universe with its arbitrary 'Cosmological Constant' was to be taken literally, and nor did Hubble ever scientifically explain or validate his ‘redshift equals velocity’ assumption that compelled Einstein to later remove his ‘Cosmological Constant blunder’.

As a result, and considering further ongoing alterations of Einstein’s General Relativity equations by various scientific camps, we have had a core theory of gravity for nearly a century now that has been cobbled together and repeatedly and arbitrarily altered to try to match the latest observations and beliefs, yet which has never actually worked at any point -- a fact that remains the case even today.

This is the very reason for the seemingly endless stream of ‘mysteries’ and ‘surprises’ and ‘puzzles’ that seem to arise from Cosmology decade after decade; in actuality, it is not our universe that is so strange and bizarre, but merely the distorted theories and beliefs through which we view our universe that make it appear so.

False Supporting Evidence: The Cosmic Microwave Background Radiation

Even further cracks appear once we begin allowing ourselves to question today's cosmological picture. For example, it can be readily shown that faint 'Cosmic Microwave Background Radiation' arriving from space is not the 'Big Bang whisper' it was claimed to be decades ago, but merely microwave noise from our local solar system and galaxy.

It is now known that the early ground-based detector was far too crude to discern any faint patterns from outside our galaxy, and that the featureless detected radiation contained no inherent indication of a distance of origin, yet it was, and still is considered the first detection and mapping of the structure of the early universe. This remains the case despite hindsight now showing that this early 'Big Bang whisper' claim is an obvious error that clearly should be retracted.

Once again, the case cannot be overstated. The original crude ground-based detector initially stumbled into an unexpected random microwave hiss of noise. It was eventually decided by some that this hiss was the highly sought-after proof of the then controversial "Big Bang' theory, after which patterns presumably representing the structure of the early universe were said to be found within this radiation; a Nobel Prize was even later awarded to this effort.

Crucially, it was much more quietly later acknowledged that the original random microwave hiss could only have been just that - a meaningless random hiss. This is because an extremely advanced detector would have been required to discern any meaningful pattern from a severely diminished signal across billions of light years of space, then across the 100-thousand light-years of our active galaxy, then through the radiation of our solar system and its burning sun, and finally our dense atmosphere. And the detector in question was orders-of-magnitude too crude - only able to pick up a meaningless random hiss of microwave noise given the task just described for any signal originating outside our galaxy or even well within it, let alone from the distant early universe.

Nevertheless, even today, despite full realization and recognition of the above, no retraction of the original erroneous "Big Bang whisper detection" has ever been issued from the Cosmological community. In fact, in quite the opposite move, a more detailed 'Cosmic Microwave Background Radiation' detection performed from orbit is said to agree with the initial 'early universe' detection pattern, despite recognition that the initial pattern is now verifiably meaningless - with the new detection effort also awarded a Nobel Prize.

Erroneous Double Nobel Prize-Winning 'Big-Bang' Proof

Today's now largely unquestioned 'Big Bang' theory was originally heavily debated until ground-based radio telescopes detected background microwave hiss that was claimed to have patterns identifying it as ancient, greatly redshifted radiation from the 'Big Bang' creation event -- drawing a Nobel Prize.

However, first, it is important to note that this background microwave hiss is quite unlike redshifted starlight. It is not associated with any observable distant stellar objects whose

radiation is dramatically redshifted down to microwave frequencies, but is instead an almost perfectly uniform hiss of background microwaves arriving from all directions. As such, it is no more evidence of an origin of ancient radiation from the distant early universe than recent microwave noise generated from the billions of stars in our local galaxy or even our nearby blazing Sun.

Indeed, we now know, from the far more sensitive COBE satellite, that the original detected radiation was composed almost entirely of radiation from precisely these local sources. COBE also showed that any patterns that may exist in the faint radiation from beyond our galaxy would be far below the detection threshold of the original radio telescopes, and so the initial Nobel Prize-winning claims of patterns from the early universe were verifiably nothing more than wishful thinking at best.

Secondly, the COBE and later WMAP satellites also showed that any true ancient radiation patterns would be dwarfed by combined microwave disturbances and noise a hundred-thousand times more powerful in crossing the immensity of intergalactic space, then our own galaxy of billions of active stellar objects, then our solar system with its blazing sun, and finally our highly absorbing and distorting atmosphere. And since a great deal of this overwhelming distortion is largely or completely random, there is no way to reliably characterize and extract it to uncover any extremely subtle and highly distorted inter-mingled patterns a hundred-thousand times weaker.

Despite these facts, those behind the COBE and WMAP satellite projects claim that not only have they clearly discerned even more detailed patterns of the early universe from this radiation, but also that these patterns correlate with those in the original detection claim, drawing yet a second Nobel Prize. Yet, as just described, it is a physical impossibility to recover and reconstruct any faint original signal from the overwhelming distorting random noise. Also, these later projects actually show that it would have been impossible for the original detector to discern any actual ‘early universe’ patterns whatsoever in the original radiation.

So the first scientifically responsible outcome from the COBE and WMAP projects should have been a resounding retraction of the initial Nobel Prize-winning claim, as the technology to make such a claim was now unquestionably lacking -- by orders of magnitude. However, not only was no such retraction made, but instead the verifiably meaningless “structural map of the early universe” was re-released after the COBE and WMAP data had been processed for months until it was convincingly superimposed on top of it, reinforcing it with further detail, and collecting a second Nobel Prize in the process.

As a result, a meaningless noise signal is, even today, held as verification of the 'Big Bang' theory, cementing it into our science and our collective psyches and belief systems to the point where it is now a largely forgone conclusion and unquestioned -- if not even unquestionable - scientific ‘fact’.

Time to End Our Mounting Theoretical and Physical Crisis in Cosmology

So, from a theoretical perspective, our core gravitational theory in Cosmology, General Relativity, is a patchwork of scientifically unexplained, abstract sub-theories, with a 'Cosmological Constant' that is continually added and removed in repeatedly failed attempts to match observations, proclaimed as everything from a “great blunder” to a mysterious ‘Dark Energy’ permeating the universe.

And from a physical perspective, we have recent claims of a universe somehow accelerating apart after a presumed 'Big Bang' creation event despite conflicting observations increasingly showing all the stars existing within stable galaxies or galactic clusters threading throughout the universe. The recent law-violating claims of a universe accelerating apart are based on Hubble's largely unquestioned and scientifically unverified assumption that redshifted starlight equals velocity, and the best 'Big Bang' evidence is now actually verifiably erroneously Nobel Prize-awarded microwave noise.

This is undeniably the current state of Cosmology today -- and the current destination of billions of public tax dollars earmarked for scientific investigation and advancement. It is clear that vested interests in the scientific community are not about to enact any significant change to this state of affairs, so it is up to an informed and concerned public to do something about this ongoing state of crisis in our science.

Farewell ‘Big Bang’, ‘Dark Matter’, ‘Dark Energy’ and ‘Space-Time’

If we simply allow ourselves to take a critical look at a double Nobel Prize-winning observational claim and re-think two highly questionable century-old ‘laws of nature’, we remove three of today’s largest mysteries from Cosmology: the ‘Big Bang’, ‘Dark Matter’ and ‘Dark Energy’. It is worth noting that these Cosmological claims, ‘laws’ and observations are largely abstract or remote in nature, and so are far more susceptible to being thrown wildly off track, and require extra care and scientific due-diligence.

However, now with appropriate corrective analysis, there is no longer a mysterious infinitely small singularity from which the entire universe burst forth, no longer completely undetectable exotic ‘Dark Matter’ dominating our universe, and no longer a mysterious law-violating ‘Dark Energy’ accelerating the universe apart. In their place is a possibly static universe of potentially infinite size and age, within which stars of regular matter undergo continual births and deaths, with gravity-driven dynamics in ordinary three-dimensional space.

This leaves a number of immediate questions: Does the scientific community for some reason want to retain our current cosmological picture, with its deep and possibly irresolvable, ongoing mysteries and unquestioned “laws of nature”? And if not, and they are truly sidetracked on a centuries-old journey in search for answers, then what might this gravity be that is driving our simple and possibly static and endless universe? Newton’s gravitational-force theory has many problems, as Einstein recognized in trying to replace it, and Einstein’s warped space-time theory has even greater issues. And we certainly won’t get anywhere inventing “Dark Matter” or “Dark Energy”, so what is the answer?

We need a credible new Theory of Everything including a new theory of gravity.

Cosmology in Crisis (excerpt by Mark McCutcheon upon which this article is based)
http://www.themarginal.com/cosmology_in_crisis_excerpt.pdf

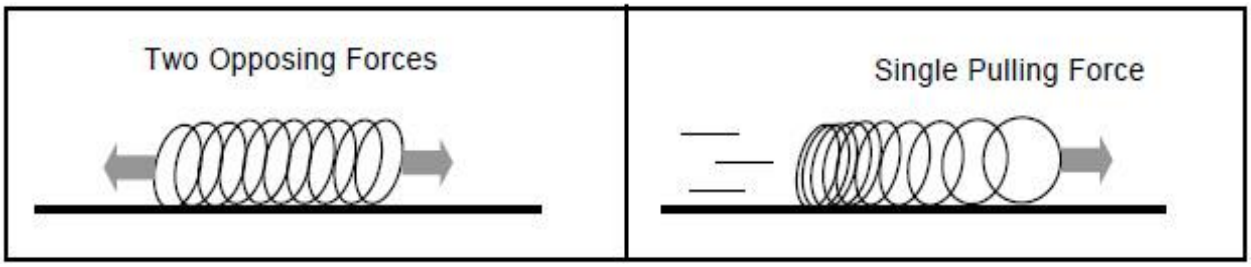
Puzzle Universe image copyright: Lynette R. Cook
Websites: http://extrasolar.spaceart.org/space.html and www.zazzle.com/lynettecook

Summary

Gravity Breakthrough: Springing into a Gravitational Revolution

Gravity is one of the most familiar everyday phenomena, yet it has mystified scientists and laymen for centuries. Even today, although the current official position on gravity is a continual "space-time warping" around objects - a claim from Einstein's General Relativity theory, it is also still widely considered an endless attracting force emanating from objects, as claimed in Newton's gravitational theory. Setting aside the troubling implications of two different physical descriptions of gravity in our science for the moment, it turns out that the behavior of a simple spring may hold the final answer to this age-old mystery.

Consider what happens when a loosely coiled spring is stretched apart from both ends while laying on a tabletop, as shown below in the left-hand frame. The opposing forces spread equally across the spring, causing an equal coil spacing across the spring, which also occurs whether either force pulls fully from the very end or is divided to pull directly on each coil:



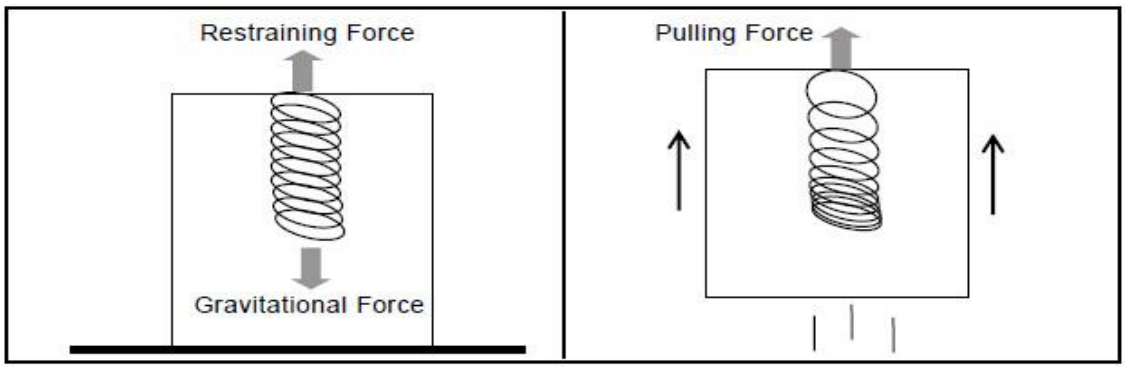
However, with only a single continual pulling force on one end, shown on the right, the coils stretch more at the leading end as they strain to continually accelerate the ongoing resisting inertia of the rest of the spring. In this case, there is successively less stretch toward the trailing end as there is successively less trailing-coil mass to cause inertial drag.

This deceptively simple experiment has enormous implications for both Newton's gravitational force and Einstein's 'warped space-time' theory of gravity - and for understanding the true physical nature of gravity itself. The first important point is that it highlights a widely overlooked but critical error surrounding Einstein's famous "space elevator" thought experiment, which forms the foundation of his Principle of Equivalence and his later associated General Relativity theory of gravity.

The Erroneous "Principle of Equivalence"

Einstein claimed that all experiences and experiments occurring inside a constantly accelerating elevator moving upward in deep space - far from any gravitational influence - would be indistinguishable from them occurring under the influence of Newtonian gravity on Earth. This claim is known as the Principle of Equivalence, and forms the cornerstone of gravitational physics in today's science; however, the simple spring experiments just discussed can be used to show that this is an erroneous claim, with enormous implications for our understanding of gravity.

Similar to the left-frame tabletop experiment above, a hanging spring on Earth should have two opposing forces distributed across it, equally spreading its coils - the force of gravity pulling downward and the restraining force that effectively pulls upward. However, as in the right-frame of the above tabletop experiment, a spring attached to the ceiling of Einstein's



continually accelerating deep-space elevator, far from Earthly gravity, should exhibit the unequal coil distribution of a spring pulled from only one end:

So, this shows that Einstein's claimed "Principle of Equivalence" between Newtonian gravity and pure acceleration in deep space must be wrong - the effect of being accelerated upward in space must differ from an attracting force emanating from a planet. If Einstein had remained faithful to his original "space elevator" inspiration, rather than developing his General Relativity theory for equivalence to Newton, he would have produced a new understanding of gravitational physics that clearly differed from Newton's, and which could be easily tested by a simple hanging spring experiment. Instead, Einstein effectively abandoned his space-elevator inspiration in favor of a mistaken "Principle of Equivalence" to Newton, and a related "warped space-time" proposal for the physics of gravity in his General Relativity theory.

A Verifiable Revolution in our Understanding of Gravity

But why concern ourselves with this hanging spring issue in a deep-space elevator, especially if we already know that Einstein's Principle of Equivalence and General Relativity theory are widely accepted today, and supposedly even proven by highly sophisticated experiments? The reason is because this very same hanging spring experiment can be performed by anyone - by simply suspending a well-known spring toy from one end, showing that gravity on Earth behaves precisely as in Einstein's original space-elevator inspiration, and not as in either Newton's "gravitational force" theory or Einstein's equivalent "warped space-time" General Relativity theory. This simple experiment shows a hanging spring with an unequal distribution - here on Earth - which could only occur if it were continually accelerated upward from its suspended end, and not stretched uniformly by an attracting "gravitational force" or equivalent "space-time warping".

This further shows why no solid scientific explanation for the operation of Newton's proposed attracting force has ever been settled upon, and nor has its apparently endless power source ever been identified or explained. This also means that Einstein's efforts to

mirror Newtonian gravitational theory in his General Relativity theory are equally verifiably in error, and that the experiments presented as proof were conceived and designed such that their claimed "success" actually constitutes no particularly meaningful result at all.

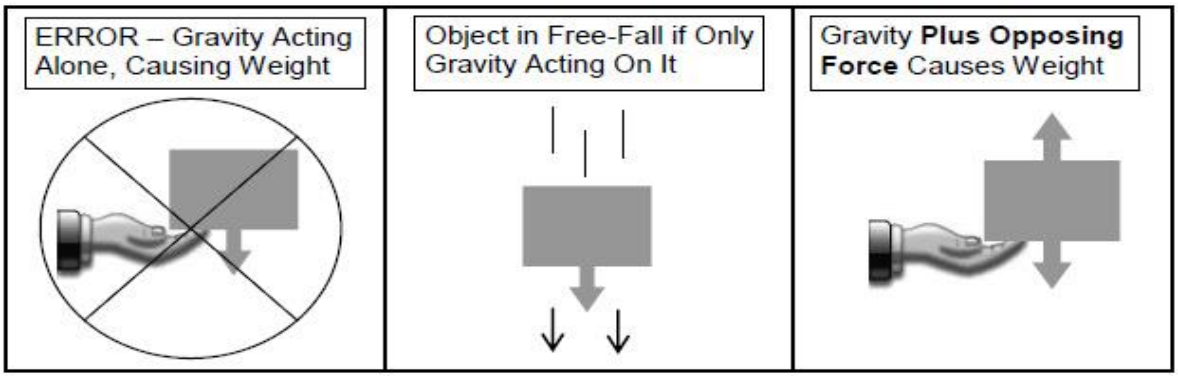
Could the Evidence Still Support Today's Gravitational Theories?

The preceding discussion shows that Newton's theory of an attracting gravitational force is readily disproven by a simple hanging spring, as is Einstein's 'warped space-time' General Relativity theory, which was deliberately designed to be functionally equivalent. But before addressing what all of this means, it can still be tempting to dismiss the above discussion with intuitive support for today's gravitational theories, such as the following:

'The coils at the top of a hanging spring simply bear the weight of the rest of the spring hanging below. And those further down have fewer coils below them, thus less weight to bear, stretching successively less, resulting in more stretch at the top and successively less toward the bottom - a non-uniform hanging spring.'

This may initially sound reasonable enough, but the first hint of a flaw in this logic is that it is at odds with the earlier tabletop experiment showing that two opposing forces (such as gravity pulling down and a restraining force pulling up) should result in uniform coil spacing. So, what is the logical flaw in the above reasoning? It is the presumption that the strain caused by weight is solely due to a downward pull from gravity, and that this strain accumulates, with the weight of the lower coils adding to greatly stretch the upper ones.

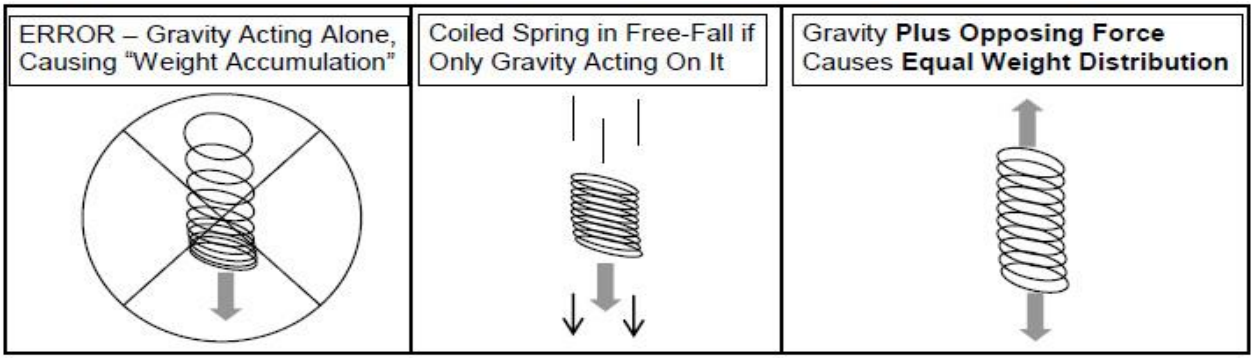
The error in this logic is shown in the first frame of the diagram below, where an object's weight is shown as solely due to a downward pull from gravity. If it were literally true that there is nothing but a downward force on the object, then the object would not rest as a weight in our hand, but would be in a weightless free-fall, as shown in the second frame. The very reason the object is not in a weightless free-fall, but sits instead as a weight in our hand, is because there is an opposing force - in this case from our muscles - holding it in



place, as shown in the last frame:

Similarly, the error of both logic and physics in the weight-based reasoning for the non-uniform hanging spring is the suggestion that the weight of each coil is solely due to a gravitational force (frame 1 below), with downward weight accumulating along the spring. In actuality, a scenario with only a downward gravitational force would produce a spring in

weightless free-fall (frame 2 below), which would accelerate toward the ground with no stretching at all, in the absence of an opposing upward force. A statically hanging spring (last frame), however, actually has two opposing forces distributed throughout it - according to today's gravitational theory (gravity acting downward and the restraining force acting upward), which, again, should equally spread its coils.



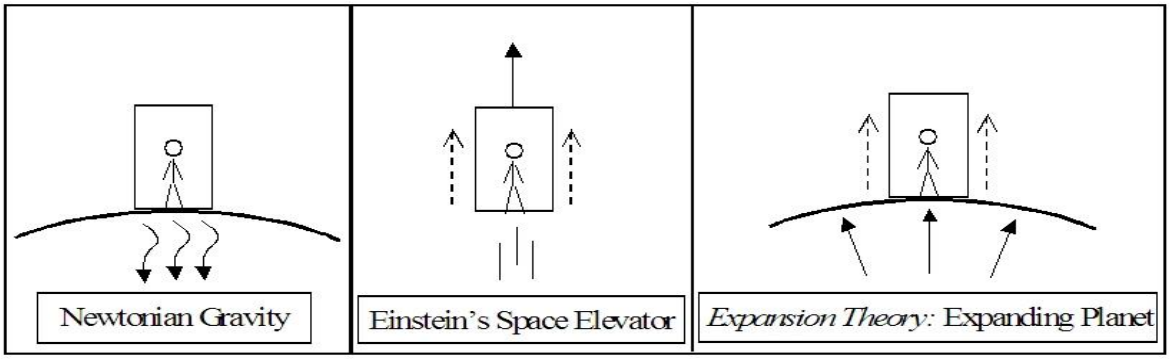
There can be no such thing as 'accumulating coil weights' in a hanging spring, caused by a lone gravitational force pulling them downward and adding up to cause a non-uniform distribution, but only equally stretched coils from two opposing forces. There remains no viable explanation for the observed non-uniform distribution of a simple hanging spring in today's science - experimentally disproving all current gravitational theory.

The True Nature of Gravity Finally Revealed

So then, what does all of this mean? If a simple hanging spring experimentally disproves both Newton's attracting-force suggestion and Einstein's warped space-time proposal, what does it mean when the experiment mirrors Einstein's upwardly accelerating space elevator? A strong hint is that this experimental result is completely in line with a compelling new theory of gravity, known as Expansion Theory.

This new theory states that all atoms - and, by extension, all objects composed of atoms - are slowly and continually expanding, by roughly one-millionth their size each second. This underlying expansion is unseen directly, as everything expands equally, but is felt as a force beneath us from our huge expanding planet, and is seen indirectly as all objects, regardless of mass, appear to fall equally to the ground (which actually rises to meet them all equally).

This explains why Einstein's space elevator correctly captures the observed behavior of a hanging spring on Earth, since our planet's constant expansion effectively acts as an



elevator constantly accelerating us upward.

In this case, a suspended spring on Earth effectively hangs in the "elevator", with a singular continual upward pulling force as we hold it suspended. Here, the accumulated ongoing resisting inertia of the lower coils would indeed cause greater stretching in the upper coils and the non-uniform distribution observed in the hanging spring.

This also explains why the spring's behavior does not match either Newton's or Einstein's demonstrably flawed downward-pulling theories of gravity, which could only cause equal coil distribution. And, according to the formal Scientific Method, any single solid contrary experimental result definitively disproves any theory - regardless of how well it may otherwise match or model observations.

The only viable conclusion from this discussion, and from both experiment and our understanding of physics, is that the effect we call 'gravity' arises from a universe of actively expanding matter, rather than one of separate inert matter and active "gravitational energy" with no known, and necessarily draining, power source. Ultimately, in Expansion Theory, all forms of "energy" turn out to be various forms of actively expanding atomic or subatomic matter, with "energy" being a mere misunderstanding of a universe where all matter actively expands by its very nature of existence.

Summary

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Links to articles and excerpts online concerning Atomic Expansion Theory

My main article about Atomic Expansion Theory has been linked recently on OpEdNews. Ensued a series of questions and answers that clarify further Mark McCutcheon's theory:

http://www.opednews.com/Quicklink/NASA-s-Fermi-Mission-Expan-in-Sci_Tech-Dark-Energy_Dark-Matter_Energy_Energy-160813-737.html

Here are the links to my articles and other excerpts:

Expansion Theory - Our Best Candidate for a Final Theory of Everything
http://www.themarginal.com/theory_of_everything.html

The Final Theory of Everything, An in-depth interview with Mark McCutcheon
http://www.opednews.com/articles/The-Final-Theory-of-Everyt-by-Roland-Michel-Trem-Atoms_Einstein_Electron_Light-160921-338.html

Dark-Matter, Dark-Energy and the Big-Bang All Finally Resolved
http://www.themarginal.com/cosmology_in_crisis.html

Cosmology in Crisis (excerpt by Mark McCutcheon upon which the article above is based)
http://www.themarginal.com/cosmology_in_crisis_excerpt.pdf

Pioneer Anomaly, Slingshot Effect and Gravitational Inconsistencies Explained
http://www.themarginal.com/pioneer_anomaly.html

Breakthrough in Faster-Than-Light Travel and Communication, and the Search for Extraterrestrial Intelligence (SETI)
http://www.themarginal.com/faster_than_light.html

Gravity Breakthrough: Springing into a Gravitational Revolution
http://www.themarginal.com/gravity_spring_proof.html

The Final Theory by Mark McCutcheon - Chapter 1 - Investigating Gravity
http://www.themarginal.com/final_theory_excerpt.pdf

New Age Physics by Roland Michel Tremblay
http://www.themarginal.com/NewAgePhysics.pdf
http://www.themarginal.com/NewAgePhysics.docx

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